Network Technical Standard (NTS)

NTS 014

Infrastructure Drafting Standard

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Interpretation

In this document, except where the context otherwise requires—

- The words “shall” and “must” is to be understood as denoting a requirement which is mandatory.
- The word “should” is to be understood as denoting a requirement which is not mandatory but recommended.
- The word “includes” in any form is not a word of limitation. Mentioning anything after "includes" or similar expressions (including "for example") does not limit what else may be included.
- A reference to a section, clause, schedule or appendix is a reference to a clause of or schedule or appendix of this document.

Nomenclature

Where any of the following symbols are used within this document, the textual description provided to the right is its intended meaning:

ⓘ This symbol intends the accompanying text to be read as INFORMATION. Common information accompanying this symbol includes RATIONALE and GUIDANCE for the associated requirement.

Copyright

Disclaimer

Preface

Under the *Transport Integration Act 2010* (Vic) the functions of the Head, Transport for Victoria include the development and implementation of standards, guidelines and practices for the public transport system, the road system and related matters. The Head, Transport for Victoria is administered by the Department of Transport and Planning (DTP).

DTP Network Technical Standards respond to the Head, Transport for Victoria objectives and responsibilities, legislative requirements, Victorian Government policies and guidelines, industry best practice (local and international) and emerging technologies.

DTP translates these requirements along with defined user requirements into operational concept descriptions and technical system requirements. These in turn form the basis for network technical standards, guidance and advice in the support of operations and projects involved in the delivery or change of the arterial road and motorway network ("road network") and the public transport network which includes:

- The Melbourne Metropolitan Rail Network (MRN)
- The Melbourne Metropolitan Tram Network (MTN)
- The Melbourne Metropolitan Bus Network (MBN)
- The Victorian Regional Rail Network (RRN)
- The Victorian Regional Bus Network (RBN)

Purpose of Network Technical Standards

Network Technical Standards (NTSs) are produced and maintained to define and communicate a prescribed standard set of requirements which:

- Facilitate the compatibility, interoperability and consistency of assets and systems within the Victoria Transport System (VTS).
- Define interoperability requirements between vehicles and state infrastructure.
- Ensures Whole-of-Life considerations within the VTS.
- Ensures a Whole-of-System approach to changes within the VTS.
- Increases the level of safety and reliability on the VTS.
- Ensures that Transport Network strategies and configuration states are considered in any changes to the VTS.

A Network Technical Standard may call in elements of or entire Australian Standards and International Standards but will be tailored for the VTS. Therefore, an NTS must have precedence over Australian Standards and International Standards.

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1 INTRODUCTION

1.1 Purpose

The Department of Transport and Planning (DTP) is continually working to ensure that the information contained within the DMS accurately represents the Victorian rail and road infrastructure asset base. This document aims to reduce key issues identified within the data in the DMS that include, but are not limited to:

- The integrity of information contained in the drawings due to a range of historical factors, including undefined policy and standard to uncontrolled drawings and revisions distributed within the rail and road industry
- The integrity of the data; DTP is unable to confirm the 'As-built' status of historic engineering drawings maintained in the system. This is largely due to the 100 years history of the data and the practice of releasing uncontrolled copies of drawing to various contractors

1.2 Scope

This document mandates the requirements for the production and/or modification of rail and road infrastructure drawings. The DTP Infrastructure Drafting Standards outline drawing specifications that are endorsed by DTP.

All new and altered rail and road infrastructure drawings shall be stored on the Drawing Management System (DMS) and shall comply with the DTP Infrastructure Drafting Standards to ensure that consistency is achieved in the production of infrastructure asset drawings for the Victorian rail and road networks.

This Standard does not detail the processes involved in accessing and returning Drawings to DMS, or the roles and responsibilities of persons authorised to perform these processes. Refer to the PTV DMS User Guide on the DMS website and any relevant asset data handover requirements.

1.3 Applicability

The Drawing Management System (DMS) contains technical drawings and plans for the Victorian rail and road networks. The drawings contained within the DMS are used by DTP, network operators and consultants designing and implementing rail and road infrastructure upgrades and undertaking general maintenance activities.

The implementation of DTP Standards shall continue standardisation and consistency across the Victorian rail and road industries that shall enable the automation of capturing drawing information in the DMS and shall improve the quality of data stored on the DMS.

1.4 Legislative Compliance

Not applicable.

2 DOCUMENT CONTEXT

This document has been developed to establish infrastructure drafting standards for engineering drawings controlled and managed by DTP as custodian for the State of Victoria. Infrastructure drawings reside in the Drawing Management System (DMS).

This document specifies the drawing requirements for all new As-built, revised or redrawn infrastructure engineering drawings for submission to DTP. Rail and road infrastructure drawings shall comply with these standards to be accepted by DTP into the DMS.

Implementation of the DTP infrastructure drafting standards within the Victorian rail and road industry shall enable standardisation of all As-built drawings.

The document is presented as defined within

Section Number	Section Heading	Description
1	Introduction	Provides the outline for the NTS.
2	Context	***This section is informative***. The purpose of this section is to define how this document should be read and its relationship to other documents.
3 to 21	Requirements	***This section is normative.*** This section provides the requirements for the Infrastructure Drafting Standard.
22	Conventions and Definitions	***This section is informative***. The purpose of this section is to clearly define the Infrastructure Drafting Standard conventions.

2.1 Rail and Road Distinctions

The DMS has independent storage vaults for rail and road project submissions. Table 2 Level 1 File Format and DMS Vault in Section 4.1 define what disciplines can form a rail or a road submission.

Tram Infrastructure drawings should be developed and managed as per Section 16, unless they can be wholly contained within other relevant discipline sections (section 9 to 15).

Section Headings

Where a section heading denotes **'(Rail)'**, this entire section is applicable to rail DMS submissions only.

Where a section heading denotes **'(Road)'**, this entire section is applicable to road DMS submissions only.

Where a section heading does not include **'(Rail)'** or **'(Road)'**, this is applicable to both rail and road submissions to DMS.

Section Text

Where it is not appropriate to identify the DMS submission type within a section heading or where a section relates to both DMS submission types but the approach varies, text shall start with the following:

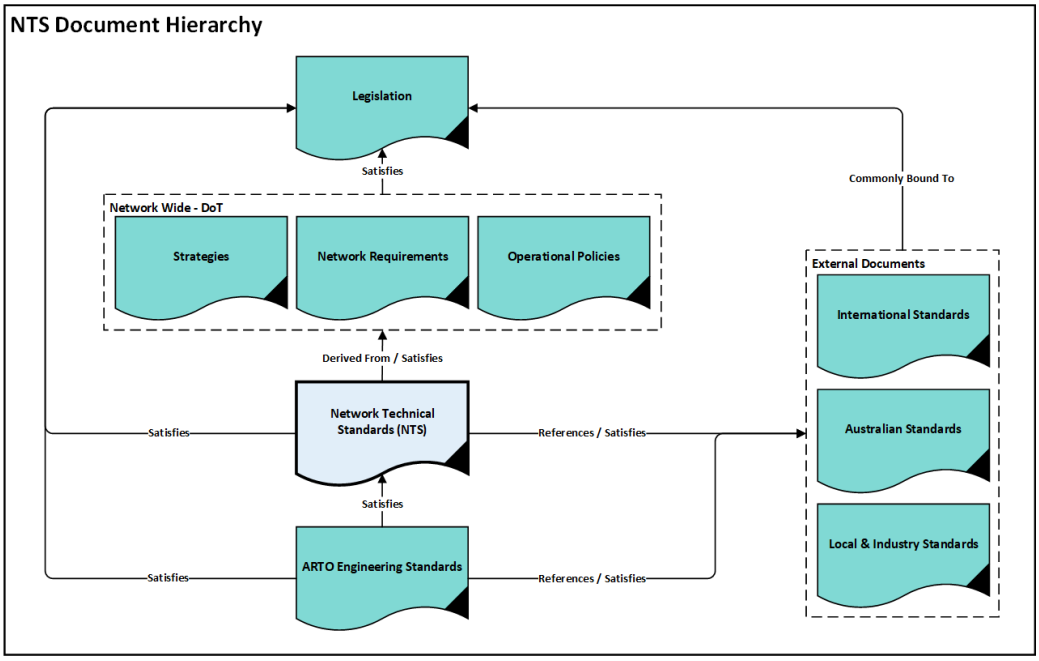
'For rail submissions…' or 'For road submissions…'

VicTrack References

Where 'VicTrack' is referenced within this document such as text style and dimension styles this is valid for both rail and road drawings and submissions to DMS.

2.2 Document Hierarchy

The following figure describes the position of Network Technical Standards (NTS) in relation to the Asset Standards Documentation Hierarchy for rail and road.



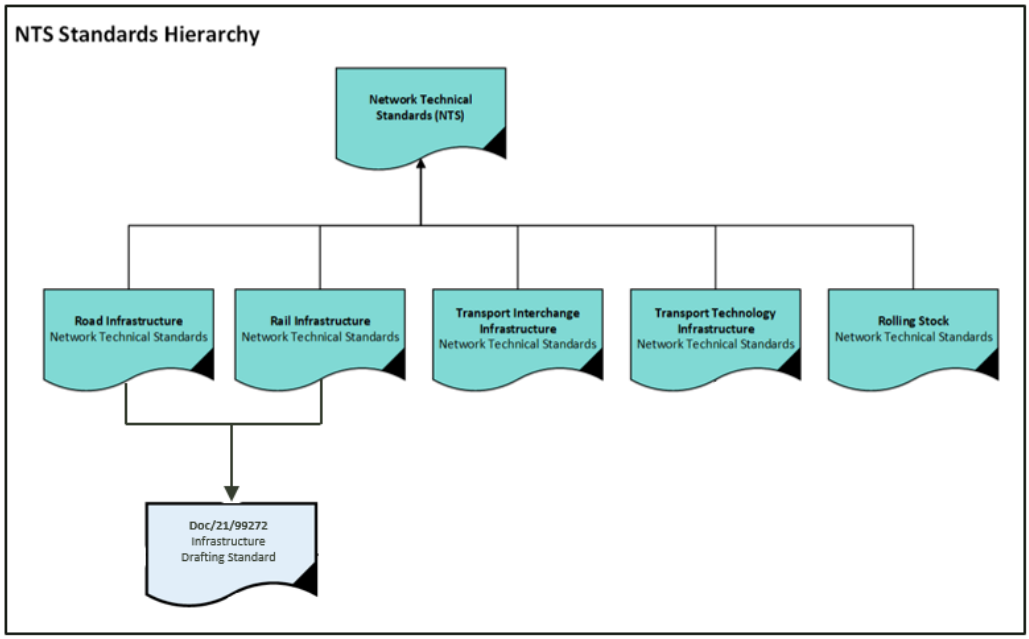
2.2.1 Related Documents

All drawings, relevant documentation, forms, seed files or any other baseline information listed in this standard, are available on the DMS website (https://dms.ptv.vic.gov.au/Dms/#/login).

Road standard drawings are available here (https://www.vicroads.vic.gov.au/business-and-industry/technical-publications)

2.3 Standards Hierarchy

The following figure demonstrates the position of this standard in relation to DTPs NTS Standards Hierarchy.



1. Uncontrolled Standards may not be referenced within the DTP Standards. These include former PTC Standards, Franchisee Standards, Franchisee Subcontractor Standards and Infrastructure Lessee Standards.
2. Controlled Standards, including Australian Standards and other DTP Standards, may be referenced but only if:

- the referenced item cannot be adequately explained with an amount of text that could reasonably be inserted into the body of the Standard
- the reader is not referenced to another Controlled Standard necessary for the item to be adequately explained i.e. one document link only
- the referenced document is a Figure or Table and could not reasonably be included in the appendices of the Standard

3. DTP Standards will not contain any information that can be construed as a work instruction, procedure, process or protocol. This information forms the basis of each individual entity's Safety Accreditation Certification, and, as such, is outside the scope of DTP Standards.

3 REQUIREMENTS

The DTP Infrastructure Drafting Standards are provided in two parts referred to as LEVEL 1 and LEVEL 2.

LEVEL 1 (Section 1 to Section 8) specifies drafting requirements applicable to **all** As Built drawings and defines the following information:

- Cell/Block Libraries
- Colour Tables
- GIS Reference
- Date Stamps
- Dimensions
- Drawing Completion
- Drawing Meta Data
- Drawing Numbering
- Drawing Origins
- File Format
- Font Files
- Level Names
- Line Styles
- Line Weight
- Naming Conventions
- Plotting
- Seed Files
- Settings
- Text Styles
- Titleblocks

LEVEL 2 covers the **specific** requirements for each of these disciplines listed below:

- Signals (Section 9)
- Railway Track and Civil (Section 10)
- Telecommunications (Section 11)
- Train Electrical Network (Section 12)
- Architectural (Section 13)
- Building Services (Section14)
- Structural (Section 15)
- Tram Infrastructure (Section 16)
- Road (Section 17)
- Road Drainage (Section 18)
- Intelligent Transport Systems (Section 19)
- Geotechnical (Section 20)
- Survey and Land (Section 21)

3.1 Access to PDF Files of Drawings

PDF files of engineering drawings are accessible via the DMS website and can be viewed online and/or copied out by an Authorised Viewer. A copied-out PDF file is for information purposes only and for printing.

A copied out PDF file is uncontrolled, and the content may not be current.

3.2 Submission of Drawings to DMS

The CAD file for each As-built drawing shall be submitted in both native and PDF format. PDFs are to be text searchable.

For rail submissions the CAD file shall be a clean match to the PDF. All 'non-print' entities must have their display turned off.

For road submissions 'non-print' entities are not required to have their display turned off.

For rail submissions all future equipment and future works shall be removed from the CAD file prior to submitting the As-Built drawings to the DMS.

The general requirements for submitting drawings to DMS are outlined below. Discipline specific requirements are outlined in the relevant Level 2 Sections.

3.3 Submission of Single Sheet and Multiple Sheet Drawings

For road submissions refer to Section 6.3.

For rail submissions all drawings submitted to DMS shall be single drawing sheets with the exception of specialist drawings listed below:

All Disciplines

- Index Sheets

Train Electrical Network Discipline

- Refer to Section 12.4.4 for drawing types

Signal Discipline

- Refer to Section 9.4.2 for drawing types

Where a dispensation request is required, the request shall be lodged to the Accredited Rail Transport Operator (ARTO) / DTP Engineering Division for review.

A dispensation approval document shall be submitted to the DMS in accordance with the NTS-DMS Standard Processes.

3.3.1 Single Sheet Drawings (Rail)

For a single As-built drawing sheet, the PDF file of the drawing shall contain two sheets. The first sheet shall be:

- Sheet View 1 Sheet 01 of 01

The second sheet shall contain the scanned copy of the Drawing Certifier's name (uppercase letters), date and the Drawing Certifier's handwritten signature. This scanned copy shall be in colour. The Drawing Certifier's signature shall be signed in the area provided on the top left-hand corner of the Titleblock and shall be in the form of:

Name: J CITIZEN Certified by: Signature Date DD/MM/YY

Refer to Section 5.7.1 for further details on the use of Single Sheet Drawings.

Refer to the PTV-NTS-012 Drawing Management System Standard Processes for guidance on Digital Signature requirements.

3.3.2 Multiple Sheet Drawings (Rail)

Where the As-built drawing contains multiple sheets, the PDF file shall contain:

- Two copies of the Key Plan; and,
- One copy of each remaining sheet.

The second copy of the Key Plan shall contain the scanned copy of the Drawing Certifier's name (upper case letters), date and the Drawing Certifier's handwritten signature. This scanned copy shall be in colour. The Drawing Certifier's signature shall be signed in the area provided on the top left-hand corner of the Titleblock and shall be in the form of

Name: J CITIZEN Certified by: Signature Date DD/MM/YY

The certified signed Key plan shall be inserted immediately behind the unsigned Key plan within the PDF.

Refer to Section 5.7.2 for further details on the use of Multiple Sheet Drawings.

Refer to the PTV-NTS-012 Drawing Management System Standard Processes for guidance on Digital Signature requirements.

3.4 Submission of Reference Drawings

For a Reference Drawing, the Drawing Authoriser's company, initial of the Drawing Authoriser and date must be provided on the bottom right-hand corner of the drawing above the Titleblock. It shall be in the form as provided in the cell/block library and is shown below. There may be more than one Drawing Authoriser for a Reference Drawing.

OPERATORS	AUTHORISED BY	DATE
METRO		
V/LINE		
VICTRACK		

Figure 1 Reference Drawing Train Block

TRAM OPERATOR	AUTHORISED BY	DATE
YARRA TRAMS		

Figure 2 Reference Drawing Tram Block

3.4.1 PDF Colour

The PDF file shall be submitted in accordance with the colour requirements outlined in the table below unless excepted in specifications listed in the Level 2 Standards.

Table 1 Drawing Colour Information

Discipline	Colour / Black & White
Architectural	Black and White
Architectural (Landscape)	Colour
Building Services	Colour
Railway Track and Civil	Colour
Civil Structural	Colour
Train Electrical Network	Black and White
Signals	Black and White
Telecommunications	Colour
Structural	Black and White
Tram Infrastructure	Colour
Road	Colour
Road Drainage	Colour
Intelligent Transport Systems	Colour
Geotechnical	Colour
Survey and Land	Colour

3.5 Vendor drawings

Vendor drawings (also known as Shop drawings) are drawings created by manufacturers or fabricators that contain specific details of proprietary solutions, products, or fabricated elements they have supplied.

A request shall be lodged to the Accredited Rail Transport Operator (ARTO) / DTP Engineering Division for approval prior to submitting Vendor drawings to DMS. If approved, Vendor drawings shall be submitted to DMS with a new DTP compliant Drawing Index sheet that lists each individual vendor drawing number and vendor drawing title.

The DTP compliant index sheet should apply the requirements of Sections 5 to 7 regarding file naming, drawing numbering, and title block metadata.

Dispensation will not be required against the drafting standard utilised for producing the vendor drawings.

4 DRAWING SET UP (LEVEL 1)

4.1 File Format and DMS Vault

The File Format for each drawing discipline and which DMS vault they can be submitted to shall be in accordance with the following table.

Table 2 Level 1 File Format and DMS Vault

Discipline	CAD Format Specification	Version	DMS Vault
Architectural	AutoCAD	AutoCAD Version up to 2020	Rail or Road
Architectural (Landscape)	MicroStation or AutoCAD	Compatible with Version up to MicroStation Connect Update 10 or AutoCAD Version up to 2020	Road
Architectural (Landscape)	AutoCAD	AutoCAD Version up to 2020	Rail
Building Services	AutoCAD	AutoCAD Version up to 2020	Rail or Road
Railway Track and Civil	MicroStation	Compatible with Version up to MicroStation Connect Update 10	Rail
Civil Structural	MicroStation or AutoCAD	Compatible with Version up to MicroStation Connect Update 10 or AutoCAD Version up to 2020	Rail or Road
Train Electrical Network	MicroStation	Compatible with Version up to MicroStation Connect Update 10	Rail
Signals	MicroStation	Compatible with Version up to MicroStation Connect Update 10	Rail
Telecommunications	AutoCAD	AutoCAD Version up to 2020	Rail
Structural	AutoCAD	AutoCAD Version up to 2020	Rail or Road
Tram Infrastructure	MicroStation	Compatible with Version up to MicroStation Connect Update 10	Rail
Road	MicroStation or AutoCAD	Compatible with Version up to MicroStation Connect Update 10 or AutoCAD Version up to 2020	Road
Road Drainage	MicroStation or AutoCAD	Compatible with Version up to MicroStation Connect Update 10 or AutoCAD Version up to 2020	Road
Intelligent Transport Systems	MicroStation	Compatible with Version up to MicroStation Connect Update 10	Road
Geotechnical	MicroStation or AutoCAD	Compatible with Version up to MicroStation Connect Update 10 or AutoCAD Version up to 2020	Rail or Road
Survey and Land	MicroStation	Compatible with Version up to MicroStation Connect Update 10	Rail or Road

The following disciplines may be drawn in Revit:

- Architectural
- Building Services
- Telecommunications
- Structural

The Revit requirements are set out in the respective discipline specific section in Level 2 of this document.

Where possible, the most recent version of Revit shall be used at the date of contract award. All Revit files shall be submitted to the DMS in conjunction with the exported AutoCAD output files.

DTP recognises that a large number of drawings that exist in DMS are hybrid files. The aim is for all drawings to be redrawn in the appropriate program according to Table 2 Level 1 File Format to progressively eliminate hybrid files.

For Road vault submissions where AutoCAD or MicroStation file formats are permitted, a single format should be used for the submission of that set of drawings, e.g. a Road Drainage submission shall not have a combination of AutoCAD drawings and MicroStation drawings.

4.2 Template or 'Seed' Files

The standard template or seed files shall be used to ensure standardisation of drawing parameters used by the Victorian rail and road industry.

MicroStation or AutoCAD drawings should be created from the formal DTP template, seed files and approved CAD attributes. Seed / template files typically contain CAD settings such as units, layers, colours, etc. The seed / template file also contains the Titleblock (refer to Section 7). The Titleblock is in the sheet view (refer to Section 5.7) and is not visible when the seed/template file is opened.

Revit template files are available for download from the DMS website, under Documents and Drawings / Templates and Standards.

Content available includes Discipline templates, Titlesheet family and Titlesheet shared parameters.

To ensure that current seed / template files are used, the seed/template files shall be downloaded from the DMS web site at the beginning of each new project.

4.3 GIS Reference (Rail)

New, redrawn and revised drawings, whether they are to scale or schematic, shall include spatial information inserted into the Titleblock that allows the drawing to be positioned in its correct geographical location.

Typically plan drawings shall show Melbourne to the left of the page, so that the track chainage increases when read from left to right across the sheet. This approach may vary depending on the drawing location, discipline and type e.g., Light Rail plans within the Melbourne CBD (Refer to Section 16).

All cross sections should be orientated in the direction of increasing chainage (i.e. Down direction).

The spatial information is required for PASS Assets and enables the users of the information to locate drawings on the PASS Assets website.

The geographical data shall be entered in the Titleblock fields for Up Location, Down Location and Datum.

The geographical information shall be entered as detailed in Sections 4.3.1 to 4.3.4.

If the PASS Assets ID # is registered on the PASS Assets website, the Titleblock fields shall contain the PASS Assets ID #. If not, then the Titleblock fields shall contain coordinates in the Up Location: Easting and Northing, Down Location: Easting and Northing, and Datum.

Scaled drawings are represented as A3 proportioned rectangles that cover the same extent as the drawing in real space. Refer to Appendix B, Figure B.01: Scaled Drawing Example.

Schematic drawings are represented by irregular shapes that follow the associated track centrelines. Refer to Appendix B, Figure B.02: Schematic Drawing Example.

4.3.1 Easting and Northing Co-ordinates (Rail)

If Easting and Northing coordinates are entered, they shall be given in terms of the same reference Datum used for the drawings. The available choices that shall be used are MGA94 Zone 54, MGA94 Zone 55, MGA2020 Zone 54 and MGA2020 Zone 55. For Drawings where there is a Zone overlap, the Zone in which the majority of the Drawing is located shall be used.

New equipment that has not yet been registered onto PASS Assets will not have a PASS Assets ID number. In this instance Easting and Northing coordinates shall be used to populate the Titleblock. Refer to Appendix B, Figure B.05 Non-Typical Drawing Covering Single Area/Asset – Single Equipment Location (Not Registered on PASS).

This coordinate information should be extracted directly from PASS Assets.

Access to PASS Assets is via http://pa.apps.ptv.vic.gov.au/XBC or by contacting the PASS Assets Team via pass.assets@ptv.vic.gov.au. It is also possible to obtain location coordinates from a site survey using a GPS device.

4.3.2 Drawings Covering a Single Area/Asset (Rail)

For drawings that relate to an individual asset, the coordinates of that asset shall be used to populate the Up Location - Easting and Northing coordinates or Pass Assets ID fields and the Down cells are not populated. Examples of this may include a circuit diagram for a Signal Location Box. Refer to Appendix B, Figure B.04.

For drawings covering a single area, the coordinates representing the Up and Down extent of the drawing content shall be used to populate the Up Location - Easting and Northing coordinates and Down Location - Easting and Northing coordinates. An example of this is a carpark layout drawing.

For an example of a Drawing covering a single area or asset, refer to Appendix B, Figure B.03 “Drawing Covering Single Area/Asset; Typical Cross Sections”.

For examples of Drawings covering a single area or asset, refer to the following figures in Appendix B:

- Figure B.04 “Drawing Covering Single Area/Asset: Single Equipment Location” (Registered on PASS)
- Figure B.05 “Drawing Covering Single Area/Asset: Single Equipment Location” (Not Registered on PASS)
- Figure B.06 “Drawing Covering Single Area/Asset: Single Equipment Location” (Non Schematic)

4.3.3 Drawings Covering Multiple Areas / Assets (Rail)

For drawings covering multiple areas/assets including schematics, single line diagrams, longitudinal sections, details, index drawings and drawings including schedules, the coordinate information to be inserted into the Titleblock shall be representative of the asset range of that particular drawing.

In these instances, the location of the Up-most asset depicted on the drawing shall be used to populate the PASS Assets coordinate information in the Titleblock, i.e. the UP Easting and Northing or the UP PASS Assets ID of the Up-most asset.

Similarly, the Down-most assets in the range of assets depicted in a drawing should be used to populate the corresponding Down Location field in the Titleblock.

The placement of these coordinate points should typically be within the rail corridor. For assets located outside of the rail corridor the coordinates should reflect the extents of the view displayed. Refer to Appendix B.16.

For examples of Drawings covering multiple areas or assets, refer to the following figures in Appendix B:

- Figure B.07 “Drawing Covering Multiple Areas/Assets: Multiple Typical Cross Sections”
- Figure B.08 “Drawing Covering Multiple Areas/Assets: Multiple Line Layouts”
- Figure B.09 “Drawing Covering Multiple Areas/Assets: Linear Signal Layout”
- Figure B.10 “Drawing Covering Multiple Areas/Assets: Index Sheet”
- Figure B.11 “Drawing Covering Multiple Areas/Assets: Longitudinal Section”
- Figure B.13 “Drawing Covering Multiple Areas/Assets: Multiple Cross Sections”
- Figure B.14 “Drawing Covering Multiple Areas/Assets: Legends and General Notes”
- Figure B.15 “Drawing Covering Multiple Areas/Assets: General Arrangements.”
- Figure B.16 “Drawing Covering Cross Track Assets: General Arrangements.”

4.3.4 Standard Drawings

Reference Drawings (as defined within the DTP Standards Framework) visually communicate how something functions, is designed, is installed and/or is constructed. Reference Drawings are referenced throughout the planning, design and construction stages, but are not location or project specific.

There are three types of Reference Drawings:

- Standard Drawings - define or clarify technical requirements. They often provide the standard or only acceptable engineering solution.
- Typical Drawings - define a typical approach to the design, installation or construction. They often provide one solution of many and will require validation from the project specific designer.
- Component Drawings - define low level detailed information or specific product details either associated with Type Approvals or maintenance.

Reference drawings are not stored in PASS Assets and shall not have Co-ordinates, ID and Datum entered in the Titleblock fields. Refer to Appendix B Figure B.16 Standard Drawings for an example.

4.3.5 As-built Drawings

To ensure consistent as-built drawing types are submitted within all projects, each design discipline within this document outlines as-built drawing type requirements which are needed to be submitted to DMS on project completion

Please refer to each to discipline section within this document which outlines each drawing type that are needed to be submitted to DMS.

4.4 Reference Files

4.4.1 Rail Submissions

All drawing files shall be standalone drawings with no reference files attached. Reference files may be used but shall be merged or file fenced prior to submission to DMS.

4.4.2 Road Submissions

All design reference files including nested reference shall be submitted to DMS where included in the drawing files. There is no requirement to submit files that have been merged or file fenced. Reference file naming shall be axiomatic, i.e. self-evident, logical and reflective of the design information. The listing of reference files shall be included on the drawing index to facilitate future interrogation, Refer Section 17.3.2.

4.5 Colour Tables

The DTP Infrastructure Drafting Standards Colour Table that shall be used for all drawings is called, VT_Colour table (MicroStation) and VicTrack.ctb (AutoCAD), unless specified under discipline specific section in Level 2 of this Standard.

A PDF version of the colour table with associated RGB values can be found on DMS: VT_Colour table.pdf.

4.6 MicroStation Settings

4.6.1 General

All standard settings to be applied in MicroStation version drawings are contained in the relevant DTP seed files.

4.6.2 CAD Coordinates

For rail submissions, all Microstation ‘models’ that are ‘to scale’ shall use in-ground unit of either metres or millimetres. The Titleblock shall be inserted in Microstation ‘sheets’ at origin 0, 0.

For road submissions all MicroStation ‘models’ that are ‘to scale’ shall use in-ground unit of metres. The Titleblock may be inserted in MicroStation ‘sheets’ at origin 0,0 or the Titleblock may be inserted in the ‘model’ scaled up to ground size conditions.

4.6.3 Working Units

All MicroStation ‘models’ that are ‘to scale’ shall use in-ground unit of either metres or millimetres. The DTP Titleblocks shall be inserted in MicroStation ‘sheets’ at origin 0, 0.

4.7 AutoCAD Settings

4.7.1 General

All standard settings to be applied in AutoCAD drawings are contained in the relevant template files.

4.7.2 CAD Coordinates

All AutoCAD 'models' that are 'to scale' shall use in-ground unit of either metres or millimetres. The DTP Titleblocks shall be inserted in AutoCAD 'sheets' at origin 0, 0.

4.7.3 Working Units

All AutoCAD files shall use metric units only. The base unit shall be either millimetres or metres.

4.8 Drawing Size

All Drawings shall be drawn on an A3 size sheet, unless specified in Level 2.

In the case where a drawing sheet larger than A3 size is required, to improve legibility or clarity of information, a dispensation request shall be submitted to the Accredited Rail Transport Operator (ARTO) / DTP Engineering Division to seek exemption to the A3 rule.

4.9 Revit Settings

4.9.1 General

All standard settings to be applied in Revit drawings are contained in the relevant template files.

4.9.2 CAD Coordinates

All Revit models that are to scale shall use in-ground unit of either metres or millimetres. The DTP Titleblocks shall be inserted in Revit sheets at origin 0, 0.

4.9.3 Working Units

All Revit files shall use metric units only. The base unit shall be either millimetres or metres.

4.9.4 Revit - Exporting to AutoCAD format – Settings

An Export Parameter text file shall be used to create consistent AutoCAD outputs from Revit. Export parameter files can found on the DMS Website. under Documents and Drawings /Templates and Standards. This file is to be loaded in Revit.

To Export to DWG format, users shall select PTV Export Setup in Revit which ensures the following settings:

- Ensure that the Export Layer options are set to "Export Category properties BYLAYER and overrides BYENTITY."
- Ensure that the Default Export options (on the "General" Tab) are set to Export to file Format AutoCAD 2013.
- When reaching the step "Export CAD Formats – Save to Target Folder," ensure that drawing format is set to AutoCAD 2013.
- Export views on sheets and links as external references to be unticked.
- Drawing pdfs for submission shall be generated directly from Revit (Not a pdf of the post-processed CAD file).
- When selecting the Export Setup in Revit for generation of a dwg file, insert AutoCAD Version 2013.

Once exported to AutoCAD, users must replace exported title block elements with AutoCAD DTP Title block and import title sheet metadata. Some verification and amendments to CAD files may be required to match Revit PDF drawing outputs.

4.9.5 Revit file naming convention

Revit models should be named using the convention described in the DMS User Documentation which can be downloaded on the DMS website.

4.9.6 Submission of Revit drawings to DMS

Revit drawings shall be submitted in accordance with the requirements outlined in the DMS User Guide available for download from the DMS Website.

5 File Name And Drawing Number Format (Level 1) (Rail)

The Drawing File Name and Drawing Number shall be shown in the format defined in this section. New Drawing Numbers shall be obtained via a New Drawing Number Request on the DMS Website. The project number shall not be used for the CAD File Name.

All references to the design phase project numbering within a file shall be removed or replaced with DMS format numbering prior to submittal to DMS.

5.1 File Name Format

The CAD and PDF File Name shall contain the physical Location Code, Discipline Code, Sequence Number, Revision Letter, and File Extension as shown in Figure 3 Example file Name Format.

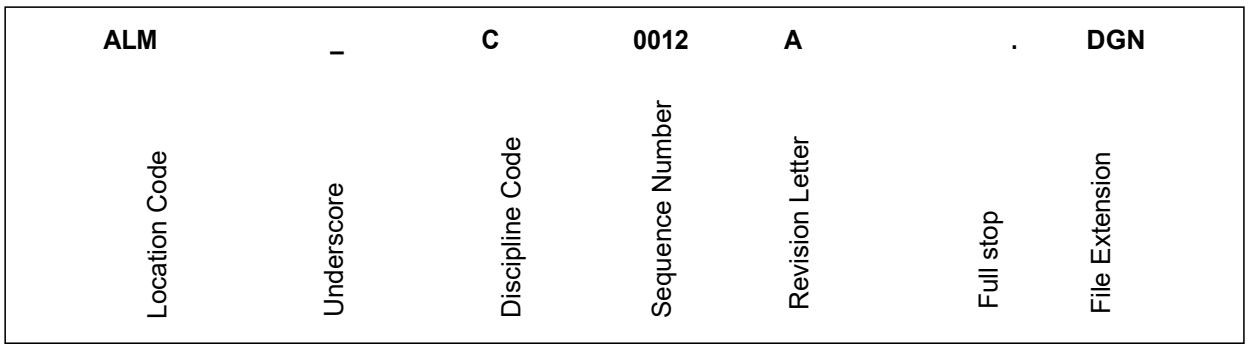


Figure 3 Example file Name Format

Note: The underscore delimiter '_' shall be inserted into the File Name in the position shown in Figure 3: Example File Name Format. The spaces shown in Figure 3 are only for illustration purposes and there shall be no spaces inserted in the File Name.

The File Name created shall use the tabled format and values specified in the Sections referenced in the table below.

Table 3 File Name Format

Value	Specification	Section Reference	Description
ALM	Location Code	Refer to Section 5.3and Appendix A	3 alpha characters that denote location (e.g. ALM for Alamein)
_	File Name format	Refer to Section 5.1	Underscore delimiter
C	Discipline Code	Refer to Section 5.4	single alpha character for the Railway Track , Civil and Civil Structural discipline
0012	Sequence Number	Refer to Section 5.5	a number range from 0001 to 9999
A	Revision Letter	Refer to Section 5.6	single alpha character
.DGN, .DWG, .PDF or .RVT	File Extension	Refer to Section 7.1	File extension (either MicroStation, AutoCAD PDF or Revit)

The PDF copy of the drawing shall have exactly the same name as the File Name and the File Extension shall be PDF.

Some examples of File Names are provided below:

Example 1: **ALM_C0012.DGN** (Note: In this example, the drawing is new and the File Name shall not have a Revision Letter).

Example 2: **ALM_C0012A.DGN** (Note: In this example, the drawing has been revised and the File Name shall have a Revision Letter).

Example 3: **ALM_C0012.RVT** (Note: In this example, the drawing is new Revit Model).

5.2 Drawing Number Format

The Drawing Number shall contain the Physical Location Code, Discipline Code, and the Sequence Number as shown in Figure 4 Example Drawing Number Format. The project number shall not be used for the CAD file name.

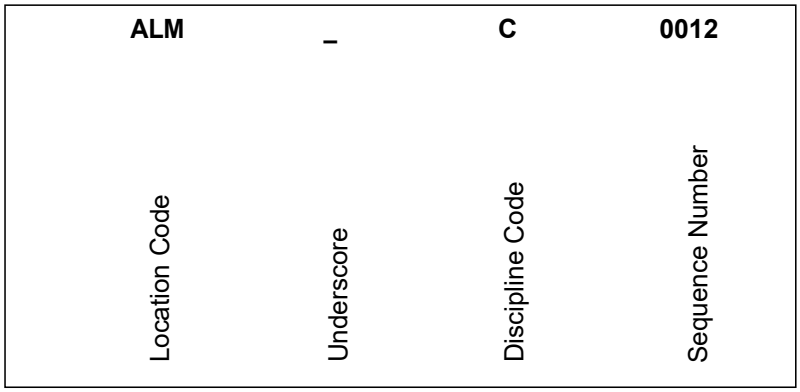


Figure 4 Example Drawing Number Format

Note: The underscore delimiter '_' shall be inserted into the Drawing Number in the position shown in the figure above.

The Drawing Number created shall use the tabled format and values specified in the Sections referenced in Table 4 Drawing Number Format.

Table 4 Drawing Number Format

Value	Specification	Section Reference	Description
ALM	Location Code	Refer to Section 5.3 and Appendix A	3 alpha characters that denote location (e.g. ALM for Alamein)
_	Underscore	Refer to Section 5.1	delimiter
C	Discipline Code	Refer to Section 5.4	single alpha character for the Railway Track and Civil, and Civil Structural discipline
0012	Sequence Number	Refer to Section 5.5	a number range from 0001 to 9999

An example of Drawing Numbers is provided below:

- Example 1: **ALM_C0012** (Note: In Example 1, if the drawing has been revised, the Drawing Number shall not contain a Revision Letter. The Revision Letter shall be entered in a separate field defined in the Titleblock. Refer to Appendix D, Figure D.01: Drawing Information)

5.3 Location Codes and Location Name

Location Codes shall be denoted by a three alpha characters.

The Location Codes and Guidance Notes can be downloaded from the DMS website, the details of which are provided in Section 2.2.1.

A list of Location Codes is provided in Appendix A. At the start of each new project the latest Location code can be obtained from the DMS website.

A diagram to illustrate the 'PTV Location Code Guideline' document (specifically points 2,3 and 4) is provided in Appendix P.

If new Location Codes are required, a request shall be submitted to DMS via email for the Location Code to be supplied by DTP, subject to approval of DMS.

If a drawing covers a large section of line with multiple stations, the location shall be the first Up station along that section of track. For example, a drawing from Bell Station to Reservoir Station would use the Location Code for Bell.

If a drawing covers multiple lines, the location should be either "Melbourne Metropolitan Network" or "Victorian Network".

5.3.1 Standard Drawing Location Code

Drawings that contain standard or typical details (e.g. typical installation, typical arrangement or content for multiple locations throughout the state) shall be denoted by the Location Code;

- 'SND' for Standard Drawings,
- 'TYP' for Typical Drawings, or
- 'CMP for Component Drawings.

Reference drawings are not permitted to use the Location Codes "MMN" or "VIC".

5.4 Discipline Codes

The Discipline Code shall be represented by a single alpha character that shall be inserted in the File Name (Refer to Section 5.1) and Drawing Number (Refer to Section 5.2).

The Discipline Names and Discipline Codes are specified in Table 5. All new, redrawn, or revised drawings shall display the Discipline Name exactly as it appears in Table 5 in the Titleblock. Refer to Section 5 for specification on the Titleblock.

Table 5 Discipline Names and Discipline Codes

Discipline	Discipline Code
Architectural	A
Building Services	B
Railway Track and Civil and Civil Structural	C
Train Electrical Network	E
Signals	G
Telecommunications	L
Structural	S
Tram Infrastructure	T
Road	R
Road Drainage	D
Intelligent Transport Systems	H
Geotechnical	J
Survey and Land	V
General*	X

*Note that the General 'X' discipline shall not appear on the Titleblock and is not a discipline within DMS. This is reserved for general drawing content layers / levels such as text and Titleblock.

5.5 Sequence Number

The Sequence Number range shall be from 0001 to 9999. There shall be a maximum of 9999 drawing files for each Location (Location Code) and Discipline combination.

The Sequence Number shall be contained in both the File Name (Refer to Section 5.1) and Drawing Number (Refer to Section 5.2).

A drawing that contains multiple sheets in a CAD file shall use the same File Name and Drawing Number for each of the drawing sheets. Each drawing sheet Titleblock shall have the same File Name entered in the Titleblock and a unique Sheet Number.

5.6 Revision Letter and Revision Block

5.6.1 Scope

Strict control of revision letters for As-built drawings is required and the following rules shall be complied with. The following rules shall apply only to As-built drawings.

The rules shall not apply to drawings undergoing revisions made by the Contactor during progressive stage works. In these cases the Contractors shall be responsible for maintaining their own document control system in accordance with their company quality standards.

5.6.2 Application

In the case where a drawing is revised, a single alpha character shall be used to denote a Revision Letter. The Revision Letter shall be placed in the position within the drawing File Name as shown in Section 5.1, Example 2.

A newly created drawing or a drawing that has been redrawn to the DTP standard for the first time shall not have a Revision Letter, number or characters displayed. Refer to Section 5.1, Example 1.

The Revision Letter (if applicable) shall only be appended to the File Name and shall not be shown in the Drawing Number.

The Revision Letter shall be entered in a separate field in the Titleblock. Refer to Appendix D, Figure

D.01 “Drawing Information.”

The Revision Letter for the first subsequent revision of a drawing shall be the letter A. The next revision shall be the letter, B etc.

Once a revision reaches Z, and Z is superseded, the next revision entry into the Titleblock shall be AA, then AB, AC AD, etc. The Revision Field that is located on the left side of the Revision Block within the Drawing Titleblock shall be left blank in the case where the drawing has been redrawn to be compliant with the DTP Standard for the first time.

Figure 5 Example Titleblock for Redrawn or Revised Tags for Whole Drawing provides an example of the information that shall be entered in the Redrawn and Revised tags located below the Revision Block on the Drawing.

Titleblock

REV	DESCRIPTION	DESIGNED	CHECKED	IND REV	APP'D	DATE
FILENAME						

REDRAWN AND REVISED. SUPERSEDES DRAWING NO XXXXX REV YYYY DATED DD/MM/YY

Figure 5 Example Titleblock for Redrawn or Revised Tags for Whole Drawing

Where the drawing has been redrawn to be compliant with DTP Standard for the first time and replaces only a portion or section of another drawing, Figure 6 provides an example of the information that shall be entered on the Redrawn and Revised field located in the revision block on the drawing.

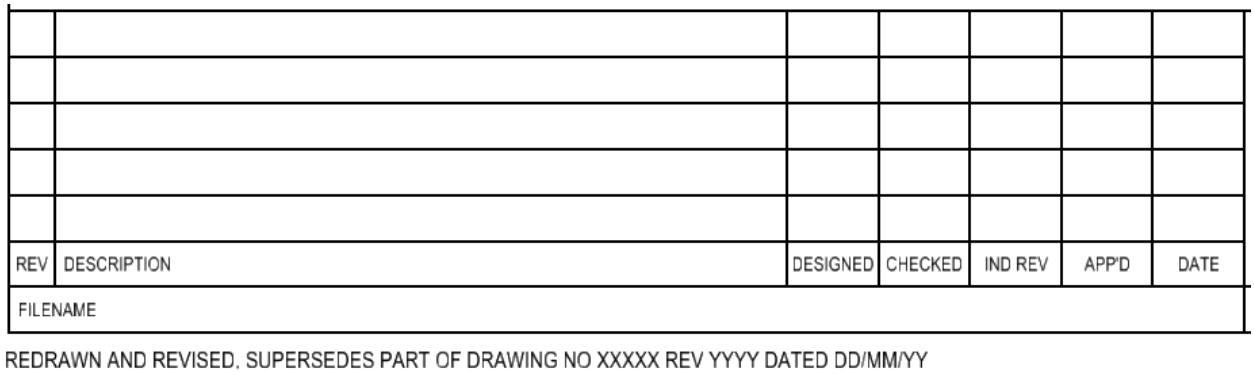


Figure 6 Example Titleblock for Redrawn or Revised Tags for Part of Drawing

The DMS requires that it receives a copy of each subsequent revision that is added to a drawing after the drawing has been booked out of the DMS with all of its dates, signatures and certifications completed.

When a piece of equipment is constructed as per the "IFC" copy the revision should only go up by one letter and should state the changes to the asset(s) or in the drawings and not the projects name. E.g. "REVISED A/C POINTS DYN175 RELOCATED." and not a generic statement such as "REVISED A/C LEVEL CROSSING REMOVAL."

5.7 Defined Views

Drawings shall be A3 size (referred to as a 'Single Sheet' drawing). The DTP Titleblock contains the defined Views detailed in Table 6.

Table 6 Default/Model Views

Cad Drawing	Specification	Sheet Number	Reference
Default/Model View	All drawing content should be placed within the Default/Model View.	Default/Model View shall not have a Sheet Number i.e. X of X and shall not have a Titleblock (Model restricted to one default view and a maximum of 3 Model Views.)	Refer to MicroStation/AutoCAD/ Revit Help and User Manual Documentation
Key Plan View	The Key Plan View shall show the entire drawing and the sheet borders representing each Sheet View.	Key Plan View shall be the first Sheet, i.e. 01 of X. If there is more than one Key Plan View, the next sequential Sheet Number shall be used.	Refer to MicroStation/AutoCAD/ Revit Help and User Manual Documentation
Sheet View	The Sheet View shall show one of the views outlined on the Default View of the drawing and shall show the DTP Titleblock.	Sheet View shall be the second Sheet, i.e. 02 of X. Unless there is more than one Key Plan View, in which case, the next sequential Sheet Number shall be used.	Refer to MicroStation/AutoCAD/ Revit Help and User Manual Documentation
Long Plot View	Long Plot View shall show the Default/Model View to enable the entire drawing to be printed as one continuous drawing without sheet borders.	Long Plot View shall be the third Sheet, i.e. 03 of X. Unless there is more than one Sheet View, in which case, the next sequential Sheet Number shall be used.	Refer to MicroStation/AutoCAD Help and User Manual Documentation

5.7.1 Single Sheet Drawing

Where a drawing is legible on a single A3 size sheet, a single sheet drawing shall be used.

A Single Sheet drawing shall contain a Default/Model View and Sheet View 1 and shall be numbered 01 of 01.

A Single Sheet drawing contains:

Default/Model View (Note: This view shall not show the Titleblock or Sheet Number. CAD models to be restricted to one default view and a maximum of 3 Model Views); and:

- Sheet View 1 Sheet 01 of 01.
- Key plan

For the avoidance of doubt, where a key plan shows a set of sheets defining a linear or large area single location assets, the associated plans shall have unique drawing numbers and shall not be an additional sheet to the key plan drawing number.

Refer to Appendix I for sample key plans.

5.7.2 Multiple Sheet Drawing

A Multiple Sheet drawing shall contain a Default/Model View, Key Plan View and Sheet View and may also contain a Long Plot View. The sheets should be numbered as follows; 01 of 05, 02 of 05, 03 of 05 and continue in sequential order, assuming that there are five drawings in total.

The Key Plan View 1 shall be the first sheet, e.g. 01 of 05.

Note: Non-physical objects such as Text, Dimensions, etc., and the Levels/Layers used for these non- physical objects shall be turned off on Key Plan Sheets. The Key Plans should show the physical objects and the sheet series.

Tags/Attributes shall exactly match the data entered on Sheet View 01 of 05 with the exception that the Sheet Number field should be set out as follows:

A Multiple Sheet drawing contains:

Default/Model View (Note: This view shall not show the Titleblock or Sheet Number. CAD models to be restricted to one default view and a maximum of 3 Model Views.

- Sheet 01 of 05 Sheet 01 Key Plan
- Sheet 02 of 05 Sheet 02
- Sheet 03 of 05 Sheet 03
- Sheet 04 of 05 Sheet 04
- Sheet 05 of 05 Sheet 05 Long Plot 3M

A Multiple Sheet drawing with more than one Key Plan contains:

Default/Model View (Note: This view shall not show the Titleblock or Sheet Number. CAD models to be restricted to one default view and a maximum of 3 Model Views.

- Sheet 01 of 06 Sheet 01 Key Plan
- Sheet 02 of 06 Sheet 02 Key Plan
- Sheet 03 of 06 Sheet 03
- Sheet 04 of 06 Sheet 04
- Sheet 05 of 06 Sheet 05
- Sheet 06 of 06 Sheet 06 Long Plot 3M

The maximum length of a linear drawing is 3m and shall include no more than 10 Sheets, comprising 8 model views, 1 Key Plan sheet and 1 Long plot sheet.

For multiple drawing sheets, dimensions should not be repeated for the same object on multiple sheets.

6 File Name And Drawing Number (Level 1) (Road)

The Road asset As Built drawing register maintains a numerical drawing numbering system that is administered by DMS. Numbers start from 2,000,000 and are applied in sequence to drawings.

The CAD and PDF File Name shall contain the numerical sequence and the file Name Format.

Some examples of File Names are provided below:

Example drawing number: **2000000**

Example file name: **2000000.dgn**

Example PDF name: **2000000.pdf**

Where a delivery agency / project numbering system has been adopted prior to As Built then there is no requirement to rename the CAD and PDF files before submission to DMS. Cross references within the drawing are not required to be changed to the DMS number.

The DMS number shall be added to the 'Drawing Number' Titleblock field and the delivery agency / project number shall remain in the 'CAD File Name' Titleblock field.

Where this process is adopted then the drawing index sheet must list both the DMS drawing number and the delivery agency / project Number.

6.1 Standard Drawing Numbers

Road standard drawings are named in the format SD-1234.

Road guideline drawings are named in the format GD-1234.

ITS standard drawings are named in the format TC-1234.

Where new standard drawings are required, numbers shall be provided by the relevant DTP Engineering Division.

6.2 Revision Letter and Revision Block

The revision number and revision block should be used for drawings undergoing revisions made by the Contactor during progressive stage works. In these cases, the Contractor shall be responsible for maintaining their own document control system in accordance with their company quality standards.

These revisions shall be removed from the Titleblock upon final submission of the As Built drawings. They shall not have a Revision Letter, number or characters displayed.

For Traffic Signal Plan revisions control refer to Section 19.3.1.

6.2.1 As Built Stamp

All Road submission drawings are to have a stamp on the drawing clearly stating, 'AS BUILT'.

6.3 Defined Views

Road submissions may either adopt a Single Sheet or Single Model approach. The drawing Titleblock and contents may be comprised of reference files.

6.3.1 Single Sheet Drawing

A Single Sheet drawing shall contain a Default/Model View and Sheet 01 of 01. The Default/Model view shall contain the drawing contents and the Sheet view shall contain the Titleblock. Additional models up to a maximum of 3 may be added to aid drawing production.

6.3.2 Single Model Drawing

A Single Model drawing shall contain a Default/Model View only. This view shall contain both the drawing contents and the Titleblock. The Titleblock will be 'scaled up' to ground size conditions.

7 Titleblock (Level 1)

The DTP Titleblock shall be used on all drawings. This section details the Titleblock data fields that shall be completed by the drafter/designer. Refer to Appendix C Figure C.01: Titleblock Example.

7.1 Drawing Metadata

Metadata is drawing information that is extracted from the defined Tags/Attributes in the drawing Titleblock and displayed in DMS.

Tags/Attributes within the Titleblock shall not be moved, deleted, or renamed. Tags/Attributes in the Titleblock are not visible in Sheet View.

To view or edit Tags/Attributes in a MicroStation or AutoCAD drawing, select the 'Edit Tag' tool. To view/edit the Revision Information, click on the lower left corner of the inner border of the Title block. To view/edit the Drawing Information, click on the lower right corner of the inner border of the Titleblock.

The Titleblock tags shall be completed as specified in the following Sections 7.2 to 7.6.

7.2 Drawing Information

Drawing Information is the data that is entered into defined fields within the Titleblock. All Drawing Information described in Section 7.2 below shall be metadata.

Examples of Drawing Information can be found in the following Appendices:

- Appendix C, Figure C.01 Titleblock Example;
- Appendix D, Figure D.01: Drawing Information; and
- Appendix D, Figure D.02: Pass Coordinates.

7.2.1 Drawing Discipline (Type)

The Drawing Discipline is the name of discipline that identifies the type of works contained within the drawing. The Drawing Discipline is metadata.

The drawing discipline shall be in accordance with one of the disciplines listed in Section 5.4.

7.2.2 Location Name / Road Name

For rail submissions the Location Name is the physical location of the works covered by a drawing or set of drawings. Refer to Section 5.3 for Location Names.

For road submission the Road Name is the name of the road that identifies the location of the drawing. Typically the local road name shall be adopted.

The Location Name / Road Name is metadata.

7.2.3 Project Name

The Project Name is the given name of the project as agreed with DTP.

7.2.4 Drawing Title

The Drawing Title allows for 3 lines of text (Title 1, Title 2 and Title 3) which more specifically describe the location information, type of drawing and drawing description. The Drawing Title is metadata. For rail submissions, as a minimum, Title 1 shall be entered into the Titleblock.

Title 1 should contain further drawing location information, such as street name, station name, facility description or actual location of equipment. For road submissions, the inclusion of additional location information or municipality is by agreement with DTP.

Title 2 should contain the drawing type, as specified in the drawing type section under each discipline in Level 2 of these Standards.

Title 3 should contain a detailed description of the drawing. The description may take the form of a chainage, sheet number or specific description.

For Signals drawings only, Title 1 should contain drawing type, and Title 2 should contain further drawing location information.

All text shall be in capital letters.

Standard Drawings, Typical Drawings and Component Drawings shall be entered as the Drawing Location as per the example below.

Examples of drawing titles are shown in Figure 7.

Figure 7 Example Drawing Titles

7.2.5 PASS Co-ordinates / ID Number (No.) (Rail)

For rail submission the PASS Co-ordinates or ID number are defined in Section 4.3. PASS co-ordinates / ID number are metadata. For an example of how PASS Coordinates are inserted into a document refer to Appendix D – Figure D.02 – Pass Coordinates.

For road submissions PASS Co-ordinates or ID Number are not required and shall be left blank.

7.2.6 Datum

The GIS Reference shall be entered in the Titleblock under Datum (e.g. MGA94 Z55, MGA2020 Z55) and shall be in accordance with the options outlined in Section 4.3. For road submissions, where the feature survey is not provided on a recognised datum, the term LOCAL shall be included. Datum is metadata.

7.2.7 Sheet Number (No.)

For rail submissions the Sheet Number shall be entered on each Titleblock and shall be in accordance with the rules outlined in Section 5.7.1. The Sheet Number is metadata.

For road submissions the Sheet Number shall be a sequential number in order from first sheet to last.

7.2.8 CAD File Name

The drawing CAD File Name, as detailed in Sections 5.1 for rail and 6 for road shall be entered on each Titleblock of every sheet in the drawing. The CAD File Name is metadata.

7.2.9 Drawing Scale

The Drawing Scale is the specified drawing unit. Scale standards are detailed in Section 8.1. The Drawing Scale is metadata.

7.2.10 Drawing Scale Bar

The Drawing Scale Bar allows for a vertical and horizontal scale to be added to the drawing. When used the horizontal scale should contain the values of the horizontal scale entered in Section 7.2.9. A vertical scale is only required when there is a vertical exaggeration e.g. Longitudinal sections. The Drawing Scale Bar values are **not** metadata.

Refer to Table below for tag / attribute values in Titleblock.

Table 7 Scale Bar Values

Scale	Value 1	Value 2	Value 3
1:1	0	0.01	0.02
1:10	0	0.1	0.2
1:100	0	1	2
1:1000	0	10	20
1:10000	0	100	200
1:20	0	0.2	0.4
1:200	0	2	4
1:2000	0	20	40
1:20000	0	200	400
1:25	0	0.25	0.5
1:250	0	2.5	5
1:2500	0	25	50
1:25000	0	250	500
1:400	0	4	8
1:50	0	0.5	1
1:500	0	5	10
1:5000	0	50	100
1:50000	0	500	1000
1:150	0	1.5	3

7.2.11 Sheet Size

The drawing sheet size shall be A3, unless excepted in specifications listed in Level 2, and should be entered on all sheets. The drawing sheet size is metadata.

7.2.12 Drawing Number

The Drawing Number shall be entered on each Titleblock of every sheet in the drawing. The Drawing Number is metadata. Refer to Section 5.2 for rail and Section 6 for road Drawing Number format details.

7.2.13 Drawing Revision Letter

The Drawing Revision Letter should be the current revision for the drawing or set of sheets and shall be entered on each Titleblock of every sheet in the drawing. Refer to Section 5.6 for rail and Section 6.2 for road drawing revision letter conventions. The Drawing Revision Letter is metadata.

7.2.14 Sensitivity Label

The Sensitivity Label is a placeholder Titleblock item. DTP shall release guidance to follow. No further update in this revision.

7.2.15 Contract Number (No.)

For rail submissions the contract number is not required and shall be left blank.

For road submission the contract number should be the internal DTP or MTIA delivery agency contract number. If this is required, the delivery agency shall provide the contract number. The contract number is metadata.

For externally funded road works that don't utilise a DTP or MTIA provided contract number, this field shall be left blank.

7.2.16 Road Number (No.) / Site Number (No.)

For rail submissions the road number / site number is not required and shall be left blank.

For road submissions the road number shall be entered in the Titleblock. Where the road does not have a DTP road number, 'LOCAL ROAD' shall be shown. Site number shall be entered for Intelligent Transport System Plans, e.g. Traffic Signals. Numbers to be requested from DTP. The road number / site number is metadata.

7.2.17 Structure Number (No.)

For rail submissions the structure number is not required and shall be left blank.

For road submissions covering structural assets, the structure number shall be entered in the Titleblock. Numbers to be requested from DTP. The structure number is metadata. Structure Types shall adopt the prefix nominated in Table 8 below.

Table 8 Structure Number

Structure type	Prefix
Bridges and major culverts (or underpasses)	SN
Noise attenuation walls	SZ
Visual screen walls	SV
Retaining walls	SR
Major sign structures	SS
High-mast lighting structures	SL
Architectural and historic features	SA
Concrete pavements on piles	SP
Emergency boom gates	SB
Emergency bridging systems	SE
Emergency median barrier access gates	SG
Weigh-bridges	SW

7.2.18 Suitability Code

The Suitability Code field shall be used when prescribed by MTIA / DTP. If not prescribed by MTIA / DTP this field shall be left blank.

7.3 Drawing Creation Information

Where a person's name is required as metadata there is an allowance for a maximum of 18 characters for the initial of the first name and full last name (e.g. J CITIZEN). Hyphenated last names may be used but should not exceed the maximum 18 character allowance (e.g. J FIRST-SECOND).

If the name exceeds the character limit then it shall be shortened in a way that does not prohibit logical identification (e.g. J F-SECOND).

Dual names are permitted on the title blocks to indicate "Mentor/Mentee" during the construction phases of a project but shall be reduced to show the name of the "Mentor" only at the "As in service" stage.

There shall be no full stops in names.

7.3.1 Designed By

The initial of the first name and full last name (e.g. J CITIZEN) of the designer for the original drawing works and content shall be entered in the Titleblock under 'Designed By'. The data is metadata and there is an allowance for a maximum of 18 characters.

7.3.2 Checked By

The initials of the first name and full last name (e.g. J CITIZEN) of the design checker for the original drawing content shall be entered in the Titleblock under 'Checked by'. The data is metadata.

7.3.3 Independent Review By (Rail)

For rail submission the initials of the first name and full last name (e.g. J CITIZEN) of the independent reviewer for the original drawing content design shall be entered in the Titleblock when applicable. Where an independent reviewer was not engaged, this portion of the Title Blank shall be blank. The data is metadata and there is an allowance for a maximum of 18 characters.

For road submission the independent reviewer is not required and shall be left blank.

7.3.4 Approved By

The initials of the first name and full last name (e.g. J CITIZEN) of the Approver of the original drawing/s shall be entered in the Titleblock. The Approver is the person who, within the production organisation, takes responsibility that the drawings have been appropriately reviewed and who takes responsibility for the content accuracy of the drawings. The data is metadata and there is an allowance for a maximum of 18 characters.

7.3.5 Approved Date

The Approved Date is the date that the Approver approved the original drawing/s. All dates shall be in the format DD/MM/YY. The Approved Date is metadata.

7.3.6 Professional Engineer in Victoria (RPEV) Name & Number (No.)

Where the content of the drawing encompasses a Professional Engineering Service as defined by the Professional Engineers Registration Act (2019), the initial of the first name and full last name (e.g. J CITIZEN) of the supervising Registered Professional Engineer (RPEV) for the original drawing works shall be entered in the Titleblock under 'RPEV Name & No.' along with their registered RPEV (PE) number. The name entered shall match that used in either the Approved By or Checked By title block fields. The data is **not** metadata.

7.3.7 Drawing Certifier (Rail)

Information relating to the drawing certifier shall be placed within the PDF and is not required in the CAD Titleblock.

The location for the drawing certifier's signature is as detailed in Section 3.3. The data is **not** metadata.

7.4 Organisation Information

7.4.1 Victoria State Government Logo

The Victoria State Government logo is part of the Titleblock and shall be placed in the location shown within Appendix D, Figure D.01 Drawing Information. All drawings shall be submitted with the logo in its specified location. The logo is **not** metadata.

7.4.2 Franchisee's / Lessee's Logo

For rail submissions the logo of the Franchisee / Lessee who created the original drawings shall be placed within the designated location and shall remain there for the life of the drawings. In the case that a drawing contains more than one ARTOs' assets, each ARTO's logo needs to appear in the designated location. Additional details, such as contact details, may be provided in the Consultant logo location on the Titleblock.

For road submissions the Franchisee / Lessee logo area of the Titleblock shall contain the logo of the agency responsible for delivering the works.

The details shall not exceed the size of the space allocated. Logos shall be a vector drawing (not a scanned image) and shall be shown in colour. Reference drawings shall not show a Franchisee/Lessee logo. The logo is not metadata.

7.4.3 Consultant Logo

The logo of the consultant that produced the original drawings shall be placed with in the designated location and shall remain there for the life of the drawing. In circumstances where there are multiple consultancies working on a drawing, a maximum of 3 primary consultancy shall be listed in the consultant logo location on the Titleblock. Alliance logos are not to be shown.

Additional details, such as contact details, may be provided in the consultant logo location on the Titleblock. The details shall not exceed the size of the space allocated. The logo shall be a vector drawing (not a scanned image). The Reference drawing shall not show a Consultants logo. The logo is **not** metadata.

For road submissions the Consultant logo shall be updated such that it reflects the most recent consultant to modify the drawing, e.g. for traffic signal plans. Consultant logos from previous versions of the drawing shall be removed.

In the case where more than 3 logos are required on a drawing, a dispensation request shall be submitted to DMS@transport.vic.gov.au with reasonable justification.

7.5 Revision Information

The Revision Information is detailed in Section 5.6 and shall be entered in the Redrawn and Revised tags located below the Revision Block on the Drawing. Refer to Figure 5 and Figure 6.

7.5.1 Revision (Rev)

For rail submissions the current revision letter for the drawing or set of sheets as detailed in Section 5.6 shall be entered in the Titleblock under Revision (Rev). The Revision is metadata.

For road submissions the current revision number for the drawing or set of sheets as detailed in Section 6.2 shall be entered in the Titleblock under Revision (Rev). The Revision is metadata.

7.5.2 Approval Date (Date)

The approval date (Date) is the date that the current drawing/s revision was approved. All dates shall be in the format DD/MM/YY. The date is metadata.

7.5.3 Description

For rail submissions the description details the current modifications made to the drawing/s as part of the modification works. The description shall provide a high-level context of what has altered. The description is **not** metadata.

For road submissions the description will be the final submission of the drawing and shall read 'AS BUILT'. The description is **not** metadata.

7.5.4 Designed

The initials of the first name and last name (e.g. JC) of the designer that made the design changes to the drawing/s shall be entered in the Titleblock under ‘Designed’.

7.5.5 Checked

The initials of the first name and last name (e.g. JC) of the design reviewer who checked the current content revision shall be entered in the Titleblock under ‘Checked’.

7.5.6 Independent Reviewer (Rail)

For rail submissions the initials of the first name and last name (e.g. JC) of the Independent Reviewer (Ind Rev) that reviewed the current drawing/s revision shall be entered in the Titleblock under ‘Ind Rev’ when applicable.

For road submission this is not required and shall be left blank.

7.5.7 Approver

The initials of the first name and full last name (e.g. J CITIZEN) of the Approver who takes responsibility that the current drawing/revision content is accurate shall be entered in the Titleblock. under ‘App’d’

7.6 DTP Disclaimer

The Titleblock provides reference to the Drawing Management System Standard Processes (DOT-NTS-012-DMS) which contains the disclaimer relating to use of the DMS and information provided with the drawings. This can be accessed via DMS.

8 Drawing Content (Level 1)

8.1 Drawing Scale, Extent and Section Markers

8.1.1 Drawing Scale

Drawings that are 'to Scale' shall clearly denote the scale. Drawing Scales should be 1:1, 1:2, 1:5 and 1:10, 1:100, 1:1000, or multiples of these. For cases where the listed Drawing Scales are not applied, 'N.T.S.' shall be entered in the Titleblock.

In the case where drawings contain multiple details drawn to various scales, each detail shall have the Scale denoted under the title of the detail. Any one of the scales shall be entered in the Titleblock due to the limited space in the Scale field.

8.1.2 Drawing extent

Where the design drafting extends past the limits of a single drawing sheet, a note shall be placed on the relevant edge of the drawing sheet (match line) to refer to the adjoining sheet:

> Rail – Refer to TOT_G0001

> Road – Refer to 2100100 or

> Road – Refer to Sheet 1 or

> Road – Refer to [project drawing number]

8.1.3 Section Markers

Where a drawing contains a section marker which cross-references another drawing, the section marker shall contain either:

> Rail - the discipline code and sequence number e.g., C0012 if the drawing is within the same location

> Rail - the full drawing number e.g., ALM_C0012 if the drawing referenced is in a different location or is a Reference Drawing.

> Road - the full drawing number e.g. 2100100 or

> Road - the sequence number from the project drawing number e.g. 1234

Refer to Appendix J for examples of Section Markers.

8.2 Text Sizes and Fonts

8.2.1 Text Size

The standard text sizes used in a drawing CAD file shall be 1.8mm, 2.5mm, 3.5mm, 5.0mm, and 7.0mm on the final printed sheet. The minimum text size when a drawing is printed at A3 shall be 1.8mm.

These text sizes may have to be scaled up dependant on the scale factor of the final A3 sheet. Refer to Section 8.2.2 for more details.

8.2.2 Fonts

DTP seed/template files contain 5 text styles that shall be scaled up to suit the plotted sheet scale. The text styles are VicTrack 1.8 Arial, VicTrack 2.5 Arial, VicTrack 3.5 Arial, VicTrack 5.0 Arial, and VicTrack7.0 Arial. These text styles have a True Type Font of Arial Narrow and shall be used on all Victorian rail / road Industry drawings.

Legacy VicTrack text styles which contain Arial with a width factor applied will still be accepted by DMS when revising existing drawings.

Additional text styles may be created if required for drawing clarity. For example, black text on a dark background shall be modified such that the text style has a white box behind it. The additional text styles shall be visually indistinguishable in the printed form from the VicTrack text styles and shall be based on the standard DTP seed/template files text styles.

The font type, text size and colour shall not be changed and shall be in accordance with the approved text styles. Italics text shall not be used.

DTP Revit templates contain VicTrack 1.8 Arial, VicTrack 2.5 Arial, VicTrack 3.5 Arial, VicTrack 5.0 Arial, and VicTrack7.0 Arial text styles.

8.2.3 Text Orientation

Text shall be placed and justified to ensure that the drawing content is not obscured by text and that the text is clear and legible. Please refer to Appendix F, Figure F.01 “Examples of Suitable Text Justification and Placement”.

For Disciplines using MicroStation, text shall be alpha characters and shall not be dropped elements.

8.3 Level/Layer Names

Standard level/layer names are supplied by DTP, unless specified and are created by the Company creating, redrawing or modifying the drawing. The standard Level/Layer Name Field Structure shall be applied to all CAD files.

The Level 2 discipline standards contain the requirements for the discipline specific level/layer names and symbology.

8.3.1 Discipline Code

The Discipline Codes in Section 5.4 shall be used in the Level Name Field Structure.

8.4 Line Styles

The standard MicroStation or AutoCAD line styles shall be used, along with any supplied DTP line styles as needed.

8.5 Blocks/Cells

All first and second level block/cell libraries shall be downloaded from the DMS Website located under Documents and Drawings/Templates & Standards.

For MicroStation, the general cell library (VT_General.cel) shall be used for cells that cover multiple disciplines. VT_General cell library contains north points, etc.

For AutoCAD, the general block folder shall be used for blocks that cover multiple disciplines. The general block contains the authorisation stamp for trains and trams.

If additional blocks/cells are required, a request shall be submitted to DMS via email for the blocks/cells to be supplied by DTP, subject to approval by DTP/DMS. If a project requires new cells which shall be used more than once during the course of the project, the new cell shall be created and submitted to DMS for approval.

If a Cell or Block requires minor alterations, the Cell may be dropped elements or exploded respectively. Once the Cell/Block is amended, the Cell/Block shall be regrouped as one entity prior to submission.

8.6 Drawing Dimensions

Dimensions shall be in metres or millimetres.

The VicTrack dimension style shall be used on all new revised or redrawn Victorian rail and road industry drawings. This dimension style shall reside in the seed or template files which can be downloaded from the DMS Website, the details of which are provided in Section 2.2.1. The DTP Infrastructure Drafting Standard shall be read in conjunction with the VicTrack templates.

The dimensions shall be placed on either the bottom or the right-hand side of the sheet. Additional dimension styles may be created if required for drawing clarity. For example, black text on a dark background shall be modified such that the dimension style has a white box behind it. The additional dimension styles shall be visually indistinguishable in the printed form from the VicTrack dimension styles and shall therefore be based on the standard VicTrack dimension styles. The font type, arrow head fill and colour shall not be changed and shall be in accordance with the approved dimension styles.

Objects or groups of objects shall be fully dimensioned on a single sheet. If objects cannot be fully dimensioned on a single sheet, the sheet should be scaled up in order to fully dimension the object on a single sheet.

PTV Revit templates contain VicTrack dimension styles. Refer to Appendix E, Figure E.01 Drawing Dimensions.

8.7 Plotting

The Pen Table (VT_PenTable_date.rsc) shall be used when plotting drawings in MicroStation to populate the time, date and file directory on the bottom left hand corner of the Titleblock.

For printing in AutoCAD, VicTrack.ctb shall be used to print to the correct plot styles.

8.8 Model Space And Paper Space (Rail)

The design shall be drawn in Model Space (in AutoCAD) and the Default Design Model (in MicroStation). The Titleblock, General Notes and North Point shall be entered in Paper Space (in AutoCAD) and the Sheet Models (in MicroStation).

If exceptions are required to the model and paper space condition, a request shall be submitted to DMS via email for the exception to be supplied by DTP, subject to approval from DTP.

8.9 Index Sheets (Rail)

An Index Sheet drawing shall list Drawing Numbers and Titles for each drawing within a single Location and Discipline. Multiple disciplines shall not be listed on the same Index Sheet.

Refer to Section 5.3 for Locations Codes guidance.

An Index Sheet drawing may contain more than one Index Sheet page in the CAD File. In the example where there is more than one Index Sheet page, one Drawing Number shall be used and the Drawing Number shall be the same for each Sheet View. Refer to 5.7.2 for specification on Multiple Sheet Views.

Different Drawing Numbers shall not be used for the same location in a CAD file that contains more than one Index Sheet.

8.10 As Built Terminology (Rail)

When preparing drawings for As-Built stage, drawing annotation and notes shall be modified to reflect the final state of the assets that exist in the field.

1. Time related terms such as “EXISTING”, “PROPOSED”, “TEMPORARY” or “FUTURE” are to be removed.
2. Instructional future-tense terms shall be replaced with factual statements, e.g. “SHALL BE” becomes “WAS”, “TO BE” becomes “WERE”.
3. Remove references to temporary assets (unless asset remains in place).
4. Remove wording and assets marked ‘ASSET TO BE REMOVED’, or ‘ASSET TO BE RELOCATED’.
5. Remove any site notes like ‘DEPTH TO BE DETERMINED ON SITE’.
6. Remove statements that offer alternatives such as “OR APPROVED EQUIVALENT”.
7. Remove any reference to Project documentation, e.g. ‘FOR SOIL CONDITIONS, REFER TO GEOTECHNICAL REPORT LAH-BBN-DIRT-0001’.
8. Remove any reference to Project personnel, e.g. ‘NO SOIL NAIL SHOULD BE DRILLED WITHOUT AUTHORISATION OF PROJECT ENGINEER’.

Note 1 – Section 8.10 is not applicable to Standard Drawings (SND), Typical Drawings (TYP) and Component Drawings (CMP).

Note 2 - Section 8.10 is not applicable to road submissions.

9 Signals Discipline Standards (Level 2)

9.1 Introduction

This Section specifies the discipline specific requirements that shall apply for Signals design drawings. Signals drawings shall comply with the Level 1 drawing requirements outlined in Sections 4 to 8.

Specific requirement for the Signals discipline are set out in the sections below.

9.1.1 Signals Drawing Types

The table below outlines Typical Drawing Types which may be produced throughout project delivery which will be inserted in 'Title 2' of the drawing title block for this discipline. The table also outlines Drawing Type which shall be updated to 'As-Built' status and submitted to DMS.

Table 9 Signals Drawing Types

Design Package	Drawing Type	As-Built Required	Comments
Signals	Cover Sheet	Y	
Signals	General Notes and Legend	Y	Not Required if the drawing information can be combined on the Cover Sheet drawing where space permits
Signals	Air Reticulation Plans	Y	
Signals	Aspect Sequence Chart	Y	
Signals	Axle Counter Overview	Y	
Signals	Cable Running Plans (CRP)	Y	
Signals	Cable Route	Y	
Signals	CBI Architecture Plans	Y	
Signals	Circuits	Y	
Signals	Communications Plans	Y	
Signals	Communications System Architecture	Y	
Signals	Control Tables & Releasing Tables	Y	
Signals	Earthing Arrangements	Y	
Signals	Earthing Details	Y	
Signals	Equipment and Generator Room Layouts	Y	
Signals	Focussing Diagrams	Y	
Signals	Geographic Modules	Y	
Signals	Level Crossing Predictor	Y	
Signals	Impedance & Crossbonding Plans	Y	Shall be provided in electrified areas not covered by a Track Circuits, Bonding and Signalling Apparatus Plan Only
Signals	Index Sheets (Station/Geographical)	Y	
Signals	Indication Panels	Y	
Signals	Layout of Apparatus, Terminations and Contact Analysis	Y	
Signals	Mechanical Drawings	Y	
Signals	Networking Architecture	Y	

Design Package	Drawing Type	As-Built Required	Comments
Signals	Power Distribution 110v Switchboard	Y	
Signals	Pull Diagrams	Y	
Signals	Scheme Plans	Y	
Signals	Signalling Arrangements	Y	
Signals	Signalling Diagrams (SD)	Y	
Signals	Software Listings and Ladder Diagrams	Y	
Signals	System Block Diagrams	Y	
Signals	System Architecture	Y	
Signals	Time Distance Graph	Y	
Signals	Track Circuit Plans (TP), Bonding Plans (BP) and Signalling Apparatus Plans (SAP)	Y	
Signals	Train Control Architecture Plans	N	This information can be shown on Train Control Systems Block Diagram
Signals	Train Control System Block Diagram, Equipment Layouts and Interface Specifications	Y	
Signals	Sign Posts and Marker Posts	N	Not Required
Signals	Communication Based Train Control (CBTC)	Y	

Design elements that shall be shown on each type of Signals drawing are detailed in MTM document L1-CHE-STD-069 Standard for Signalling Design and Documentation and/or V/Line document NIST-012.1 Standard for Signalling Design and Documentation.

9.1.2 Titleblocks

The different titles of Signalling Drawing that shall be used in the Titleblock are shown in Appendix L.

9.1.3 Names And Dates In Titleblock (Signals)

In addition to the requirements in Section 7.3, the following are specific for Signals drawings.

The names and dates to remain in the title block at the “As in service” stage are the names on the drawings for the “IFC” stage with exception to the “In service date which is obtained from the signed “Certificate of Signalling”.

9.1.4 Revisions

The DMS requires that it receives a copy of each subsequent revision that is added to a drawing after the drawing has been booked out of the DMS with all of its dates, signatures and certifications completed.

When a piece of equipment is constructed as per the “IFC” copy the revision should only go up by one letter and should state the changes to the asset(s) or in the drawings and not the projects name. E.g. “REVISED A/C POINTS DYN175 RELOCATED.” and not “REVISED A/C LEVEL CROSSING REMOVAL.”

Refer to Appendix M for revision examples.

9.1.5 Drawing Number Allocations and Circuit Book Sequence Allocation

Sheets within each circuit book design package shall be numbered in ascending order as per the following sequence below, where relevant. Drawing groups are in sequence order and designated in **bold**, with sub-groups also in order shown beneath.

1. **Index**
2. **Power Supplies & Earthing**
    a. 110V power distribution
    b. Earth Leakage Detection
    c. Earth Mat Arrangement
    d. Earthing details
3. **Train Detection**
    a. Track circuits, feeds
    b. Track circuit, relays (feed and relay can be combined on one sheet)
    c. Track circuit, repeats and sticks
    d. Track circuit inputs
    e. Axle counter system overview
    f. Axle counter power supply and health indications
    g. Axle counter trackside connections
    h. Axle counter reset inputs and track section outputs
    i. Axle counter configuration setup sheet
4. **Signals** *(note #1)*
    a. Signal mechanism and controls (searchlight type)
    b. Signal lighting (LED or incandescent type)
    c. Trainstop control, mechanism and detection
    d. TPWS circuits
    e. Points *(note #2)*
    f. Points controls
    g. Points mechanisms
    h. Points detection *(note #3)*
5. **Level Crossings**
    a. Control circuits
    b. Flashing light circuits
    c. Boom gate circuits
    d. Traffic light co-ordination
    e. Monitoring and alarms
    f. Focussing diagram
6. **Pedestrian Crossing**
    a. Pedestrian gate control
    b. Pedestrian gate mechanisms

c. Pedestrian gate indication and alarms

d. Emergency pedestrian gate latch circuits

e. Emergency pedestrian gate layouts

7. **Miscellaneous Signalling equipment** *(note #4)*

    a. Active speed boards

    b. SPAD alarms

8. **Communications**

    a. High level overview communications diagrams

    b. Communications power supplies

    c. Communications fibre patch panel connections

    d. Network switch/router connections

9. **General Circuits**

10. **Layouts**

    a. Layout of Relay Room (top view)

    b. Layout of apparatus, terminations and contact nos. (1 drawing number, multiple sheets) (note #6)

    c. Layout – Signalling Equipment Room

    d. Layout – Power rack, terminations and contact nos. (1 drawing number, multiple sheets)

    e. Layout – Communications rack, terminations and contact nos. (1 drawing number, multiple sheets)

    f. Layout – Termination/junction rack, terminations and contact nos. (1 drawing number, multiple sheets)

Where existing relay interlocking are re-drawn and re-ordered in a new circuit book with compliant DMS numbers allocated, then these should follow the above order for general drawing types with specific drawing titles ordered as per below, where appropriate.

- Signalling arrangement plan
- Bonding plan
- Cable running plan
- Control table
- Release table
- Approach relays, bells and annunciators
- Track feed/Relays
- Track repeat, repeat Stick relays and repeat relays
- Block relays and block repeat relays
- Stick relays
- Low speed push button stick relays
- Route locking relays and diagrams
- Route proving relays
- Approach locking relays
- Approach timers

- Signal controls
- Low speed signal controls
- Signal mechanism/lighting circuits
- Pole change relays
- Low speed time element relays
- Points controls, mechanisms and detection
- Interface circuits
- Single line controls
- Telemetry circuits and passenger information systems
- Indication circuits (maintenance panel)
- Indication circuits (signaller's panel)
- Panel indication layouts
- Layout of Apparatus

#1. The allocation of drawing numbers for signal circuits shall include the signal's train stop and TPWS in the same group of circuits as related to that signal.

#2. Points controls, detection and mechanisms may be combined in a single drawing (one sheet view) where practical, taking care to ensure circuit details are not compromised and the drawing remains uncluttered and legible. Using separate sheet views on the same drawing number to represent different circuit types is not permitted.

#3. All supplementary detection drawings are to be allocated directly after the primary detection circuits.

#4. Bespoke signalling equipment (e.g. track asset monitoring, beacons etc.)

#5. General circuits

#6. Contact analysis of relays shall be arranged in the same order as represented on the front view box layout. The top row on the left-hand side of the location shall be treated as the first row, the ascending order of relays from left to right. Contact analysis may be grouped to be consistent with the relay rows on the box/rack layout, a header and footer provided for each relay group/row - this will aid the maintainer in locating and discerning relay layout and contact details.

9.1.6 Spare Drawing Number Allocations

When creating the initial books for new works the Designers should leave a minimum of five spare drawing numbers between each drawing group for future drawings to be added into the books.

Not leaving spare numbers will mean that when new drawing numbers are created the books will no longer be in alphanumeric order.

If new drawings are required and there are no spare numbers available, the drawings shall be inserted into the existing books as per the book ordering sequence in Section 9.1.5.

Where a large number of drawings are re-produced (re-drawn) In a compliant format then two spares should be allocated between each drawing group.

9.2 Signals Drawing Setup

9.2.1 Signals Drawing File Format

MicroStation shall be used to create all Signals drawings with the exception of Control Tables. Control Tables shall be created in Microsoft Excel (Refer Section 9.5.4).

9.3 Drawing Content

9.3.1 Line Styles

MicroStation standard line styles shall be used.

The line weight of 1 shall be used for lines on circuit drawings. Lines may vary in weight depending on the type of Signals drawing.

9.3.2 Levels

Levels shall be used to distinguish between the design and in service stages of the work shown in the CAD file.

The names of the Levels that shall be used in all Signals Drawing CAD files are specified in Appendix Q – Layers / Levels. This also provides additional details regarding line colours to the details provided in VRIOGS 012.1 2008 Standard for Signalling Design and Documentation.

In MicroStation, all drawing content shall use the “coloured-by” Level setting to select the Colour specified in the table above.

All drawing content shall be placed on the G-IN SERVICE Level in the CAD File and in the Default View. Refer to Level 1 Section 5.7 for Default View specifications.

To identify Removal and New works, a colour filled Box shall be drawn around the relevant removal or new area on the drawing. The Box shall be placed on the G-REMOVAL WORK Level or G-NEW WORK Level; and shall be filled with the Colour specified above in Appendix Q – Layers / Levels.

Refer to the following Figures in Appendix G for examples of G-REMOVAL WORK and G-NEW WORK

- Figure G.01: “Removal Works”; and
- Figure G.02: “New Works”.

The G-IN SERVICE Level work shall be brought to the front of the G-REMOVAL WORK and G-NEW WORK content in the CAD File using the Bring to Front command in MicroStation. This shall ensure that the drawing content on the G-IN SERVICE Level is not hidden by the colour filled Boxes on the G-REMOVAL WORK and on the G-NEW WORK Levels.

The Boxes placed on either the G-REMOVAL WORK or G-NEW WORK Level shall be deleted in the CAD File in MicroStation prior to submitting the As-built drawings to the DMS.

When drawings are returned to the DMS, all of the elements on the Default View shall be placed on the ‘G-IN SERVICE’ level.

9.3.3 Cells

Cells are standard symbols used to ensure consistency on Signals Drawings. The following Cell Library shall be used for all Signals Drawings:

- VTG_Box Layouts_date.cel
- VTG_Litho_date.cel
- VTG_Sig Arr_date.cel
- VTG_Signals_date.cel
- VTG_Circuits_date.cel
- VT_General_date.cel
- VT_Axle Counters_date.cel

Where date shall be in the format YYYYMM e.g. 202108.

The cells in the DMSLibrary shall be used if available. Only if additional Cells are required, a request shall be submitted to DMS via email for the Cells to be supplied by DTP, subject to approval of DTP/DMS.

All new Cells shall be created on the G-IN SERVICE Level with the colour set by Level and the weight and style shall be set by Element using MicroStation commands.

9.3.4 Settings

The following Settings shall be used for all Signals Drawings that are Not to Scale and denoted N.T.S only:

- AA=0 (Active angle)
- AS=1 (Active scale)
- UR=1.75 (Unit round off)
- GRID SETTINGS=3.5.2 (Master, Reference)

9.3.5 Text Size

Text sizes smaller than VicTrack 1.8 and larger than VicTrack 7.0 shall not be used. The standard text fonts width and height parameters should generally not be altered, where alterations due to space constraints are necessary, the reduction of the text width is permitted observing a balance of readability, printability and consistency in the drawing. Refer to Table 10 below.

Table 10 Signals Text size

Seed file text name	Use
VicTrack 1.8 mm	Cable core, type and colour description Adjoining drawing references Enclosure name (accompanied by brackets “( )”) Bit analysis, module details Box layout termination layout, equipment types Fuse and termination analysis Km and equipment description (SAP, BP) Level crossing approach description Curve and gradient information Overlap description Table or routes
VicTrack 2.5 mm	Drawing number, drawing title (Index) Equipment titles Signal Names (Bonding and SAP) Function name e.g. BX/NX ‘Notes’ title for general drawing notes.
VicTrack 3.5 mm	As per DTP templates
VicTrack 5.0 mm	As per DTP templates
VicTrack 7.0 mm	As per DTP templates

9.3.6 Notes Within Drawings

There are two types of notes used in Signals drawings:

- General notes - These notes are general in nature and apply to the drawing in its entirety.
- Hash notes – These notes are uniquely annotated against the relevant drawing elements.

The Designers should place all general and hash notes within the internal title blocks border on the bottom right hand side of the drawing directly above the title block.

In cases where it is not possible to place the general and hash notes on the right-hand side of the drawing due to insufficient space, the notes shall be placed above and as close as possible anywhere along the drawings title block.

The notes headings shall be at a text size of VicTrack 2.5 with a heading of “Note:” or “Notes:” that is underlined. All other general and hash notes that are not “Titles or Headings” shall be left centre justified and VicTrack 1.8 in text size. These general notes shall be placed as numbered notes and then followed by the hash notes. All Notes shall be placed in numerical order.

NOTES:

1. DOORS INDIRECTLY CONNECTED TO EARTH BAR VIA EARTH STRAPS ATTACHED TO LOCATION CASE.
2. FOR EXTERNAL EARTH GRID ARRANGEMENT, REFER TO DRAWING DLG_G0152.

#1. TO BE LABELLED "DO NOT DISCONNECT".

Figure 8 Example of General and Hash notes

All other notes and hashes within the drawings border shall be VicTrack 1.8 and justified so that they write away from the object that they are describing when modified.

9.3.7 Abbreviated Colour Codes

The colour abbreviations in International Electrotechnical Commission Code for the designation of colours standard [IEC 60757] shall be used on all signalling drawings to describe the physical colour of cables and equipment.

Permitted colour abbreviations from Reference: International Electrotechnical commission standard are:

Red = RD

Black = BK

Green = GN

White = WH

Yellow = YE

Blue = BU

Brown = BN

Orange = OR

Violet = VT

Grey = GY

Pink = PK

Turquoise = TQ

9.3.8 Symbology And Measurements

The following symbology shall be used when displaying units of measurement on signalling drawings:

Speed - 50 km/h (50 kilometres per hour)

Length - 50 km (50 kilometres)

Length - 50 m (50 metres)

Length - 50 cm (50 centimetres)

Length - 50 mm (50 millimetres)

Time - 20 h (20 hours)

Time - 20 mins (20 minutes)

Time - 20 secs (20 seconds)

Frequency - 15 Hz (15 hertz)

Power - 1 kW (1 kilowatt)

Power - 15 W (15 watts)

Power - 15 VA (15 Volt Ampere)

Power - 15 Amp or 15 A (15 Ampere) Note: fuses are shown as a number 2 and not 2 A.

Power - AC (Alternating current)

Power - DC (Direct current)

Electrical potential difference – 5 V (5 Volts)

Electrical resistance - 5 ohms or 5 Ω (achieved by typing: 5 %%937 in the MicroStation text editing tool)

Area - 5 m^2 (achieved by typing: 5 %%178 in the MicroStation text editing tool)

Angle - 5° (achieved by typing: 5 %%d in the MicroStation text editing tool)

Capacitance - 5 µF (achieved by typing: 5 %%956 in the MicroStation text editing tool)

9.3.9 Earthing

All earthing wiring shown on drawings shall be labelled to show where the wire starts to where the wire is terminated. If the earth bar is not already stamped (in the case of a solid copper earth bar) the earth termination shall be numbered EB1, EB2, and EB3 etc. from the left to the right-hand side of the bar.

9.3.10 Index sheets

Each location box or equipment room shall have an individual index sheet that shows all equipment within that box or room that are fused from that location.

In the case where fuses from multiple locations are on the same circuit drawing the designer shall list the drawings on the reference section of all of the location indexes that the drawing circuits are fused from.

Further to the requirements in Section 8.9 Index Sheet, all drawings titles listed are to reflect the title on the drawings title block and be placed on the index in alphabetical order by drawing title, with a minimum gap of one grid space between titles and a minimum gap of 2 grid space between one group of alphabetical titles and the next group. All listed drawing titles are to be 2.5 VicTrack text and not in data fields.

The Index sheet shall also show all overarching reference plan numbers e.g. Signalling arrangement, Bonding plan, Cable running plans, etc. on the bottom right hand side above the title block on the internal drawing.

Drawing revisions shall be updated on the index when listed drawings are revised except in the case of the overarching drawings, where a note shall be added to the reference section stating that: “PLEASE REFER TO THE DMS FOR LATEST REVISIONS OF THE DRAWINGS LISTED BELOW.”

All indexes shall be represented as per the sample drawings in Appendix O.

9.4 Drawing Set Up

9.4.1 Drawing Size

Signals drawings shall be drawn on the DTP A3 drawing sheet and Titleblock. The following drawings shall be exempt from A3 size:

- Diagram face plates;
- Geographical Modules;
- Interlocking Sketches;
- Module drawings; and
- Pull diagrams.

All other drawings shall be drawn on the DTP A3 Titleblock. If drawing sheets other than size A3 are required in order to ensure drawing clarity, refer to Section 6.8.

9.4.2 Multiple Sheet Drawing

The following Signalling Drawings may be Multiple Sheet Drawings:

- Aspect Sequence Chart;
- Track Circuits, Bonding and Signalling Apparatus Plans;
- Signalling Arrangements;

- Cable Running Plans;
- Bonding Plans;
- Box Layouts;
- Points;
- Earthing

Refer to Section 5.7.2 Multiple Sheet Drawing for details on Multi Sheet drawing format.

9.4.3 Multiple Sheet Drawing Certification

Refer to Section 3.3.2 Multiple Sheet Drawings for details on certification requirements for Multiple Sheet Drawings

9.4.4 Control Table

Control Tables shall be created in Microsoft Excel format template (version compatible with Microsoft Excel 2002). The template contains the Titleblock (refer to Section 7 and Section 9.1.2), which is set up similar to a drawing template. The template also contains specific control requirements for the signalling system. The MicroStation Titleblocks, Control Table Template, and resource files can be downloaded from the DMS website.

The Index Sheet for the Control Table shall also be created as part of the Workbook.

The Control Table Workbook contains a number of macros to assist the Designer to control the data entry and standardise the presentation. All sheets are protected and only certain cells are available for modifications. Commands have been added under a special 'Control Tables' menu to provide the editing functions of the Control Tables and the maintenance of the Workbook. A description and instruction of each of the commands is available under 'Control Table' > 'Workbook Information and Help' in the Control Table template.

The File set up, file name and Titleblock requirements of the Control Table Workbook shall follow Sections 4, 5 and 6 of this document.

The user will be prompted for Location, Control Table book name, DMS Drawing Number, and a file Version. The values entered shall be applied to all sheets in the file. The values are not modifiable except via the Project Details command.

The Location name is the DMS location name and applies to the area controlled by that interlocking. The Designer may use one file for all functions controlled by that interlocking (up to a maximum of 320 sheets) or alternatively allocate files on a signalling object functional basis, i.e. one file for signals and another file for points or alternatively on a local area basis. When a Location is allocated with multiple files then the Control Table bookname is used to differentiate between the files.

The file Version has no relationship with the Revision appearing on any of the Control Tables and is just a version control feature available to the Designer for maintaining the file, although it is automatically incremented upon any 'File Save As' command.

For new Control Tables, every sheet shall be certified. For revised Control Tables, only the affected sheets shall be certified and compiled with previously certified sheets to form one PDF file.

9.4.5 Axle counter Templates

Axle counter templates shall be used to ensure standardisation across the Victorian Rail Industry.

The template files are available for download from the DMS website, under the Documents Vault Templates and Standards.

9.4.6 GIS Allocation On Drawings

Further to the requirements in DTP Infrastructure Drafting Drawing Section 4.3 GIS Reference, the following PASS coordinates or ID# information should be used on the following drawings:

Cable running plans: From first piece of equipment shown to last piece of equipment shown.

Signalling arrangements: Coordinates representing the Up and Down extent of the drawing content or from first piece of equipment shown to last piece of equipment shown.

Track circuits, bonding and signalling apparatus plans: From first piece of equipment shown to last piece of equipment shown.

Impedance and cross bonding plans: From first piece of equipment shown to last piece of equipment shown.

Circuits: Location box UP ID# or UP coordinates obtained from the beginning of the circuit (E.g. Fuse or Westrace card at the beginning of a circuit) and if multiple circuits are on the same sheet, from the Location box that appears on the drawing the most times.

Signalling diagrams/Lithos: From first piece of equipment shown to last piece of equipment shown.

Pull diagrams: Where the equipment is physically situated (E.g. Relay room, SER, CER).

Indication panels: Where the equipment is physically situated (E.g. Relay room, SER, CER).

Box Layout and SER: Where the equipment is physically situated (Actual box location or ID#).

Pull diagrams: Where the equipment is physically situated (E.g. Relay room, SER, CER).

Control table and Releasing tables: From first piece of equipment shown to last piece of equipment shown.

Focusing diagrams: From level crossing pavement at the centre of the crossing.

Index sheets: Where the equipment is physically situated (Actual box location or ID#).

If an existing piece of equipment is moved to a different position on site, e.g. A signal mast is moved 150m further up the line from its existing position, a new co-ordinate must be obtained by the construction crews via GPS and the information shall be forwarded to the Contractors Design office. The Contractors design office will then update their drawing and forward the same information to both MTM and DTP so that the signal mast position on the PASS system can be updated and a new ID# given to the asset if required.

9.4.7 Non-compliant Hybrid and Scanned Files

Any non-compliant scanned .CAL file that is booked out of the DMS and is altered, shall be returned as follows to the DMS:

The .CAL file shall be converted to a .CIT file. Modified .CAL format files will not be accepted back into DMS. Refer to 'Managing CAL and CIT Files User Guide' for details on how to convert a .CAL file format to a .CIT file format. This document is available for download from the DMS website under the Documents Vault/Templates and Standards.

The vector drawing .DGN and its corresponding raster file .CIT shall have the same file names (for example S2315_78C.DGN and S2315_78C.CIT).

The raster file shall be referenced into the vector file so that when they are placed into the same explorer folder the referenced file automatically attaches in the correct place within the drawing.

Raster files are not to be referenced using "Paths" into the drawing file when they are returned to the DMS.

The .CIT file is to be inverted to have a black background within the default (Figure Q1) and is to be set to "Sent to back" within the vector drawing file.

The internal border of the raster image is to be scaled into the supplied A3 IrasB title block (Figures Q2 and Q3).

When a raster reference does not fit lengthwise within the A3 title block, the title block may be stretched horizontally to accommodate the length, but must maintain its A3 height.

Hybrid files that have already been created as their DGN and CIT that are booked out of the DMS vault shall be returned as follows:

The vector drawing .DGN and its corresponding raster file .CIT shall have the same file names (for example S2315_78C.DGN and S2315_78C.CIT).

Both files are to be given a new revision and the new raster file referenced into the vector file.

Information that is removed from the raster file shall be physically deleted from the raster file and not "covered over" or 'masked' with MicroStation elements. For details on how to manipulate the raster portion of hybrid files in Paint please refer to 'Managing CAL and CIT Files User Guide'.

New vector information that is added to the drawing shall be placed on the "In service" level within the default view and set to "Bring to front" within the vector file.

9.5 Detailed requirements for Signals Drawing Types

9.5.1 Circuit Drawings

When placing Cells or Symbols on a circuit plan, the following placement should be used:

1. From the edge of the A3 sheet to the first element, typically a fuse, there should be 14 grid spaces, then 5 grid spaces to the next element and then 4 grid spaces to any subsequent element. Grid spaces may be reduced to 3 grid spaces, depending on the drawing content and space.
2. Electrical wire connections shown on circuit diagrams should be represented by an angled line to the element at 1 grid space across and a 1/2 grid space down.
3. The distance between individual circuits should be 4 grid spaces.
4. Circuit elements (e.g. fuses, terminations, contacts and relays) should be aligned down the page.
5. Dots shall not be used to represent electrical wire connections.
6. Duplicate information shall not be carried forward to the next plan. Information shown in 'Dotted' format is not acceptable.

9.5.2 Box And Relay Rack Layouts And Circuits

Example Signals Drawings are available on the DMS website link within the PTV Sample Drawings folder in the DMS.

The Designers shall follow the points listed below when creating Signalling location box layouts and SER rooms.

Information that shall be shown on signalling location boxes and SER room drawings:

- Busbar extension loops on termination rows (External wires)
- Busbar solid connections on termination rows (Internal solid links)
- Busbar connection points on termination rows
- Row labels e.g. A, B, C that are available for future terminations
- Show box layouts and termination sheets in portrait and contact analysis sheets in landscape (except when using boxes other than "Mispec" where an exemption will need to be requested to show the box layout in landscape).
- Display location box height and type at the bottom of the box layout sheet.
- Terminations shall be numbered in continuous numeric order from A1 - A50 (or to where the termination row ends).
- Fuses shall be numbered in continuous numeric order from A1 – A50. Negatives shall be numbered in continuous numeric order from A1 – A50 and appended with "L" left or "R" right. For example, see "E" Box and relay rack layouts and circuits.
- Each individual SER rack shall be treated as if they were a stand-alone location box and should be presented in the same manner. It shall have its own drawing number and consist of a key plan, rack layout, terminations sheet and contact analysis sheet where required. The title block naming shall follow the "Title block naming convention" as described in Section 8.2.2.
- The SER room layout drawing shall be shown as a single sheet drawing.
- Box layout cells may be altered to extend termination rows from the top to the bottom of the boxes. Termination scales shall also be extended to match and shall be placed next to the box cell. All cells that are "Dropped" and altered within a drawing shall be regrouped within the drawing.
- Termination rows shall be placed in alphabetical order on the termination sheets. Each sheet shall have a minimum of three rows on them and a maximum of five rows (to leave space for future notes to be added).
- Track arrestor detail diagrams shall be shown directly under the termination rows that they have been placed into.
- All fuses, negatives and terminations that are on circuit plans shall be described by their rack names and not that of the relay room.
- Contact analysis cells shall be placed on the drawing at a line weight of zero to ensure that back contacts are clearly visible.

For an example refer to Appendix "N" Box and relay rack layouts and circuits.

Information that shall not be shown on Box, relay room and their associated circuit drawings are as follows:

- Outlines of empty racking or G-rail in location boxes and SER racks layouts.
- Empty fuse rating circles on termination sheet rows.

- Equipment lists for location boxes.
- Fuses and negatives shall not be number A1 – A10 for “BX” and then numbered A – A10 for the next set of fuses “1BX”.
- Dashes are not to be included onto termination rows where there are no drawing wires or numbers required.
- Data fields shall not be added to drawings or cells that do not already have them from the DMS cell library.

9.5.3 Signalling Diagram

Signalling Diagram (also known historically as “Lithos”) shall be produced on A3 drawings. Each drawing shall have its own Drawing Number and shall not to be split into multiple sheet views.

When Broad Gauge and Standard Gauge are shown on separate Drawings they shall be drawn as solid lines. When Broad Gauge and Standard Gauge are on the same Drawing, Broad Gauge shall be drawn as a solid line and Standard Gauge shall be drawn as a dashed line. Dual Gauge shall be drawn with the combination of a dashed line and a solid line in parallel.

For new Signalling Diagrams, a note identifying the old Signalling Diagram Number shall be placed under the new Signalling Diagram Number shown on the drawing, e.g. ‘supersedes 07/06’.

Refer to Example Signalling Drawings located on the DMS website in the Example Signal Drawings sub- folder. Signalling Diagram legends shall be placed on drawings only in the case where there may be a need to detail unusual or site-specific elements.

The following drafting criteria shall be used on Signalling Diagrams:

1. All tracks shall be shown using line WT 2 for main, LWT 1 for wired sidings and LWT 0 for unwired sidings.
2. All passenger and goods platforms shall use the abbreviation PL. (e.g. platform 9 shall be denoted as PL.09) and shall be shown using LWT 0.
3. All crossings shall be shown using LWT 1.
4. All signals equipment shall be shown using LWT 0.
5. All distances/dimensions shall be shown using LWT 0 with a line style of 2.
6. Cells shall be placed on drawings at 1:1.
7. Distance between adjacent tracks shall be drawn at 3.5mm or 1 grid space.
8. Distance between adjacent lines shall be drawn at 5.25mm or 1.5 grid spaces.
9. Distances between tracks and lines shall be increased to 2 grid spaces to accommodate signalling equipment, e.g. signalling infrastructure for island platforms.

9.5.4 Signalling Arrangement Plans and Bonding Plans

1. The Consultant shall check the Master Index Plan for the Signalling Arrangements and Bonding Plans (located in PTV Documents Vault/SAP, Litho and BP Index) prior to creating or updating a SAP or BP.

- Please note that Signalling Diagram, Signalling Arrangement, Bonding and Territory Plans booked out shall be returned to DMS such that their coverage complies with Master Index for SD, SAP, BP, CRP and TP, whether a Dispensation is provided or not.
- The Master Index is available for download from DMS Website (located in the DMS directory: Templates & Standards/SAP, Litho and BP Index).

2. The Master SAP and Bonding index needs to stay as "Static" extents but allow for dispensations when the static cut lines cut through new/existing equipment or stations. If the cut line goes through equipment or stations the Contractors may request a dispensation and place the new cut line half way between the equipment that would have been "cut though" and the next piece of equipment along the line.
3. For Signalling Arrangement Plans, when more than one location is involved, the location name shall use the following format, with the ‘up’ most location first:
    - Location 1 ‘to’ Location 2

- For example, the Location name extending from Oakleigh to Caulfield should be CFD to OAK (refer to Section 5.3 for Location Codes).

4. Duplicate information shall not be carried forward to the next plan. Information shown in 'Dotted' format is not acceptable.
5. All areas within the rail network that contain signal mounted junction boxes shall have the junction boxes shown on their respective Bonding plans using the Apparatus box (AB) cell from within the VTG_SIG_ARR_date.cel located on the DMS website.

- The cell is to be placed onto the drawing and arrowed to a cross that is drawn onto the signals mast (as per the below sample figure 9 and the Bonding plan template).
- The (AB) cell is to be placed so that it does not clutter the drawing and that the arrow does not cross other line work where possible.

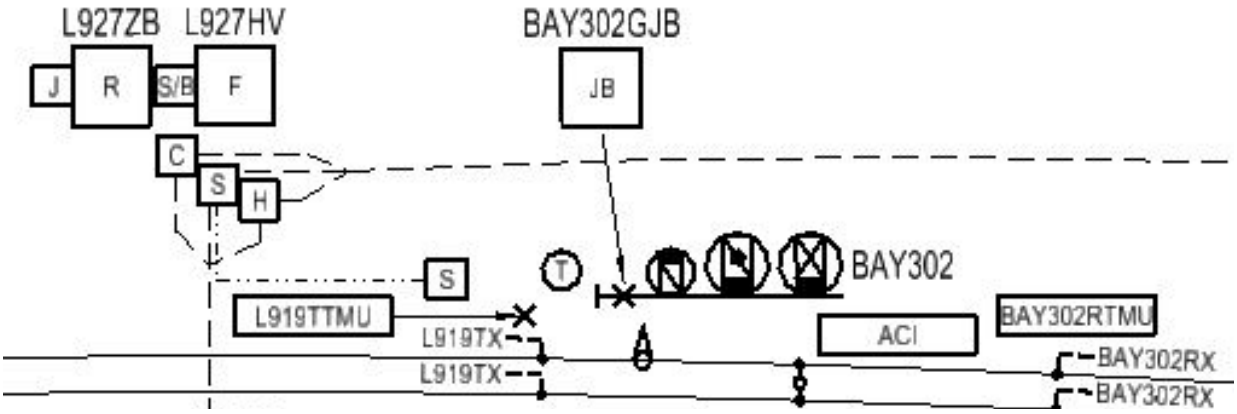


Figure 9 Example of Apparatus Box (AB) cell

9.5.5 CBI (Computer Based Interlocking)

For all CBI, a copy of the data file and PDF of the data file shall be stored on the DMS together with a CBI Index Sheet. CBI Data should be booked in according to the CBI Data Administration flowchart, available on the DMS website. A CBI Index Sheet shall be created to capture and control all CBI application data in a DMS compliant drawing in order to maintain and trace the data.

The CBI Index Sheet shall be created in the standard MicroStation CBI Template, located in the Documents Vault/Templates and Standards. CBI application data shall be stored in its relevant native format as a complete As-In Service package.

There shall be one CBI Index Sheet per Master Interlocking which contains all CBI data within that Interlocking.

For each CBI Index Sheet, the Titleblock information shall be as outlined in the Table below:

Table 11 Titleblock Information

Titleblock Field	Description
Discipline	Signals
Discipline Code	G
Location Name	Master Interlocking Name (in accordance with the DMS location name in Appendix A) Title 1 – "CBI Index Sheet"

The CBI Index Sheet table shall contain the following information for each set of CBI application data:

- Filename/description/title
- Revision Number
- File Type
- Date

- Reference (e.g. System Architecture drawing number)

The individual file revision number has no relationship to the Revision Number in the Title block.

When submitting the CBI Data into DMS it shall include:

1. A CBI Index Sheet (Note: 1 DGN file and 1 PDF file contains a clean copy and a certified copy); and
2. A complete AIS CBI application data package. (Note: Data file and PDF of Data File zipped up in zip format).

A DMS Compliant drawing for an interlocking specific system architecture diagram shall be submitted as part of the Signalling Drawing package. Refer to Appendix K for a sample CBI Titleblock.

9.5.6 Cable Running Plans

The order of cables on a cable running plan shall be as follows:

1. Power (BX/NX, 2200V HV, 3BX/3NX, WBX/WNX)
2. Communications (Data link, Comms)
3. Through Cables
4. Local Cables

Cable running plans shall not have an extract of the bonding plan included on it.

9.5.7 Road Rail Pads

1. Road Rail Pads (RRP), also known as Road Rail Vehicle Access Pads, shall be drawn geographically on Signalling Arrangement Plans.
2. RRP shall be drawn geographically on Signalling Diagrams.
3. RRP shall be drawn geographically on Signalling Bonding, Track Circuit and Apparatus Plans.
4. RRP shall be drawn through all lines as shown in Fig 10.

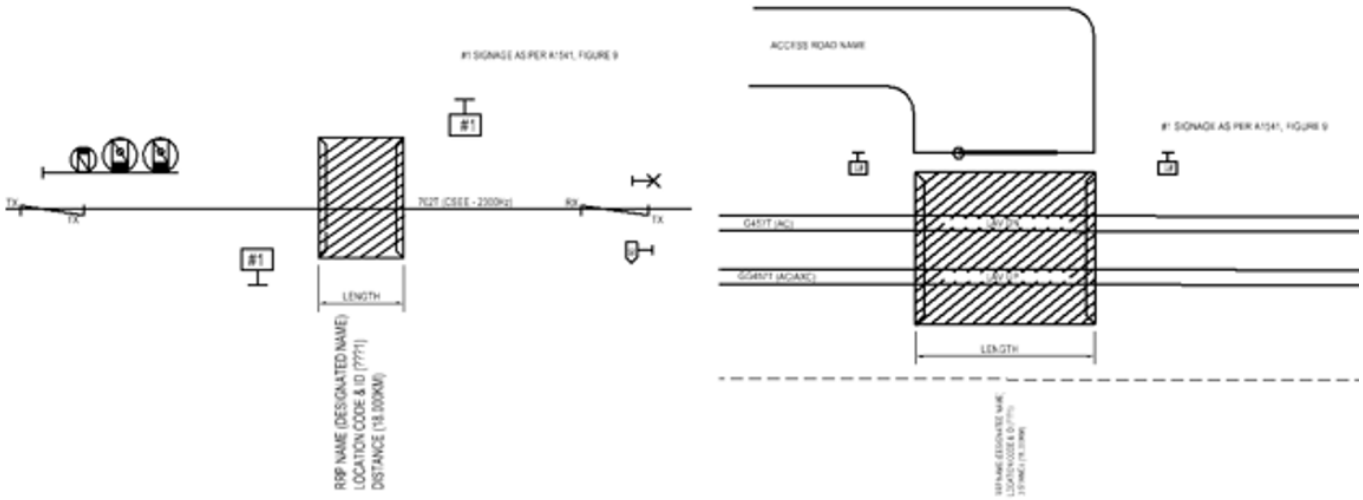


Figure 10 Example of Road Rail Pads (RRP) presentation

5. RRP names shall be unique and assigned by the with the Accredited Rail Transport Operator (ARTO) Engineering Division.
6. RRP names shall be identical on signalling plans
7. RRP symbols shall indicate entry and exit points and their respective street names on the signalling diagram.
8. RRP line identifiers shall be shown on Signalling Bonding, Track Circuit and Apparatus Plans where there are multiple lines. Refer to Figure 11.

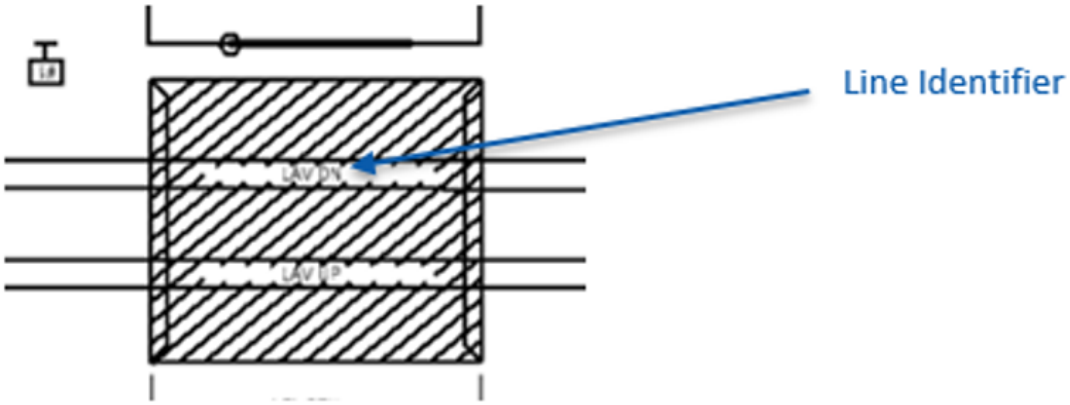


Figure 11 Example of line identifiers in Road Rail Pads (RRP) presentation

9.6 Submission of Drawings to DMS

When CAD files are returned to the DMS, all elements within the Default Level shall be placed on 'G-IN SERVICE' level.

The PDF of a Signalling Diagram shall contain 2 sheets:

- One PDF displaying the DTP Titleblock; and
- One scanned PDF contains handwritten signature for the relevant Operator.

Alternatively, a digital signature may be provided. Refer to the Network Technical Standard – DMS Standard Processes for guidance on Digital Signature requirements.

10 Railway Track and Civil And Civil Structural Discipline Standards (Level 2)

10.1 Introduction

This Section specifies the discipline-specific requirements that shall apply for Railway Track and Civil drawings including Civil Structural Drawings. Railway Track and Civil drawings shall comply with the Level 1 drawing requirements outlined in Sections 4 to 8.

Specific requirements for the Railway Track and Civil discipline are set out in the sections below.

10.1.1 Railway Track and Civil Drawing Types

The below table outlines Typical Drawing Types which may be produced throughout project delivery which will be inserted in 'Title 2' of the drawing title block for this discipline. The table also outlines Drawing Type which shall be updated to 'As-Built' status and submitted to DMS.

Table 12 Railway Track and Civil Typical Drawing Types

Design Package	Drawing Type	As-Built Required	Comments
CSR	Cover Page	Y	
CSR	Index	Y	Not Required if Index sheet can be combined with Cover Sheet where space permits
CSR	General Notes and Legend	Y	Not Required if General Notes and Legend combined onto 1 drawing where space permits
CSR	Locality Plan	Y	Not Required if This information can be added onto the Cover Page where space permits
CSR	Staging Plans (Permanent)	N	Not required
CSR	Staging Plans (Temporary)	N	Not required
CSR	Typical Details	Y	
CSR	Pit Schedule	Y	
CSR	Layout Plan	Y	
CSR	Long Sections	Y	
CSR	Typical Trench Cross-sections	Y	
CSR	Typical Cross-sections	Y	Not required if all services are shown on the Typical Trench Cross-sections
CSR	Marker Post Details	N	Not required
Drainage	Cover Sheet	Y	
Drainage	Index	Y	Not Required if Index can be included onto the Cover Sheet where space permits
Drainage	General Notes and Legend	Y	Not Required if General Notes and Legend drawing can be combined with Cover Sheet
Drainage	Locality Plan	Y	Not Required if Locality Plan can be combined with the Cover Sheet where space permits

Design Package	Drawing Type	As-Built Required	Comments
Drainage	Pit Schedules	Y	
Drainage	Typical Details	Y	
Drainage	Typical Sections	Y	Not Required if Drainage information can be shown on Track typical cross-sections. Complex drainage still requires this drawing.
Drainage	Layout Plan	Y	
Drainage	Longitudinal Sections	Y	Not Required, only for surface drainage (example Cess)
Road / Maintenance & Access	Cover Sheet	Y	
Road / Maintenance & Access	Index Sheet	Y	Not Required if Index can be included onto the Cover Sheet where space permits
Road / Maintenance & Access	Legend and General Notes	Y	Not Required if General Notes and Legend drawing can be combined with Cover Sheet
Road / Maintenance & Access	General Site Arrangements / Locality Plans	Y	Not Required if Locality Plan can be combined with the Cover Sheet where space permits
Road / Maintenance & Access	Staging Plans (Permanent)	N	Not Required
Road / Maintenance & Access	Staging Plans (Temporary)	N	Not Required
Road / Maintenance & Access	Typical Sections	Y	
Road / Maintenance & Access	Geometric Plans	Y	Not Required, Can be combined with alignment plans where space permits
Road / Maintenance & Access	Alignment Plans	Y	
Road / Maintenance & Access	Longitudinal Sections	Y	
Road / Maintenance & Access	Cross sections	Y	Not Required if Combine cross sections to show all disciplines (track, roads/maintenance access, drainage, CSR, etc.) where space permits
Road / Maintenance & Access	Kerb Set Out Plans	N	Not Required. IFC drawing required for ARTOs only
Road / Maintenance & Access	Line marking Plans	Y	
Road / Maintenance & Access	Fencing and Barrier Plans	Y	
Road / Maintenance & Access	Pavement Profiles	Y	
Road / Maintenance & Access	Pavement Limit Plans	Y	
Road / Maintenance & Access	Pavement Details	Y	

Design Package	Drawing Type	As-Built Required	Comments
Road / Maintenance & Access	Typical Details	Y	
Road / Maintenance & Access	Utilities Coordination Plans	Y	
Road / Maintenance & Access	Shared User Paths	Y	
Road / Maintenance & Access	Signage	Y	
Road / Maintenance & Access	Traffic Signal Plans	Y	
Road / Maintenance & Access	Lighting Plans	Y	
Road / Maintenance & Access	Lighting Details	Y	
Road / Maintenance & Access	Lighting Power Diagrams	Y	
Track	Set Out Data	Y	Not Required if this information can be combined onto Alignment Plan where space permits
Track	Schematic Diagrams	Y	
Track	Cover Sheet	Y	
Track	Index Sheet	Y	Not Required if Index Sheet can be included onto the Cover Sheet where space permits
Track	General Notes	N	
Track	General Site Arrangements / Locality Plan	Y	Not Required if Locality Plan can be combined with the Cover Sheet where space permits
Track	Staging Plans (Permanent)	N	Not Required
Track	Staging Plans (Temporary)	N	Not Required
Track	Drawing Tree	N	Not Required
Track	Legend	Y	
Track	Cross sections	Y	
Track	Curve and Gradient Diagrams	Y	Not Required if this information is shown on Longitudinal Sections
Track	Longitudinal Sections	Y	
Track	Alignment Plans	Y	
Track	Turnouts	Y	
Track	Points and Crossing Layout Details	Y	Not Required if standard layout, if non-standard drawing needs to be retained
Track	Buffer Stop Details	Y	
Track Formation and Earthworks	Cover Sheet/ Title Page	N	Not Required
Track Formation and Earthworks	General Notes and Legend	N	Not Required

Design Package	Drawing Type	As-Built Required	Comments
Track Formation and Earthworks	Earthworks Layout Plan	N	Not Required
Track Formation and Earthworks	Earthworks Cross-sections	N	Not Required
Track Formation and Earthworks	Earthworks Typical Details	N	Not Required
Utilities	Cover Sheet	Y	
Utilities	General Notes and Legend	Y	Not Required if General Notes and Legend drawing can be combined with Cover Sheet
Utilities	Locality Plan	Y	Not Required if Locality Plan can be combined with the Cover Sheet where space permits
Utilities	Utilities Plans	Y	
Utilities	Long Sections	Y	
Utilities	Cross Sections	Y	

10.1.2 Civil Structural Drawing Types (MicroStation / AutoCAD)

The below table outlines Typical Drawing Types which may be produced throughout project delivery which will be inserted in 'Title 2' of the drawing title block for this discipline. The table also outlines Drawing Type which shall be updated to 'As-Built' status and submitted to DMS.

Table 13 Civil Structural Drawing Types

Design Package	Drawing Type	As-Built Required	Comment
Bridges	Cover Sheet	Y	
Bridges	Locality Plan	Y	Not Required if Locality Plan can be combined with the Cover Sheet where space permits
Bridges	Index	Y	
Bridges	Legend	Y	
Bridges	General Notes	Y	
Bridges	General Arrangement Plan	Y	
Bridges	General Arrangement Sections	Y	
Bridges	Foundation Layout	Y	
Bridges	Bored Pile Details	Y	
Bridges	Pilecap Details	Y	
Tunnels	Earthworks Details	Y	
Bridges	Pilecap reinforcement	Y	
Bridges	Abutment concrete details	Y	
Bridges	Abutment reinforcement details	Y	
Bridges	Restraint Block Details	Y	

Design Package	Drawing Type	As-Built Required	Comment
Bridges	Pier Details	Y	
Bridges	Bearing Layout	Y	
Bridges	Bearing Details	Y	
Bridges	Girders - Marking Plan	Y	
Bridges	Girders - GA	Y	
Bridges	Girder - GA Sections	Y	
Bridges	Girders - Reinforcement Plan/Elevation/Section	Y	
Bridges	Girders - Reinforcement Detail	Y	
Bridges	Girders - Pre-stress details	Y	
Bridges	Deck - Construction Sequence	N	Not Required
Bridges	Deck - Layout	Y	
Bridges	Deck - Concrete Details	Y	
Bridges	Deck Reinforcement	Y	
Bridges	Approach Slab Concrete Details	Y	
Bridges	Approach Slab Reinforcement Details	Y	
Bridges	Expansion Joints Details	Y	
Bridges	Traffic Barrier Layout	Y	
Bridges	Off-Structure Barrier Layout	Y	
Bridges	Pier Protection Barrier Layout	Y	
Bridges	Pier Protection Barrier Elevations & Setout	Y	
Bridges	Pier Protection Barrier Details	Y	
Bridges	Pier Protection Barrier Foundation Reinforcement Details	Y	
Bridges	Pier Protection Barrier Concrete Details	Y	
Bridges	Pier Protection Barrier Reinforcement	Y	
Bridges	Pier Protection Transition - Concrete Details	Y	
Bridges	Existing Bridge Strengthening Details	Y	
Bridges	Miscellaneous Details	Y	
Bridges	Loading Diagrams	Y	
Retaining Walls	Cover Sheet	Y	
Retaining Walls	Locality Plan	Y	Not Required if Locality Plan can be combined with the Cover Sheet where space permits
Retaining Walls	Index	Y	

Design Package	Drawing Type	As-Built Required	Comment
Retaining Walls	General Notes and Legend	Y	
Retaining Walls	General Arrangement Plan	Y	
Retaining Walls	General Arrangement Sections	Y	
Retaining Walls	Foundation Layout	Y	
Retaining Walls	Bored Pile Details	Y	
Retaining Walls	Pilecap Details	Y	
Retaining Walls	Pilecap reinforcement	Y	
Retaining Walls	Concrete Details	Y	
Retaining Walls	Expansion Joints Details	Y	
Retaining Walls	Miscellaneous Details	Y	
Retaining Walls	Loading Diagrams	Y	
Retaining Walls	Steel Member Schedule	Y	
Retaining Walls	Construction Sequence	N	Not Required. IFC Drawing to be issued to ARTOs only
Noise Walls	Title Page	Y	
Noise Walls	Index	Y	
Noise Walls	General Notes and Legend	Y	
Noise Walls	General Arrangement Plan	Y	
Noise Walls	General Arrangement Sections	Y	
Noise Walls	Foundation Layout	Y	
Noise Walls	Bored Pile Details	Y	
Noise Walls	Pilecap Details	Y	
Noise Walls	Pilecap reinforcement	Y	
Noise Walls	Panel Details	Y	
Noise Walls	Expansion Joints Details	Y	
Noise Walls	Miscellaneous Details	Y	
Noise Walls	Loading Diagrams	Y	
Noise Walls	Steel Member Schedule	Y	
Tunnels	Cover Sheet	Y	
Tunnels	General Notes and Legend	Y	
Tunnels	Locality Plan	Y	Not Required if Locality Plan can be combined with the Cover Sheet where space permits
Tunnels	Set Out Plan	Y	
Tunnels	Fire Protection Requirement	Y	
Tunnels	General Arrangement Plan	Y	
Tunnels	Platform Loading Plan	Y	

Design Package	Drawing Type	As-Built Required	Comment
Tunnels	Platform Top Reinforcement Plan	Y	
Tunnels	OTE Marking Plan	Y	
Tunnels	Slab Loading Plan	Y	
Tunnels	Bottom Reinforcement Plan	Y	
Tunnels	Bridge Slab Reinforcement Details	Y	
Tunnels	Fire Egress Slab Loading Plan	Y	
Tunnels	Platform Typical Details	Y	
Tunnels	Bearing Strip Details	Y	
Tunnels	Internal Structure Details	Y	
Tunnels	Beam Elevations	Y	
Tunnels	Wall Elevation	Y	
Tunnels	Wall Reinforcement Elevation	Y	
Tunnels	Shaft Interface Drainage Requirement	Y	
Tunnels	Precast Plant Lifting General Arrangement Plan	N	Not Required. IFC Drawing to be issued to ARTOs only
Tunnels	Precast Lifting Details	N	Not Required. IFC Drawing to be issued to ARTOs only
Tunnels	Stair Details	Y	
Tunnels	Blockwork Wall Typical Details	Y	
Tunnels	OTE Details	Y	
Tunnels	Earthworks Plans	Y	
Tunnels	Earthworks Sections	Y	
Sign Structures – Gantry / Cantilever	Cover Sheet	Y	
Sign Structures – Gantry / Cantilever	General Notes and Legend	Y	
Sign Structures – Gantry / Cantilever	Locality Plan	Y	Not Required if Locality Plan can be combined with the Cover Sheet where space permits
Sign Structures – Gantry / Cantilever	Elevation	Y	
Sign Structures – Gantry / Cantilever	General Arrangement Plan	Y	
Sign Structures – Gantry / Cantilever	Typical Details	Y	
Sign Structures – Gantry / Cantilever	Steelwork Details	Y	
Sign Structures – Gantry / Cantilever	Foundation Details	Y	
Sign Structures – Gantry / Cantilever	Reinforcement Details	Y	

Design Package	Drawing Type	As-Built Required	Comment
Sign Structures – Gantry / Cantilever	Barrier Details	Y	
Major Culverts	Cover Sheet	Y	
Major Culverts	General Notes and Legend	Y	
Major Culverts	Locality Plan	Y	Not Required if Locality Plan can be combined with the Cover Sheet where space permits
Major Culverts	General Arrangement Plan	Y	
Major Culverts	Base Slab Details	Y	
Major Culverts	Crown Unit Layout	Y	
Major Culverts	Wingwall and Endwall Details	Y	
Major Culverts	Ground Beam Details	Y	
Major Culverts	Barrier Railing Details	Y	

10.2 Railway Track and Civil And Civil Structural Drawing Setup

10.2.1 Railway Track and Civil Drawing File Format

MicroStation shall be used to create all Railway Track and Civil drawings. MicroStation Titleblocks and resource files are found on the DMS website.

10.2.2 Civil Structural Drawing File Format

MicroStation/AutoCAD shall be used to create all Civil Structural drawings. MicroStation and AutoCAD Titleblocks and resource files are found on the DMS website.

10.3 Drawing Content

10.3.1 Railway Track and Civil and Civil Structural Drawing Line Styles

Line Styles as detailed in Appendix Q – Layers / Levels Appendix Q – Layers / Levels shall be used.

If additional Line Styles are required, a request shall be submitted to DMS, via email, for the Line Styles to be supplied by DTP, subject to approval by DTP/DMS.

10.3.2 Railway Track and Civil Drawing Levels

The Levels defined in Appendix Q – Layers / Levels shall be used on Railway Track and Civil drawings.

All elements shall be drawn using the Levels defined with the Colour, Line Styles and weight set to By Level.

Levels shown containing the character ‘X’ in the level name have been set aside for project-specific content as required. Where project specific Levels are required, they shall be in the format of C-D-xxxx-xxxx. C-E-xxxx-xxxx, C-LS-xxxx-xxxx. C-XS-xxxx-xxxx or C-X-xxxx-xxxx

The RAIL-CTRL-XXX level name shall be used to indicate the rail line name and direction of the track control line. For example, RAIL-CTRL-SUY-UP for Sunbury line Up track or RAIL-CTRL-SHM-DN for Sandringham line Down track.

10.3.3 Cells (MicroStation)

Cells are standard symbols used to ensure consistency on Railway Track and Civil drawings. The following Cell Library shall be used for all Railway Track and Civil drawings:

- VTC_crossingwork_date.cel
- VTC_aerapatdate_date.ce
- VTC_civil_date.cel

- VTC_road_date.cel
- VTC_drainage_date.cel
- VTC_utilities_date.cel
- VTC_track_date.cel
- VTC_trains_date.cel
- VTC_trees_date.cel
- VTC_vehicles_date.cel
- VTC_general_drafting_date.cel

The date contained in the Cell Library above shall be in the format YYYYMM (e.g. 200608).

If a Cell requires minor alterations, the Cell may be dropped elements. Once the Cell is amended, the Cell shall be regrouped as one entity.

The cells in the DTP Library shall be used if available. If additional Cells are required, a request shall be submitted to DMS, via email, for the Cells to be supplied by DTP, subject to approval by DTP/DMS.

10.3.4 Blocks (AutoCAD)

The Block Libraries that shall be used for Structural Drawings are located on the DMS Website in the Documents Vault/Structural Second Level Files/Blocks.

If additional Block Libraries are required, a request shall be registered to DMS, via email, for the Block Libraries to be supplied by DTP, subject to approval by DTP.

If a Block requires minor alterations, the Block may be Exploded and amended and, upon completion, the Block shall be regrouped as one entity.

10.3.5 Settings

The following Settings shall be used for all Railway Track and Civil Drawings that are “Not to Scale” and denoted N.T.S:

- AA=0 (Active angle)
- AS=1 (Active scale)
- UR=1.75 (Unit round off)
- GRID SETTINGS=3.5,2 (Master, Reference)

10.4 Drawing Set Up

10.4.1 Drawing Colour

Drawing colour shall be in accordance with the Levels specification outlined in Appendix Q – Layers / Levels.

If additional colours are required, a request shall be submitted to DMS, via email, for the Colours to be supplied by DTP, subject to approval by DTP.

11 Telecommunications Discipline Standards (Level 2)

11.1 Introduction

This Section specifies the discipline specific requirements that shall apply for Telecommunication drawings. Telecommunications drawings shall comply with the Level 1 drawing requirements outlined in Sections 4 to 8.

Specific requirements for the Telecommunications Discipline are set out in the sections below.

11.1.1 Telecommunications Drawing Types

There are four types of Telecommunication Disciplines:

- Operational Control Systems (OCS)
- Information Technology (IT) Systems
- VicTrack (VT) Communications
- Ticketing Systems

The below table outlines Typical Drawing Types which may be produced throughout project delivery which will be inserted in 'Title 2' of the drawing title block for this discipline. The table also outlines Drawing Type which shall be updated to 'As-Built' status and submitted to DMS.

Table 14 Telecommunications Drawing Types

Design Package	Drawing Type	As-Built Required	Comments
Information Technology (IT) Systems	Network Cable Plans	Y	
Information Technology (IT) Systems	Network Schematic Diagrams	Y	
Information Technology (IT) Systems	Overall Block Diagram	Y	
Information Technology (IT) Systems	Overview Schematic	Y	
Information Technology (IT) Systems	System Interconnect – Block Diagrams	Y	
Information Technology (IT) Systems	System Interconnect – Schematic Diagrams	Y	
Information Technology (IT) Systems	System Wiring Detail	Y	
Information Technology (IT) Systems	Containment Layout	Y	
Information Technology (IT) Systems	Internal Layout and Arrangements for Equipment Enclosures	Y	
Information Technology (IT) Systems	Rack Elevations/Rack Face Layouts for Equipment Cabinets	Y	
Information Technology (IT) Systems	Miscellaneous	Y	
Information Technology (IT) Systems	Communications Equipment Room/Hut Drawings including Rack Layouts	Y	
Information Technology (IT) Systems	ARTO Staff Computers	Y	
Information Technology (IT) Systems	ARTO Internet Access	Y	

Design Package	Drawing Type	As-Built Required	Comments
Information Technology (IT) Systems	General Telephone and Data Services (MTM Intranet, V/Line Vnet)	Y	
Information Technology (IT) Systems	Telephony – Voice Logging	Y	
Information Technology (IT) Systems	Telephony – ACOM	Y	
Information Technology (IT) Systems	Cable Network Maps	Y	
Information Technology (IT) Systems	Cable Pathway Plan	Y	
Information Technology (IT) Systems	Cable Schedule System Architecture	Y	
Information Technology (IT) Systems	Central Control and Monitoring Systems	Y	
Information Technology (IT) Systems	Communication Outlets Plan	Y	
Information Technology (IT) Systems	Equipment Room Layout	Y	
Information Technology (IT) Systems	Cover Sheet	Y	
Information Technology (IT) Systems	Index Sheet	Y	
Information Technology (IT) Systems	Legend	Y	
Operational Control Systems (OCS)	Cable Network Maps	Y	
Operational Control Systems (OCS)	Cable Pathway Plan	Y	
Operational Control Systems (OCS)	Cable Schedule System Architecture	Y	
Operational Control Systems (OCS)	Central Control and Monitoring Systems	Y	
Operational Control Systems (OCS)	Communication Outlets Plan	Y	
Operational Control Systems (OCS)	Equipment Room Layout	Y	
Operational Control Systems (OCS)	Cover Sheet	Y	
Operational Control Systems (OCS)	Index Sheet	Y	
Operational Control Systems (OCS)	Legend	Y	
Operational Control Systems (OCS)	Network Schematic Diagrams	Y	
Operational Control Systems (OCS)	Overall Block Diagram	Y	

Design Package	Drawing Type	As-Built Required	Comments
Operational Control Systems (OCS)	Overview Schematic	Y	
Operational Control Systems (OCS)	System Interconnect – Block Diagrams	Y	
Operational Control Systems (OCS)	System Interconnect – Schematic Diagrams	Y	
Operational Control Systems (OCS)	System Wiring Detail	Y	
Operational Control Systems (OCS)	Containment Layout	Y	
Operational Control Systems (OCS)	Internal Layout and Arrangements for Equipment Enclosures	Y	
Operational Control Systems (OCS)	Rack Elevations/Rack Face Layouts for Equipment Cabinets	Y	
Operational Control Systems (OCS)	Miscellaneous	Y	
Operational Control Systems (OCS)	Security Control – SPOT	Y	
Operational Control Systems (OCS)	Security Control – TNT	Y	
Operational Control Systems (OCS)	Security Control – TIAS	Y	
Operational Control Systems (OCS)	Security Control – DISPLAN	Y	
Operational Control Systems (OCS)	CCTV FLS Wiring	Y	
Operational Control Systems (OCS)	CCTV Coverage Plan	Y	
Operational Control Systems (OCS)	CCTV Camera Schedule	Y	
Operational Control Systems (OCS)	Communications Equipment Room/Hut Drawings including Rack Layouts	Y	
Operational Control Systems (OCS)	Customer Help Points	Y	
Operational Control Systems (OCS)	Customer Information Services (CIS) System	Y	
Operational Control Systems (OCS)	Passenger Information – PRIDE	Y	
Operational Control Systems (OCS)	Customer Network Diagrams	Y	
Operational Control Systems (OCS)	Digital Platform Clocks	Y	
Operational Control Systems (OCS)	Fire Alarms	Y	
Operational Control Systems (OCS)	Hearing Loop (HL)	Y	

Design Package	Drawing Type	As-Built Required	Comments
Operational Control Systems (OCS)	Lifts Services including Monitoring Alarms, CCTV, Emergency Buttons	Y	
Operational Control Systems (OCS)	Passenger Information Display Systems (PIDS)	Y	
Operational Control Systems (OCS)	Public Address System (PA)	Y	
Operational Control Systems (OCS)	PA Speaker and AFIL Wiring	Y	
Operational Control Systems (OCS)	Single Person Operated Train Platform Equipment at Curved Platforms (SPOT)	Y	
Operational Control Systems (OCS)	SmartBus Systems	Y	
Operational Control Systems (OCS)	Radio – Portables (Driver Radio)	Y	
Operational Control Systems (OCS)	Radio – RST Base Site	Y	
Operational Control Systems (OCS)	Radio – Storno Base Site	Y	
Operational Control Systems (OCS)	Radio – Omni RST Base Site	Y	
Operational Control Systems (OCS)	Radio – TAIT Base Site	Y	
Operational Control Systems (OCS)	Radio – MCAR	Y	
Operational Control Systems (OCS)	Radio – Central Radio Equipment	Y	
Operational Control Systems (OCS)	Radio – Digital Train Radio Systems (DTRS)	Y	
Operational Control Systems (OCS)	Power – UPS (Power Supply)	Y	
Operational Control Systems (OCS)	Power – Battery Backup	Y	
Operational Control Systems (OCS)	Train Control and Management Systems (TCMS)	Y	
Operational Control Systems (OCS)	Train Information (Metrol) – FMP	Y	
Operational Control Systems (OCS)	Train Information (Metrol) – RTPOTS	Y	
Operational Control Systems (OCS)	Train Information (Metrol) – TIAS	Y	
Operational Control Systems (OCS)	Network Cable Plans	Y	
Ticketing Systems	Cable Network Maps	Y	
Ticketing Systems	Cable Pathway Plan	Y	
Ticketing Systems	Cable Schedule System Architecture	Y	

Design Package	Drawing Type	As-Built Required	Comments
Ticketing Systems	Central Control and Monitoring Systems	Y	
Ticketing Systems	Communication Outlets Plan	Y	
Ticketing Systems	Equipment Room Layout	Y	
Ticketing Systems	Cover Sheet	Y	
Ticketing Systems	Index Sheets	Y	
Ticketing Systems	Key Plan	Y	Not Required can be added onto Cover sheet if space permits
Ticketing Systems	Legend	Y	
Ticketing Systems	Network Cable Plans	Y	
Ticketing Systems	Network Schematic Diagrams	Y	
Ticketing Systems	Overall Block Diagram	Y	
Ticketing Systems	Overview Schematic	Y	
Ticketing Systems	System Interconnect – Block Diagrams	Y	
Ticketing Systems	System Interconnect – Schematic Diagrams	Y	
Ticketing Systems	System Wiring Detail	Y	
Ticketing Systems	Containment Layout	Y	
Ticketing Systems	Internal Layout and Arrangements for Equipment Enclosures	Y	
Ticketing Systems	Rack Elevations/Rack Face Layouts for Equipment Cabinets	Y	
Ticketing Systems	Miscellaneous	Y	
Ticketing Systems	Myki	Y	
VicTrack (VT) Communications	System Interconnect – Block Diagrams	Y	
VicTrack (VT) Communications	Cable Network Maps	Y	
VicTrack (VT) Communications	Cable Pathway Plan	Y	
VicTrack (VT) Communications	System Interconnect – Schematic Diagrams	Y	
VicTrack (VT) Communications	Cable Schedule System Architecture	Y	
VicTrack (VT) Communications	Central Control and Monitoring Systems	Y	
VicTrack (VT) Communications	Communication Outlets Plan	Y	
VicTrack (VT) Communications	Equipment Room Layout	Y	
VicTrack (VT) Communications	Cover Sheet	Y	
VicTrack (VT) Communications	Index Sheets	Y	
VicTrack (VT) Communications	Key Plan	Y	Not Required can be added onto Cover sheet if space permits
VicTrack (VT) Communications	Legend	Y	

Design Package	Drawing Type	As-Built Required	Comments
VicTrack (VT) Communications	Network Cable Plans	Y	
VicTrack (VT) Communications	Network Schematic Diagrams	Y	
VicTrack (VT) Communications	System Wiring Detail	Y	
VicTrack (VT) Communications	Overall Block Diagram	Y	
VicTrack (VT) Communications	Overview Schematic	Y	
VicTrack (VT) Communications	Containment Layout	Y	
VicTrack (VT) Communications	Internal Layout and Arrangements for Equipment Enclosures	Y	
VicTrack (VT) Communications	Rack Elevations/Rack Face Layouts for Equipment Cabinets	Y	
VicTrack (VT) Communications	Miscellaneous	Y	
VicTrack (VT) Communications	Local Area Network (LAN)	Y	
VicTrack (VT) Communications	Transmission Network Drawings	Y	
VicTrack (VT) Communications	Transmission Network Maps	Y	

These drawing types may also be used in Title 3 to clarify drawing content.

11.2 Telecommunications Drawing File Format

All Telecommunications Drawings shall be created to allow an output drawing file in AutoCAD. AutoCAD output files can be created using AutoCAD or Revit MEP.

11.2.1 AutoCAD

The version of AutoCAD shall be in accordance with Table 1.

AutoCAD Titleblocks and resource files can be found on the DMS web site.

11.2.2 Revit

Revit Titleblocks and resource files can be found on the DMS website, under the Documents Vault/Templates and Standards.

11.3 Telecommunications Drawing File Setup

11.3.1 AutoCAD

AutoCAD Drawing Templates are located on the DMS website in the Documents Vault/ Templates and Standards and shall be used for Telecommunications Drawings created in AutoCAD.

The Drawing Templates include:

- Line Type File, VicTrack.lin
- Shape Files, VicTrack.shp and VicTrack.shx
- Titleblocks. The Titleblock is for Sheet Sizes: A3. A Titleblock shall be inserted at 0, 0 in the CAD file.
- Attributes are associated with each Titleblock and shall be inserted at 0, 0 in the CAD file. The following applies to the Telecommunications templates:
- All objects have been created Bylayer and Bycolor to allow an object to inherit a selected colour;
- The .lin files and templates shall be directed in AutoCAD;
- The Directory paths for all Drawing Templates shall be set to enable the files to load correctly and to enable AutoCAD to locate the templates.

Refer to AutoCAD User Manual for help on the commands: Bylayer, Bycolor, Path, Polyline, Line Type Scale (LTS), Block, Explode, Viewport, Paper Space, and Model Space.

11.3.2 Revit

The Building Services Revit Drawing Template is located on the DMS website in the Documents vault/ Templates and Standards and shall be used for Telecommunications Drawings created in Revit.

The Revit Template includes:

- A3 Titleblock
- Dimension Styles
- Line Styles
- Text Styles
- Export Title Parameters
- Export to DWG mapping

11.4 Drawing Content

11.4.1 Line Styles

Line Styles are detailed in Appendix Q – Layers / Levels.**Error! Reference source not found.**

If additional Line Styles are required, a request shall be registered via the DMS to DMS, via email, for the Line Styles to be supplied by DTP, subject to approval by DTP.

11.4.2 Layers

11.4.3 Block/Family

AutoCAD

The Block Libraries that shall be used for Telecommunications Drawings are located on the DMS website in the Documents Vault/Telecommunications Second Level Files/Blocks.

If additional Block Libraries are required, a request shall be submitted to DMS, via email, for the Block Libraries to be supplied by DTP, subject to approval by DTP/DMS.

The following Telecommunication Block Libraries are available on the DMS Website

- Plan Drawings
- Schematic Drawings

Revit

Rail specific Families (components) are located on the DMS website in the Documents Vault/Drawing Templates/Revit Templates

If additional families are required, a request shall be registered via the DMS website link for the Family Libraries to be supplied by DTP, subject to approval to DTP/DMS.

Any Telecommunications family (component) made and used in Drawings must be set to the correct categories and sub categories to ensure correct layer types are applied during export.

When setting up a project in Revit the work sets must be set to the following so the layer export correctly:

- Telecommunications L-
- Telstra services L-Telstra-Services
- Ticketing L-Ticketing
- VIC Track Comms L- VIC Track Comms
- Architectural X-

11.4.4 Settings

The following settings shall be used for all Not to Scale (N.T.S.) Telecommunications Drawings:

- Angle = 0
- Scale = 1

- Grid Settings = 3.5

11.4.5 Revit coordinates settings

The DTP Titleblocks shall be inserted in Revit “sheets” at the shared coordinates point of origin, 0, 0.

11.5 Drawing Set up

11.5.1 Drawing Size

Telecommunication drawings shall be drawn on the DTP A3 drawing sheet and Titleblock. The following drawings shall be exempt from A3 size:

- Customer Network Diagrams
- Network Cable Plans

All other drawings shall be drawn on the DT A3 Titleblock. If drawing sheets other than size A3 are required in order to ensure drawing clarity, refer to Section 4 . 8 .

An index sheet shall be produced for each station or building/structure and located at the beginning of the stations Telecommunications drawing set.

11.5.2 Drawing Colour

The Telecommunications Drawing content shall be drawn in colour as specified in Appendix Q – Layers / Levels.

The Revit Color ID corresponds to an AutoCAD color ID (which matches the VicTrack CTB file).

11.6 Detailed Requirements for Telecommunications Drawing Types

For preparation of Telecommunication documents please refer to the Standard and AS/NZ 4383 Preparation of Documents Used in Electrotechnology – General Requirements.

12 Train Electrical Network Drawing Standards (Level 2)

12.1 Introduction

This Section specifies the discipline specific requirements that shall apply for Train Electrical Network drawings. Train Electrical Network drawings shall comply with the Level 1 drawing requirements outlined in Sections 4 to 8.

Table 15 outlines Typical Drawing Types which may be produced throughout project delivery which will be inserted in 'Title 2' of the drawing title block for this discipline. The table also outlines Drawing Type which shall be updated to 'As-Built' status and submitted to DMS.

The types of Train Electrical Network Disciplines, to be inserted at Title 2 in the Titleblock, are as follows:

- Index Sheet
- Standard Drawings
- Overhead
- Traction Substations
- Industrial Networks
- System Diagrams

The types of Train Electrical Network Drawings are as follows:

Table 15 Train Electrical Network Drawing Types

Design Package	Drawing Type	As-Built Required	Comments
Train Overheads	Cover Sheet	Y	
Train Overheads	Index Sheet	Y	
Train Overheads	Cross Sections	Y	
Train Overheads	Layouts	Y	
Train Overheads	Overline Bridge Profiles	Y	
Train Overheads	Standard Drawings	Y	
Train Overheads	Switch and Feeder Detail	Y	
Train Traction Substations	Conduit and Pit Plans	Y	
Train Traction Substations	Earthing Layouts	Y	
Train Traction Substations	Electrolysis	Y	
Train Traction Substations	Equipment Interconnections	Y	
Train Traction Substations	Equipment Layouts	Y	
Train Traction Substations	Index Sheet	Y	
Train Traction Substations	Logic Diagrams	Y	
Train Traction Substations	SCADA	Y	
Train Traction Substations	Schematic Diagrams	Y	
Train Traction Substations	Single Line Diagrams	Y	
Train Traction Substations	Site Plans/Substation Cable Plans	Y	
Train Traction Substations	Underground Cable Plans	Y	
Train Traction Substations	22kV Single Line Diagrams	Y	
Train Industrial Networks	Conduit and Pit Plans	Y	
Train Industrial Networks	Earthing Layouts	Y	
Train Industrial Networks	Equipment Interconnections	Y	
Train Industrial Networks	Equipment Layouts	Y	

Design Package	Drawing Type	As-Built Required	Comments
Train Industrial Networks	Index Sheet	Y	
Train Industrial Networks	Logic Diagrams	Y	
Train Industrial Networks	SCADA	Y	
Train Industrial Networks	Schematic Diagrams	Y	
Train Industrial Networks	Single Line Diagrams	Y	
Train Industrial Networks	Site Plans	Y	
Train Industrial Networks	Substation Cable Plans	Y	
Train Industrial Networks	Underground Cable Plans	Y	
Train Industrial Networks	22kV Single Line Diagrams	Y	
Train System Diagrams	Index Sheet	Y	
Train System Diagrams	Sectionalising Diagrams 1500V	Y	
Train System Diagrams	Transmission Diagrams 22kV	Y	
Train System Diagrams	System	Y	
Train System Diagrams	Switching	Y	
Train System Diagrams	System Key Diagrams	Y	
Train System Diagrams	1500V	Y	
Train System Diagrams	22kV	Y	
Train System Diagrams	Electrolysis	Y	
Train Overheads	Cover Sheet	Y	
Train Overheads	Index Sheet	Y	
Train Overheads	Cross Sections	Y	
Train Overheads	Layouts	Y	
Train Overheads	Overline Bridge Profiles	Y	
Train Overheads	Standard Drawings	Y	
Train Overheads	Switch and Feeder Detail	Y	
Train Traction Substations	Conduit and Pit Plans	Y	
Train Traction Substations	Earthing Layouts	Y	
Train Traction Substations	Electrolysis	Y	
Train Traction Substations	Equipment Interconnections	Y	
Train Traction Substations	Equipment Layouts	Y	
Train Traction Substations	Index Sheet	Y	
Train Traction Substations	Logic Diagrams	Y	
Train Traction Substations	SCADA	Y	
Train Traction Substations	Schematic Diagrams	Y	
Train Traction Substations	Single Line Diagrams	Y	
Train Traction Substations	Site Plans/Substation Cable Plans	Y	
Train Traction Substations	Underground Cable Plans	Y	
Train Traction Substations	22kV Single Line Diagrams	Y	
Train Industrial Networks	Conduit and Pit Plans	Y	

Design Package	Drawing Type	As-Built Required	Comments
Train Industrial Networks	Earthing Layouts	Y	
Train Industrial Networks	Equipment Interconnections	Y	
Train Industrial Networks	Equipment Layouts	Y	
Train Industrial Networks	Index Sheet	Y	
Train Industrial Networks	Logic Diagrams	Y	
Train Industrial Networks	SCADA	Y	
Train Industrial Networks	Schematic Diagrams	Y	
Train Industrial Networks	Single Line Diagrams	Y	
Train Industrial Networks	Site Plans	Y	
Train Industrial Networks	Substation Cable Plans	Y	
Train Industrial Networks	Underground Cable Plans	Y	
Train Industrial Networks	22kV Single Line Diagrams	Y	
Train System Diagrams	Index Sheet	Y	
Train System Diagrams	Sectionalising Diagrams 1500V	Y	
Train System Diagrams	Transmission Diagrams 22kV	Y	
Train System Diagrams	System	Y	
Train System Diagrams	Switching	Y	
Train System Diagrams	System Key Diagrams	Y	
Train System Diagrams	1500V	Y	
Train System Diagrams	22kV	Y	
Train System Diagrams	Electrolysis	Y	

12.2 Train Electrical Drawing Setup

12.2.1 Train Electrical Drawing File Format

MicroStation shall be used to create all Train Electrical Network drawings. MicroStation Titleblocks and resource files are found on the DMS website the details for which are provided in Section 7.

12.3 Drawing Content

12.3.1 Line Styles

The Line styles are defined in the resource file VicTrack LS_date.rsc that is located on the DMS Website and shall be used for all Train Electrical Network Drawings.

If additional Line Styles are required, a request shall be submitted to DMS, via email, for the Line Styles to be supplied by DTP, subject to approval by DTP/DMS.

12.3.2 Levels

The Levels defined in Appendix Q – Layers / Levels shall be used on Train Electrical Network drawings. The levels have been divided into sections within the description column of the table. Where project specific Levels are required, they shall be in the format T-xxxx.

12.3.3 Cells

Cells are standard symbols used to ensure consistency on Train Electrical Network Drawings. The Cell Library detailed in Table 16 shall be used for all Train Electrical Network Drawing.

Table 16 Train Electrical Network Cell Library

Infrastructure	Cell Library
Train Overheads:	VTE_Train Overhead_ date.cel
Train Traction Substations	VTE_Train Traction_ date.cel
Train Industrial Networks:	VTE_Train Industrial_ date.cel
Train System Diagrams:	VTE_Train System_ date.cel

The date contained in the Cell name listed in Table 16 shall be in the format YYYYMM (e.g. 200608).

The cells in the DTP Library shall be used if available. Only if f additional Cells are required, a request shall be submitted to DMS, via email, for the Cells to be supplied by DTP, subject to approval by DTP/DMS.

All new Cells shall be created using the Levels listed above in Section 12.3.2.

If a Cell requires minor alterations, elements may be dropped from the Cell and amended and once the Cell is amended the Cell shall be regrouped as one entity.

12.3.4 Settings

The following Settings shall be used for all Train Electrical Network Drawings that are “Not to Scale” and denoted “N.T.S”:

- AA=0 (Active angle)
- AS=1 (Active scale)
- UR=1.75 (Unit round off)
- GRID SETTINGS=3.5,2 (Master, Reference)

12.4 Drawing Set Up

12.4.1 Drawing Size

Train Electrical Network drawings shall be drawn on the DTP A3 drawing sheet and Titleblock. The following drawings shall be exempt from A3 size:

- Sectionalising Diagrams Drawing No. 1 and 48
- Train Electrical Network Drawings that contain a scaled Architectural floor plan
- Interconnection Diagram
- Electrical Schematics

If a drawing sheet size other than A3 is required in order to ensure drawing clarity, refer to Section 4.8 Drawing Size.

12.4.2 Drawing Colour

Drawing shall be in black and white as per the requirements of Section 3.4.1 PDF Colour. Only the following drawing types are excepted and can have a colour PDF output:

- Sectionalising Diagram;
- System Diagram; and
- Electrolysis Diagrams.

12.4.3 Overhead Train Electrical Drawing Numbers

There are generally 2 types of overhead drawings:

1. Site-Specific Drawings, e.g. cross-sections, layouts, etc., and
2. General Drawings, e.g. General Assembly Drawings, Part Drawings, etc.

Site Specific Drawings shall be allocated drawing numbers as described in Section 5.2 of this document.

General Drawings shall be given a new number in the form of SND_E1234. Existing drawings if revised shall retain their current numbers to avoid conflicts with material cross-referencing and scheduling.

12.4.4 Multiple Sheet Drawing

The following Train Electrical Network drawings may be Multiple Sheet Drawings:

- Substation Cable Plans
- Overhead Cross Sections

Refer to Section 5.7.2 Multiple Sheet Drawing for details on Multi Sheet drawing format.

12.5 Submission of Drawings to DMS

Train Electrical Network drawings shall be submitted in accordance with the requirements outlined in Section 3.2 with the exception that the following drawing types shall be submitted in colour, rather than black and white:

- Sectionalising diagrams
- System Diagram
- Electrolysis drawings

13 Architectural Discipline Standards (Level 2)

13.1 Introduction

This Section specifies the discipline specific requirement that shall apply for Architectural drawings. Architectural drawings shall also comply with the Level 1 drawings requirements outlined in Sections 4 to 8.

Specific requirements for Architectural discipline are set out in the sections below.

13.1.1 Architectural Drawing Types

Table 17 below outlines Typical Drawing Types which may be produced throughout project delivery which will be inserted in 'Title 2' of the drawing title block for this discipline. The table also outlines Drawing Type which shall be updated to 'As-Built' status and submitted to DMS.

Table 17 Architectural Drawing Types

Design Package	Drawing Type	As-Built Required	Comments
Architectural	Cover Page	Y	
Architectural	Index Sheet	Y	
Architectural	Site Plans	N	Not Required
Architectural	Grid Set Out Plan	N	Not Required
Architectural	Wall Type, Symbol and Abbreviation Legend	Y	
Architectural	Station Precinct Plans (Key Plans) – Platform, Station Building, Forecourt	N	Not Required
Architectural	Floor Plans	Y	
Architectural	Reflected Ceiling Plans	Y	
Architectural	Roof Plans	Y	
Architectural	Elevations (N,S,E,W)	Y	
Architectural	Sections	Y	
Architectural	Enlarged Plans (Toilets, Service Areas, etc.)	Y	
Architectural	Internal Elevations	Y	
Architectural	Wall Sections	Y	
Architectural	Lifts	Y	
Architectural	Ramps and Stairs Specific Plans	Y	
Architectural	Elevations	Y	
Architectural	Sections and Details	Y	
Architectural	Facades – Specific Plans	Y	
Architectural	Facades – Elevations	Y	
Architectural	Facades – Sections and Details	Y	
Architectural	Typical Details	Y	
Architectural	Special Feature	Y	
Architectural	Joinery – Specific Plans	Y	
Architectural	Joinery – Elevations	Y	
Architectural	Joinery – Sections and Details	Y	

Design Package	Drawing Type	As-Built Required	Comments
Architectural	Door, Window, Wall Schedules	Y	
Architectural	FF+E (Furniture, Fixtures and Equipment)	Y	
Architectural	Schedules	Y	
Architectural	Visualisations/ 3D Rendering	N	Not Required

Table 18 Landscape Drawing Types

Design Package	Drawing Type	As-Built Required	Comments
Landscape	Cover Sheet	Y	Not Required if Index sheet can be combined with Cover Sheet where space permits
Landscape	Index Sheet	Y	
Landscape	General Notes and Legend	Y	Not Required if Legend and General Notes combined onto 1 drawing where space permits
Landscape	Locality Plan	Y	Not Required if This information can be added onto the Cover Sheet or Key Plan where space permits
Landscape	Key Plan	Y	
Landscape	Landscape Plans	Y	
Landscape	Detail Planting Plans	Y	
Landscape	Planting Schedules	Y	
Landscape	Material Schedules	Y	
Landscape	Typical Cross Sections	Y	
Landscape	Typical Details	Y	
Landscape	Rock or Retaining Wall Treatments	Y	

13.2 Architectural Drawing File Format

For rail submissions all Architectural Drawings shall be created to allow an output drawing file in AutoCAD. AutoCAD output files can be created using AutoCAD or Revit Architecture.

For road submissions Architectural Landscape drawing may be produced and supplied in AutoCAD or MicroStation.

13.2.1 AutoCAD

The version of AutoCAD shall be in accordance with Table 2.

AutoCAD Titleblocks and resource files can be found on the DMS web site.

13.2.2 Revit

Revit Architecture Titleblocks and resource files can be found on the DMS web site, under Documents and Drawings /Templates and Standards.

13.2.3 MicroStation

Road submission Architectural Landscape drawings shall follow the MicroStation settings outlines in Section 4.6.

13.3 Architectural Drawing File Set-up

13.3.1 AutoCAD

AutoCAD Drawing Templates are located on the DMS website in the PTV Documents Vault/ AutoCAD Templates and shall be used for Architectural Drawings created in AutoCAD.

The Drawing Templates include:

- Line Type File, VicTrack-Arch-linetypes.lin
- Shape Files, VicTrack.shp and VicTrack.shx
- VicTrack - DMS Standards Layer.las

If the template identified in Table 17and the DMS Standards Architectural Template has not been used to create the AutoCAD drawing, then **VicTrack- DMS Standards Layer.las** can be imported to bring in the Architectural layer names according to the DMS Standards. This is done by importing the **VicTrack- DMS Standards Layer.las** via the Layer States Manager in AutoCAD.

The following applies to the Architectural templates:

- All objects have been created Bylayer and Bycolor to allow an object to inherit a selected colour
- The .lin files and templates shall be directed in AutoCAD
- The Directory paths for all Drawing Templates shall be set to enable the files to load correctly and to enable AutoCAD to locate the templates.

Refer to AutoCAD User Manual for help on the commands: Bylayer, Bycolor, Path, Polyline, Line Type Scale (LTS), Block, Explode, Viewport, Paper Space, and Model Space.

13.3.2 Revit

The Architectural Revit Drawing Template is located on the DMS website in the Documents and Drawings /Templates and Standards/ folder and shall be used for Architectural drawings created in Revit.

The Revit Template includes:

- A3 Titleblock
- Dimension Styles
- Line Styles
- Text Styles
- Export Title Parameters
- Export to DWG mapping

13.4 Drawing Content

13.4.1 Layers

The Layers defined in Appendix Q – Layers / Levels shall be used on Architectural drawings. The layers have been divided into sections within the description column of the table.

Where project specific layers are required shall be in the format L-A-xxxx. A-C-xxxx, A-E-xxxx, A-I-xxxx, A-L-xxxx, A-M-xxxx, A-P-xxxx, A-S-xxxx.

13.4.2 Block/Family

AutoCAD

The Block Libraries that shall be used for Architectural Drawings are located on the DMS website in the Documents Vault /Architectural Second Level Files/Blocks.

If additional Block Libraries are required, a request shall be registered via the DMS to DMS, via email, for the Block Libraries to be supplied by DTP, subject to approval by DTP.

If a Block requires minor alterations, the Block may be Exploded and amended and, upon completion, the Block shall be regrouped as one entity.

Revit

Any Architectural family (component) made and used in Drawings must be set to the correct categories and sub categories to ensure correct layer types are applied during export.

13.4.3 Settings

The following settings shall be used for all Not to Scale (N.T.S.) Architectural Drawings:

- Angle = 0
- Scale = 1
- Grid Settings = 3.5

13.4.4 Revit Coordinates settings

The DTP Titleblocks shall be inserted in Revit “sheets” at the shared coordinates point of origin, 0, 0.

13.5 Drawing Set Up

13.5.1 Drawing Colour

The on-screen drawing colour shall be in accordance with the Layers specification above in Section 1 3 . 4 . 1

If additional Colours are required, a request shall be registered to DMS, via email, for the Colours to be supplied by DTP, subject to approval by DTP.

The Revit Color ID corresponds to an AutoCAD color ID (which matches the VicTrack CTB file).

Drawing shall be in black and white as per the requirements of Section 3.4.1 PDF Colour. Only the following drawing types are excepted and can have a colour PDF output:

- Landscape

14 Building Services Discipline Standards (Level 2)

14.1 Introduction

This Section specifies the discipline specific requirements that shall apply for Building Services drawings. Building Services drawings shall also comply with the Level 1 drawing requirements outlined in Section 4 to 8.

Specific requirements for the Building Services discipline are set out in the sections below.

14.1.1 Building Services Drawing Types

Table 19 below outlines Typical Drawing Types which may be produced throughout project delivery which will be inserted in 'Title 2' of the drawing title block for this discipline. The table also outlines Drawing Type which shall be updated to 'As-Built' status and submitted to DMS.

Table 19 Building Services Drawing Types

Design Package	Drawing Type	As-Built Required	Comments
Building Services I.C.T	Cover/ Index Sheet	Y	
Building Services I.C.T	Building Services I.C.T Plans	Y	
Building Services I.C.T	Building Services I.C.T Details	Y	
Lighting	Cover/ Index Sheet	Y	
Lighting	Lighting	Y	
Fire Protection	Cover/ Index Sheet	Y	
Fire Protection	Fire Protection Plans	Y	
Fire Protection	Fire Protection Details	Y	
Fire Protection	Fire Detection Schematics	Y	
Hydraulics	Cover / Index Sheet	Y	
Hydraulics	Hydraulics Legend	Y	
Hydraulics	Hydraulics Layout Plan	Y	
Hydraulics	Hydraulics Details	Y	
Lifts	Index Sheet	Y	
Lifts	Lifts	Y	
Mechanical (Building Internal)	Mechanical Legend	Y	
Mechanical (Building Internal)	Mechanical Details	Y	
Mechanical (Building Internal)	Mechanical Layout Plans	Y	
Power (Building Internal)	Electrical Legend	Y	
Power (Building Internal)	Electrical Layout Plans	Y	
Power (Building Internal)	Electrical Schematics	Y	
Security	Security	Y	
Building Water Supply	Water Supply, Solar Water & Storm Water Layout Plans	Y	
Building Water Supply	Water Supply, Solar Water & Storm Water Details	Y	
External Lighting	Lighting Schematics	Y	
External Lighting	Lighting Layout	Y	
External Lighting	Lighting Schedule	Y	
External Lighting	Pit Schedule	Y	

Design Package	Drawing Type	As-Built Required	Comments
External Lighting	Lighting Power Diagrams	Y	
External Lighting	Lighting Conduit Layout	Y	
External Lighting	Lighting Details	Y	

14.2 Building Services Drawing File Format

All Building Services Drawings shall be created to allow an output drawing file in AutoCAD. AutoCAD output files can be created using AutoCAD or Revit MEP.

14.2.1 AutoCAD

The version of AutoCAD shall be in accordance with Table 4.1.

AutoCAD Titleblocks and resource files can be found on the DMS web site.

14.2.2 Revit

Revit Titleblocks and resource files can be found on the DMS web site, under Documents and Drawings /Templates and Standards.

14.3 Building Services Drawing File Set-up

14.3.1 AutoCAD

The legend and cover sheet for building services and ICT (contained on the DMS website in the Documents Vault/AutoCAD Templates) depicts allowable line styles, shapes, text types and other relevant Drawing files. When creating a new Drawing, the legend block should be imported into the new Drawing and the relevant files used.

The Drawing Templates include:

- Line Type File, VicTrack.lin
- Shape Files, VicTrack.shp and VicTrack.shx
- Titleblocks. There are Titleblock has been created for Sheet Sizes: A3, A2, A1, B1 and A0. A Titleblock shall be inserted at 0, 0 in the CAD file.
- Attributes have been created for each Titleblock that shall be inserted at 0, 0 in the CAD file.

The following applies to the Building Services templates:

- All objects have been created Bylayer and Bycolor to allow an object to inherit a selected colour;
- The .lin files and templates shall be directed in AutoCAD or Revit
- The Directory paths for all Drawing Templates shall be set to enable the files to load correctly and to enable AutoCAD to locate the templates.

Refer to AutoCAD User Manual for help on the commands: Bylayer, Bycolor, Path, Polyline, Line Type Scale (LTS), Block, Explode, Viewport, Paper Space, and Model Space.

14.3.2 Revit

The Building Services Revit Drawing Template is located on the DMS website in the Documents and Drawings /Templates and Standards/ and shall be used for Building Services Drawings created in Revit.

The Revit Template includes:

- A3 Titleblock
- Dimension Styles
- Line Styles
- Text Styles
- Export Title Parameters
- Export to DWG mapping

14.4 Drawing Content

14.4.1 Layers

The Layers defined in Appendix Q – Layers / Levels shall be used on Building Services drawings. The layers have been divided into sections within the description column of the table.

14.4.2 Block/ Family

AutoCAD

The Block Libraries that shall be used for Building Services Drawings are located on the DMS website in the Documents Vault/Telecommunications Second Level Files/Blocks.

If additional Block Libraries are required, a request shall be registered to DMS, via email, for the Block Libraries to be supplied by DTP, subject to approval by DTP.

The following Building Services Block Libraries are available on the DMS Website:

- Electrical Services
- Fire Protection
- Hydraulic Services
- Mechanical Services

Revit

Any Building Services family (component) made and used in Drawings must be set to the correct categories and sub categories to ensure correct layer types are applied during export.

When setting up a project in Revit the work sets must be set to the following so the layer export correctly:

- Electrical B-E-
- Fire Protection B-F-
- Hydraulic B-H-
- Mechanical B-M-
- Architectural X-

14.4.3 Settings

The following settings shall be used for all Not to Scale (N.T.S.) Building Services Drawings:

- Angle = 0
- Scale = 1
- Grid Settings = 3.5

14.4.4 Revit Coordinate settings

The DTP Titleblocks shall be inserted in Revit “sheets” at the shared coordinates point of origin, 0, 0.

14.5 Drawing Set Up

14.5.1 Index Sheet

An Index Sheet shall be produced for each station or building/structure and located at the beginning of the stations Building Services drawing set. A sub-index sheet for each Building Services drawing type should also be included at the beginning of each sub-drawing type.

14.5.2 Drawing Colour

The Building Services Drawing content shall be drawn in colour as specified in **Error! Reference source not found.**layer table in Appendix Q – Layers / Levels.

15 Structural Discipline Standards (Level 2)

15.1 Introduction

This Section specifies the discipline specific requirements that shall apply for Building Structural drawings. Structural drawings shall also comply with the Level 1 drawings requirements outlined in Sections 4 to 8.

Specific requirements for Structural discipline are set out in the sections below. For details on the Civil Structural drawings, please refer to Section 10.

15.1.1 Building Structural Drawing Types

Table 20 below outlines Typical Drawing Types which may be produced throughout project delivery which will be inserted in 'Title 2' of the drawing title block for this discipline. The table also outlines Drawing Type which shall be updated to 'As-Built' status and submitted to DMS.

Table 20 Building Structural Drawing Types

Design Package	Drawing Type	As-Built Required	Comments
Building - Structures	Concrete Beam, Column and Wall Schedules	Y	
Building - Structures	Footing/Foundation Plans, Schedules	Y	
Building - Structures	Framing Plans	Y	
Building - Structures	GA Plans	Y	
Building - Structures	Cover/ Index Sheets	Y	
Building - Structures	Loading Diagrams	Y	
Building - Structures	Sections And Details	Y	
Building - Structures	Steel Member Schedule	Y	
Building - Structures	Structural Elevations	Y	
Building - Structures	Structural Drainage	Y	
Building - Structures	Jointing Details	Y	
Building - Structures	Prestressing Details	Y	
Building - Structures	Construction Sequencing Drawings	N	Not Required. IFC Drawing to be issued to ARTOs only.

15.2 Structural Drawing File Format

15.2.1 Building Structural File Format

All Building Structural Drawings shall be created to allow an output drawing file in AutoCAD. AutoCAD output files can be created using AutoCAD or Revit Structure.

15.2.2 AutoCAD

The version of AutoCAD that shall be as detailed in 4.1. AutoCAD Titleblocks and resource files can be found on the DMS web site.

15.2.3 Revit

Revit Titleblocks and resource files can be found on the DMS website, under Documents and Drawings /Templates and Standards/ .

15.3 Structural Drawing File Setup

15.3.1 AutoCAD

AutoCAD Drawing Templates are located on the DMS Website in the Documents Vault/ AutoCAD Templates and shall be used for Structural Drawings.

The Drawing Templates include:

- Line Type File, VicTrack.lin
- Shape Files, VicTrack.shp and VicTrack.shx
- Titleblocks: There is a Titleblock that has been created for Sheet Size: A3. A Titleblock shall be inserted at 0, 0 in the CAD file.
- Attributes: There are attributes have been created for each Titleblock and they shall be inserted at 0, 0 in the CAD file.

The following applies to the Structural templates:

- All objects have been created Bylayer and Bycolor to allow an object to inherit a selected colour;
- The .lin files and templates shall be directed in AutoCAD or Revit
- The Directory paths for all Drawing Templates shall be set to enable the files to load correctly and to enable AutoCAD to locate the templates.

Refer to AutoCAD User Manual for help on the commands: Bylayer, Bycolor, Path, Polyline, Line Type Scale (LTS), Block, Explode, Viewport, Paper Space, and Model Space.

15.3.2 Revit

The Structural Revit Drawing Template is located on the DMS website in the Documents and Drawings /Templates and Standards/ /Revit Templates folder and shall be used for Structural drawings created in Revit.

The Revit Template includes:

- A3 Titleblock
- Dimension Styles
- Line Styles
- Text Styles
- Export Title Parameters
- Export to DWG mapping

15.4 Drawing Content (AutoCAD)

15.4.1 Layers

The Layers defined in Appendix Q – Layers / Levels shall be used on Structural drawings.

Where project specific levels are required, they shall be in the format S-xxxx(-xxxx).

15.4.2 Linework - Elements

Plans should be drawn as a horizontal section through all structural members immediately above the portion of the structure under consideration. The plan view shall show the columns, walls and beams under which support the floor. These lines shall be broken if the elements terminate below the slab. All supporting elements shall be hatched. Refer to the tables below for further details.

Following are the standard line work requirements that shall be abided by for the development of Structures drawings. Refer to notes that follow tables for additional details.

Table 21 Footing and / or Concrete Profile Plans

Element	Linetype	Lineweight/ Colour	Hatch Required	Element Tag Required	Block / Symbol Required
Building Structures					
Perimeter Outline	Continuous	0.25/Green	N/A	N/A	N/A
Setdown in Slab	Continuous	0.25/Green	N/A	N/A	YES
Penetration in Floor Slab	Continuous	0.25/Green	N/A	N/A	YES
Step Edge in Slab	Continuous	0.25/Green	N/A	N/A	YES

Element	Linetype	Lineweight/ Colour	Hatch Required	Element Tag Required	Block / Symbol Required
Beams - Upstands	Continuous	0.25/Green	N/A	YES	NO
Joint Lines	Divide	0.18/Red	N/A	YES	NO
Slab Soffit Linework	Hidden	0.18/Red	N/A	N/A	N/A
Columns - Over	Continuous	0.25/Green	NO	YES	NO
Columns - Under	Hidden2	0.25/Green	YES	NO	NO
Columns – Under Hatching	Continuous	Grey 8	N/A	N/A	N/A
Walls – Over (precast or insitu)	Continuous	0.25/Green	NO	YES	YES
Walls – Under (precast or insitu)	Hidden	0.25/Red	YES	NO	NO
Walls – Under Hatching (precast or insitu)	Continuous	-	N/A	N/A	N/A
Masonry Walls – Over	Continuous	0.12/White	YES	NO	YES
Masonry Walls – Under	Hidden	0.09/Red	YES	NO	NO
Masonry Walls – Under Hatch	Continuous		N/A	N/A	N/A
Footing Outlines	Continuous	0.18/White	NO	YES	NO
Footing Outlines – Under	Hidden	0.09/Grey (8)	NO	YES	NO
Existing	Continuous	0.09/Red	YES	NO	NO

Element	Linetype	Lineweight/ Colour	Hatch Required	Element Tag Required	Block / Symbol Required
Bridge Structures					
Crossheads/ Columns	Continuous	0.25/Green	NO	NO	NO
Walls	Continuous	0.25/Green	NO	For Wing Walls	NO
Footings/Pile caps	Continuous	0.25/Green	NO	NO	NO
Anti-Slide Blocks	Continuous	0.18/Yellow	NO	NO	NO
Bearing Pedestals	Continuous	0.12/White	NO	YES	NO
Piles	Hidden2	0.05/Grey	NO	NO	NO

Table 22 Reinforcement / Post-Tensioning Plans

Element	Linetype	Lineweight/ Colour	Hatch Required	Element Tag Required	Block / Symbol Required
Building Structures					
Reinforcement – bar	Continuous	0.35/Cyan	N/A	YES	N/A
Ties/Ligatures/ Stirrups	Continuous	0.18/Green	N/A	YES	N/A
Reinforcement/ Ties/Ligatures/ Stirrups – extent line	Continuous	0.12/White	N/A	YES	N/A
Column/Middle Strips	Continuous	0.09/Red	N/A	N/A	N/A
Post-tensioning – tendon (main)	Continuous	0.35/Cyan	N/A	YES	N/A
Post-tensioning – tendon (similar in group)	Continuous	0.05/Grey	N/A	YES	N/A
Post-tensioning – similar extent line	Continuous	0.12/White	N/A	N/A	N/A
Post-tensioning – Live End	Continuous	0.12/White	N/A	N/A	YES
Post-tensioning – Live End with Stressing Pan	Continuous	0.12/White	N/A	N/A	YES
Post-tensioning – Dead End	Continuous	0.35/Cyan	N/A	N/A	YES
Post-tensioning – Intermediate Offset	Continuous	0.35/Cyan	N/A	N/A	YES
Post-tensioning – Coupler	Continuous	0.12/White	N/A	N/A	YES

Table 23 Concrete Sections and Details

Element	Linetype	Lineweight/ Colour	Hatch Required	Element Tag Required	Block / Symbol Required
Building Structures					
Section outlines	Continuous	0.25/Green	N/A	N/A	N/A
Section hidden lines	Hidden	0.18/White	N/A	N/A	N/A
Elevation outlines	Continuous	0.18/Green	N/A	N/A	N/A
Elevation hidden lines	Hidden	0.18/White	N/A	N/A	N/A
Section outlines – beyond	Continuous	0.09/Red	N/A	N/A	N/A
Masonry – Brick	Continuous	0.12/White	YES	NO	NO
Masonry – Block (reinforced and core filled)	Continuous	0.12/White	YES	NO	YES
Masonry – Block (core filled only)	Continuous	0.12/White	YES	NO	YES

Element	Linetype	Lineweight/ Colour	Hatch Required	Element Tag Required	Block / Symbol Required
Masonry – Block (cores not filled)	Continuous	0.12/White	NO	NO	YES
Waterproof membrane	Hidden	0.12/White	N/A	N/A	N/A
Concrete/Sand blinding	Continuous	0.12/White	YES	N/A	N/A
Joint scabble	Continuous	0.12/White	N/A	N/A	YES
Reinforcement bars (lines)	Continuous	0.35/Cyan	N/A	N/A	N/A
Reinforcement bars (donuts)	Continuous	0.35/Cyan	N/A	N/A	N/A
Reinforcement – Mesh/Fabric	Dashed	0.25/Green	N/A	N/A	N/A
Ties/stirrups/ligs, etc.	Continuous	0.18/Yellow Green	N/A	N/A	N/A
Structural steelwork outlines	Continuous	0.09/Red	N/A	N/A	N/A
Existing (if applicable)	Continuous	0.09/Red	YES	N/A	N/A
Ground/earth/ rock/dirt	Continuous	0.12/White	N/A	N/A	YES
Bridge Structures					
Grout/Mortar Pedestal	Continuous	0.12/White	YES	N/A	N/A
Debonding Layer	Continuous	0.18/Yellow	YES	N/A	N/A
Joint Filler	Continuous	0.12/White	YES	N/A	N/A
Reinforcement - PS Tendons	Continuous	0.12/White	N/A	NO	NO
Reinforcement - PT Ducts	Continuous	0.12/White	NO	NO	NO

Element	Linetype	Lineweight/ Colour	Hatch Required	Element Tag Required	Block / Symbol Required
Reinforcement - Couplers	Continuous	0.12/White	NO	NO	NO
Cast in Steelwork	Continuous	0.12/White	NO	NO	NO

Table 24 Concrete Sections and Details

Element	Linetype	Lineweight/ Colour	Hatch Required	Element Tag Required	Block / Symbol Required
Columns	Continuous	0.25/Green OR 0.18/Yellow (If required)	N/A	YES	NO
Trusses	Continuous	0.35/Cyan	N/A	YES	NO
Beams	Continuous	0.35/Cyan	N/A	YES	NO
Rafters	Continuous	0.35/Cyan	N/A	YES	NO
Bracing – Horizontal	Centre	0.18/Red	N/A	YES	NO
Bracing – Vertical	Dashed	0.18/Red	N/A	YES	NO
Purlins	Continuous	0.12/White	N/A	YES	NO

Element	Linetype	Lineweight/ Colour	Hatch Required	Element Tag Required	Block / Symbol Required
Flybracing	Continuous	0.35/Cyan	N/A	YES	NO
Roof/building outlines, gutter outlines	Continuous	0.09/Red	N/A	N/A	N/A
Existing (if applicable)	Continuous	0.09/Red	YES	N/A	NO

Table 25 Steelwork Elevations

Element	Linetype	Lineweight/ Colour	Hatch Required	Element Tag Required	Block / Symbol Required
Column	Continuous	0.35/Cyan	N/A	YES	NO
Beams	Continuous	0.35/Cyan	N/A	YES	NO
Rafters	Continuous	0.35/Cyan	N/A	YES	NO
Trusses	Continuous	0.35/Cyan	N/A	YES	NO
Truss web members	Continuous	0.18/Green	N/A	YES	NO
Bracing	Continuous	0.18/Red	N/A	YES	NO
Girts	Continuous	0.12/Red	N/A	YES	NO
Concrete outlines	Continuous	0.18/Green	N/A	YES	NO

Table 26 Steelwork Sections and Details

Element	Linetype	Lineweight/ Colour	Hatch Required	Element Tag Required	Block / Symbol Required	Layer To Be Drawn On
Outlines – plans and elevations	Continuous	0.18/Yellow	N/A	N/A	N/A	
	Continuous	(0.12/White for inside faces/edge)	N/A	N/A	N/A	
Outlines – sections	Continuous	0.25/Green	N/A	N/A	N/A	
	Continuous	(0.18/Yellow for small sections)	N/A	N/A	N/A	
Centre lines	Centre	0.09/Red	N/A	N/A	N/A	
Bolts – plans	Continuous		N/A	N/A		
Bolts – elevation/ section	Continuous		N/A	N/A		
Gauge lines	Continuous	0.09/Red	N/A	N/A	N/A	

Element	Linetype	Lineweight/ Colour	Hatch Required	Element Tag Required	Block / Symbol Required	Layer To Be Drawn On
Hidden linework (behind)	Dashed/ Hidden	0.12/White	N/A	N/A	N/A	
Concrete outlines	Continuous	0.25/Green	YES	N/A	N/A	
Existing (if applicable)	Continuous	0.05/Grey	YES	N/A	N/A	

Table 27 Timber Plans

Element	Linetype	Lineweight/ Colour	Hatch Required	Element Tag Required	Block / Symbol Required	Layer To Be Drawn On
Bearers	Continuous	0.18/Red	N/A	YES	NO	
Bottom chord brace/hangar	Continuous	0.18/Green	N/A	YES	NO	
Cable truss	Continuous	0.18/Yellow	N/A	YES	NO	
Ceiling joists	Continuous	0.12/White	N/A	YES	NO	
Fascia/barge	Dashed	0.12/White	N/A	YES	NO	
Hanging beams	Continuous	0.18/Red	N/A	YES	NO	
Joists	Continuous	0.18/White	N/A	YES	NO	
Purlins	Continuous	0.18/Red	N/A	YES	NO	
Rafters	Continuous	0.25/Green	N/A	YES	NO	
Ridge/hips	Centre	0.09/Red	N/A	YES	NO	
Roof Outlines	Continuous	0.09/Red	N/A	N/A	N/A	
Speedbrace	Divide	0.12/White	N/A	YES	NO	
Struts/fan struts	Continuous	0.18/Red	N/A	YES	NO	
Trusses	Divide	0.25/Green	N/A	YES	NO	
Underpurlins	Continuous	0.2/White	N/A	YES	NO	
Vertical bracing	Dashed	0.18/Red	N/A	YES	NO	

Table 28 Timber Sections and Details

Element	Linetype	Lineweight/ Colour	Hatch Required	Element Tag Required	Block / Symbol Required	Layer To Be Drawn On
Outlines – plans and elevations	Continuous	0.18/Green	N/A		YES	
Outlines – sections	Continuous	0.18/Green	N/A		YES	
Outlines – end view	Continuous	0.18/Green	N/A		YES	

Table 29 General Arrangement Plans

Element	Linetype	Lineweight/ Colour	Hatch Required	Element Tag Required	Block / Symbol Required
Deck Outline	Continuous	0.25/Green	N/A	N/A	N/A
Deck Hatch	Continuous	0.05/Grey	N/A	N/A	N/A
Parapet/Barriers (On-Str)	Continuous	0.18/Yellow	NO	NO	NO
Barrier (Off-Str)	Continuous	0.12/White	NO	NO	NO

Element	Linetype	Lineweight/ Colour	Hatch Required	Element Tag Required	Block / Symbol Required
Abutment/App Slab - visible	Continuous	0.18/Yellow	NO	NO	NO
Abutment/App Slab - hidden	Hidden	0.12/White	NO	NO	NO
Pier/Footing	Hidden	0.18/Yellow	NO	NO	NO

Element	Linetype	Lineweight/ Colour	Hatch Required	Element Tag Required	Block / Symbol Required
Formation/Road	Continuous	0.12/White	NO	N/A	NO
Beaching	Continuous	0.05/Grey	YES	N/A	NO

Table 30 General Arrangement Elevations and Sections

Element	Linetype	Lineweight/ Colour	Hatch Required	Element Tag Required	Block / Symbol Required
Beams/Girders	Continuous	0.18/Yellow	NO	NO	NO
Parapet/Barriers (On-Str/Sect)	Continuous	0.18/Yellow	YES	NO	NO
Barrier (Off-Str)	Continuous	0.12/White	NO	NO	NO
Railing	Continuous	0.12/White	NO	NO	NO
Wing Walls/End Posts	Continuous	0.18/Yellow	NO	NO	NO
Abutment/Pier	Continuous	0.18/Yellow	NO	NO	NO
Piles/Footings	Hidden	0.12/White	NO	NO	NO
REW Nails/Bolts	Continuous	0.12/White	NO	NO	NO
Beaching	Continuous	0.05/Grey	YES	N/A	NO
Deck/Kerbs	Continuous	0.25/Green	NO	N/A	NO
Wearing Surface	Continuous	0.05/Grey	NO	N/A	NO

Table 31 Setout / Layout Plans and Elevations

Element	Linetype	Lineweight/ Colour	Hatch Required	Element Tag Required	Block / Symbol Required
Pile/Caisson	Continuous	0.25/Green	NO	YES	NO
Footing	Continuous	0.25/Green	NO	YES	NO
Beam	Continuous	0.25/Green	NO	YES	NO
Bearing/Pedestal	Continuous	0.25/Green	NO	YES	For Pot Bearings
Parapet	Continuous	0.25/Green	NO	YES	NO
Architectural/Noise Panel	Continuous	0.25/Green	NO	YES	NO
Railing	Continuous	0.12/White	NO	NO	NO
Existing Structure	Dashed	0.05/Grey	NO	NO	NO
Adjacent Structures	Continuous	0.05/Grey	NO	NO	NO

15.4.3 Call-Out Lines (Leaders)

Reinforcement in section is to be called up with arrows to longitudinal reinforcement and enclosing circles to transverse reinforcement as shown in Appendix H.

15.4.4 Blocks (AutoCAD)

The Block Libraries that shall be used for Structural Drawings are located on the DMS Website in the Documents Vault/Structural Second Level Files/Blocks.

If additional Block Libraries are required, a request shall be registered to DMS, via email, for the Block Libraries to be supplied by DTP, subject to approval by DTP.

If a Block requires minor alterations, the Block may be Exploded and amended and, upon completion, the Block shall be regrouped as one entity.

15.4.5 Element Notations

The element notations as outlined in Table 32 to Table 37 shall be used.

Table 32 Footing and/or Concrete Profile Plans

Element	Tag	Block / Symbol
Pad Footing	PF* (i.e. PF1)	N/A
Strip Footing	SF*	N/A
Footing Beam	FB*	N/A
Ground Beam	GB*	N/A
Bored Pier	BP* (tag to be placed on 45-degree angle)	N/A
Pile	P* (tag to be placed on 45-degree angle)	N/A
Pile Cap	PC*	N/A
Column - Concrete	C**unless called up using grid referencing (tag to be placed on 45-degree angle)	N/A
Column Over – Concrete	C**NOTE: Column to be noted as over i.e. C10 OVER	N/A
Wall – Concrete	W1 OR Block/Symbol (By type)	YES
Wall Over - Concrete	W1 NOTE: Wall to be noted as over e.g. W1 OVER	N/A
Slab Thickness	N/A	YES
Beam (Downturn)	Beam no. – e.g. 4B3 If reinforcement shown in beam schedule or elevation (Beam depth & width to be shown in beam schedule or on sections & details) OR If reinforcement shown on plan (Depth x Width) BEAM e.g. 4B3 - 600 x 300 BEAM	N/A N/A

Element	Tag	Block / Symbol
Beam (Upstand)	Beam no. – e.g. 4B3	N/A

Element	Tag	Block / Symbol
	If reinforcement shown in beam schedule or elevation (Beam depth & width to be shown in beam schedule or on sections & details) OR If reinforcement shown on plan (Depth x Width) UPSTAND BEAM e.g. 4B3 - 600 x 300 UPSTAND BEAM	N/A
Header Beam	HB*	N/A
Band	(Depth x Width) BAND e.g. 300 x 1200 BAND	N/A
Sawcut Joint	SCJ	N/A
Expansion Joint	EJ	N/A
Keyed Joint	KJ	N/A
Isolation Joint	IJ	N/A
Dowel Joint	DJ	N/A
Control Joint	CJ	N/A
Stair Landing Flight	ST** (stair number to match architect's if known) L* (for stair elevations) F* (for stair elevations)	N/A N/A
Retaining Wall	RW*	N/A
Masonry Wall Brick Block		YES YES

Element	Tag	Block / Symbol
Abutment	AB*	N/A
Pier	PR*	N/A

Table 33 Reinforcement Plans

Type Or Grade	Notation
Plain round bars structural grade	R
Hard drawn deformed wire fabric	SL or RL
Hard drawn steel wire	W
Hot rolled deformed bars, grade 500 MPa	N

The number following the bar grade symbol represents the nominal bar diameter in millimetres. The figure following the fabric symbol SL or RL is the reference number for the fabric.

Table 34 Reinforcement Examples

Example	Notation
To describe on a plan view, 28 number hot rolled deformed bars (grade 500MPa) of size 24mm diameter to be placed at 225mm centres in the top of a slab, the notation shall be:	28N24 – 225 or N24 – 225 (if the number of bars are not required to be nominated). The reinforcement is to be shown on the top reinforcement plan.
To describe on a plan view, SL82 mesh to be located in the top of a slab, the notation is:	SL82. The reinforcement is to be shown on the top reinforcement plan.
To describe 8mm trench mesh:	L8TM
To describe on a plan view 12mm diameter ties/ligatures (grade 500MPa) at 300 centres.	N12 LIGS-300 The reinforcement is to be shown on the bottom reinforcement plan
For reinforcement that is laid in the opposite order to that of the Bar Laying Sequence, then the bar tags are to be prefixed with the following: LL – denotes lower layer UL – denotes upper layer	N24-225 LL

Table 35 Steelwork Plans

Element	Tag	Block / Symbol
Column	SC* (tag to be placed on 45-degree angle)	N/A
Hanger	H* (tag to be placed on 45-degree angle)	N/A
Beam – Floor	(Floor level)SB* i.e. 4SB1	N/A
Beam - Roof	RSB*	N/A
Bracing - Horizontal	BR*	N/A
Bracing – Vertical	VB*	N/A
Bracing – Wall	WB*	N/A
Flybracing	FB*	N/A
Purlins	P*	N/A
Girts	G*	N/A
Outriggers	OR*	N/A
Struts	S*	N/A
Rafter	R*	N/A
Fascia Truss	FT**	N/A
Fascia Purlin	FP*	N/A
Truss	T**	N/A
Stair	ST**	N/A
Stair – Stringer	SS*	N/A
Portal Frame	PF*	N/A
Tie Beam	TB*	N/A

Table 36 Steelwork Examples

Example	Notation
A universal column section of 310 x 310 x 98kg/m	310 UC 98
A universal beam section of 610 x 230 x 125 kg/m	610 UB 125
A channel of 200 x 75 x 23kg/m	200 PFC
An unequal angle of 75 x 50 x 8mm thick	75 x 50 x 8 UA
An equal angle 75 x 75 x 8mm thick	75 x 8 EA
A circular hollow section 165mm outside dia x 5mm thick	165 x 5.0 CHS
A rectangular hollow section 100 x 50 x 4mm thick	100 x 50 x 4.0 RHS
A square hollow section 150 x 150 x 9mm thick	150 x 9.0 SHS
A plate 200 x 8mm thick x 240 long	200 x 8 PL. x 240 LONG
2 x 20mm DIA. commercial bolts tightened snug tight	2M20 4.6/S BOLTS
4 x 20mm DIA. high strength bolts tightened snug tight	4M20 8.8/S BOLTS
6/20mm DIA. high strength bolts, fully tensioned in friction	6M20 8.8/TF BOLTS
10/20mm DIA. high strength, fully tensioned in bearing mode	10M20 8.8/TB BOLTS
A cap plate 10mm thick	10 CAP PL.
12mm stiffener plates located on both sides of beam web	12 STIFFENER PLATES BOTH SIDES OF WEB
20mm base plate on column	20 BASE PL.
10mm cleat plate	10 CLEAT PL.

Table 37 Timber Plans

Element	Tag	Block / Symbol
Bearers	B*	N/A
Bottom chord brace/hangar	BC*	N/A
Cable truss	CT*	N/A

Element	Tag	Block / Symbol
Ceiling joists	CJ*	N/A
Fascia/barge	F*	N/A
Hanging beams	HB*	N/A
Joists	J*	N/A
Purlins	P*	N/A
Rafters	R*	N/A
Ridge/hips	RD*	N/A
Speedbrace	SP*	N/A
Struts/fan struts	S*	N/A
Trusses	T*	N/A

Element	Tag	Block / Symbol
Underpurlins	UP*	N/A
Vertical bracing	VB*	N/A

Element	Tag	Block / Symbol
Beam / Girder	B*S* (e.g. B3S2)	N/A
Bearing / Pedestal	A*B*S* (e.g. A1B3S2) or P*B*S* (e.g. P1B3S2)	For Pot Bearings
Parapet / Barrier	PB*	N/A

Notes for Table in Table 32 to Table 37:

1. All element tags shall be drawn in 3.5mm high text, unless noted otherwise above. Some vertical element tags to be placed on 45-degree angle (plans only), refer tables above, if so, angle to be based on viewing tag from bottom right-hand corner of plan/drawing. Otherwise, all other tags shall be placed alongside or next to the element in question.
2. If plans require to be combined e.g. Steelwork and Timber, judgement may be required to allow for tagging of elements differently.
3. * denotes elements to be numbered by type,
   - ** denotes elements to be numbered individually.
4. N/A denotes not applicable.
5. Member tags shown in tables above may require reference to either typical member type details and/or member schedules.
6. Element Notations (tags) used for reinforcement shall be 2.5mm high text, colour 0.25/White.

15.5 Drawing Set Up

15.5.1 Drawing Colour

Drawing colour shall be in accordance with the Levels specification in Appendix Q – Layers / Levels. The PDF output for Structural drawings shall be in black and white.

If additional Colours are required, a request shall be registered to DMS, via email, for the Colours to be supplied by DTP, subject to approval by DTP.

16 Tram Infrastructure Discipline Standards (Level 2)

16.1 Introduction

This Section specifies the discipline specific requirements that shall apply for Tram Infrastructure design drawings. Tram Infrastructure drawings shall also comply with the Level 1 drawing requirements outlined in Sections 4 to 8

Specific requirements for the Tram Infrastructure discipline are set out in the sections below.

Tram Infrastructure drawings should be developed and managed as per Section 16, unless they can be wholly contained within other relevant sections (section 9 to 15).

16.1.1 Tram Infrastructure Drawing Types and Elements

Table 38 below outlines Typical Drawing Types which may be produced throughout project delivery which will be inserted in 'Title 2' of the drawing title block for this discipline. The table also outlines Drawing Type which shall be updated to 'As-Built' status and submitted to DMS.

Table 38 Tram Infrastructure Drawing Types

Design Package	Drawing Type	As-Built Required	Comments
Tram Track Drawings	Fabrication Plans	N	Not Required
Tram Track Drawings	Cover/ Index Sheets	Y	
Tram Track Drawings	Vertical Alignment	Y	
Tram Track Drawings	Clearance Diagrams	Y	
Tram Track Drawings	Horizontal Alignment	Y	
Tram Track Drawings	Track Structure	Y	
Tram Track Drawings	Track Works	Y	
Tram Track Drawings	Drainage Plans	Y	
Tram Track Drawings	Bonding	Y	
Tram Track Drawings	Conduits	Y	
Tram Platform Drawings	General Site Arrangement	N	Not Required
Tram Platform Drawings	Index Sheets	Y	
Tram Platform Drawings	Signage & Line Marking Plan	Y	
Tram Platform Drawings	Typical Section	Y	
Tram Stop Drawings	General Site Arrangement	N	Not Required
Tram Stop Drawings	Index Sheets	Y	
Tram Stop Drawings	Signage & Line Marking Plan	Y	
Tram Stop Drawings	Typical Section	Y	
Tram Power Drawings	Aerial Feeder Distribution Diagram	Y	
Tram Power Drawings	Fabrication Plans	N	Not Required
Tram Power Drawings	Cover/ Index Sheets	Y	
Tram Power Drawings	Sectionalised Diagrams	Y	
Tram Power Drawings	Substation Drawings	Y	
Tram Power Drawings	Tram Overhead Layouts	Y	
Tram Power Drawings	Underground Feeder Distribution Diagram	Y	
Tram Power Drawings	Substation Layout	Y	

Design Package	Drawing Type	As-Built Required	Comments
Tram Power Drawings	Single Line Drawings	Y	
Tram Power Drawings	Communication	Y	
Tram Power Drawings	Schematics	Y	

16.2 Tram Infrastructure Drawing Setup

16.2.1 Tram Infrastructure Drawing File Format

MicroStation shall be used to create all Tram Infrastructure Drawings. MicroStation Titleblocks and resource files are found on the DMS Web site, the details for which are listed in Section 2.2.1.

16.3 Drawing Content

16.3.1 Line Styles

The Line Styles that are resident with in the Titleblock should be used for Tram Infrastructure Drawings.

If additional Line Styles are required, a request shall be submitted to DMS, via email, for the Line Styles to be supplied by DTP, subject to approval by DTP/DMS.

16.3.2 Levels

The Layers defined in Appendix Q – Layers / Levels shall be used on Tram Infrastructure drawings. The layers have been divided into sections within the description column of the table.

Where project specific levels are required, they shall be in the format T-xxxx.

16.3.3 Cells

Cells are standard symbols used to ensure consistency on Tram Infrastructure drawings. The following Cell Library shall be used for all Overhead Tram drawings:

- VTE_tram Overhead_200703

The date contained in the Cell Library above shall be in the format YYYYMM (e.g. 200608).

If a Cell requires minor alterations, the Cell may be dropped elements and amended and once the Cell is amended the Cell shall be regrouped as one entity.

If additional Cells are required, a request shall be submitted to DMS via email for the Cells to be supplied by DTP, subject to approval by DTP/DMS

16.3.4 Settings

The following settings shall be used for all Not to Scale (N.T.S) Tram Infrastructure Drawings:

- Angle = 0
- Scale = 1
- Grid Settings = 3.5

16.4 Drawing Set Up

16.4.1 Drawing Size

Tram Infrastructure drawings shall be drawn on the DTP A3 drawing sheet and Titleblock. The following drawings may be drawn on drawing sheets other than A3 drawing sheets:

- Sidings and Depot Drawings

If drawing sheets other than size A3 are required in order to ensure drawing clarity, refer to Section 4.8.

16.4.2 Drawing Colour

The Drawing Colour specified in Appendix Q – Layers / Levels shall be used for Tram Infrastructure drawings.

16.4.3 GIS Reference

Further to the requirements in DTP Infrastructure Drafting Drawing Section 4.3 GIS Reference, the following guidance should be used on light rail drawings.

Light rail plans should be orientated towards the Melbourne CBD. When within the CBD, typically plans should be orientated towards Flinders Street (for northbound / southbound routes) or Spencer Street (for eastbound / westbound routes). The ARTO should be consulted for direction of orientation of plans on a project by project basis where project limits extend across the CBD boundary.

17 Road Discipline Standards (Level 2)

17.1 Introduction

This Section specifies the discipline-specific requirements that shall apply for Road drawings. Road drawings shall comply with the Level 1 drawing requirements outlined in Sections 4 to 8.

17.1.1 Road Drawing Types

Table 39 outlines Typical Drawing Types which may be produced throughout project delivery which will be inserted in the drawing title block for this discipline. The table also outlines which Drawing Type shall be updated to 'As-Built' status and submitted to DMS at the completion of the works.

Drawing sets shall be produced in the order nominated in Table 39. Where drawing types are consolidated, e.g., drainage details incorporated within Alignment plans to form Drainage Alignment Plans, the plans shall adopt the alignment plan location within the overall plan set.

Table 39 Road Typical Drawing Types

Design Package	Drawing Type	As-Built Required	Comments
General / All	Cover Sheet	Y	
General / All	Index Sheet	Y	Not Required if Index sheet can be combined with Cover Sheet where space permits
General / All	Legend and General Notes	Y	Not Required if Legend and General Notes combined onto 1 drawing where space permits
General / All	Locality Plan	Y	Not Required if This information can be added onto the Cover Sheet or Alignment Key Plan where space permits
Geometry	Typical Cross Sections	Y	
Geometry	Typical Details	Y	
Geometry	Alignment Key Plan	Y	Not Required if Key Plan can be combined with the Cover Sheet where space permits
Geometry	Alignment Plans	Y	
Geometry	Geometric Plans	Y	
Geometry	Longitudinal Sections	Y	
Geometry	Cross Sections	Y	
Geometry	Detail Plans	Y	To be provided for As Built if produced
Geometry	Setting Out Details	Y	
Geometry	Kerb Lip Profiles	Y	To be provided for As Built if produced
Road Barrier	Road Barrier Details	Y	To be provided for As Built if produced
	Road Barrier Plans	Y	To be provided for As Built if produced
Pavement	Pavement Details	Y	
	Pavement Type Limit Plans	Y	

Design Package	Drawing Type	As-Built Required	Comments
	Subsurface Drainage Plans	Y	Not required if combined / detailed on Pavement Plans in Table 39 or Drainage Plans in Table 42
Traffic Engineering	Signs and Pavement Marking Plans	Y	
	Sign Faces	Y	
	Sign and Post Schedules	Y	
Temporary Works	Temporary Works Details	N	Not Required
Temporary Works	Temporary Works Plans	N	Not Required

17.2 Drawing Content

All Road drawings shall use in-ground unit of metres.

17.2.1 Line Styles

Line Styles as detailed in Appendix Q – Layers / Levels shall be used.

If additional Line Styles are required, a request shall be submitted to DMS, via email, for the Line Styles intended to be used to be approved by DTP/DMS.

17.2.2 Levels

The Levels defined in Appendix Q – Layers / Levels shall be used on Road drawings.

All elements shall be drawn using the Levels defined with the Colour, Line Styles and weight set to By Level.

Levels shown containing the character 'X' in the level name have been set aside for project-specific content as required. Where project specific Levels are required, they shall be in the format of R-D-xxxx-xxxx. R-E-xxxx-xxxx, R-LS-xxxx-xxxx. R-XS-xxxx-xxxx or R-X-xxxx-xxxx

17.2.3 Cells

Cells are standard symbols used to ensure consistency on Road Drawings. The Cell Library detailed in Table 40 Road Cell Library shall be used for all Road Drawings.

Table 40 Road Cell Library

Infrastructure	Cell Library
Road	Parking_SIGNS.cel
Road	Pavement_Marking.cel
Road	PLIGHT.cel
Road	REDUNDANT_SIGNS.cel
Road	Regulatory_SIGNS.cel
Road	Road_Design.cel
Road	symbols.cel
Road	TM.cel
Road	TRAFFIC_INFORMATION_SIGNS.cel
Road	VR_PlanCells.cel
Road	Warning_SIGNS.cel
Road	Guide_SIGNS.cel
Road	Hazard_SIGNS.cel
Road	LIS.cel
Road	MISC_STICKERS.cel
Road	MISC_SYMBOLS.cel

Where an appropriate cell exists, the cells in the DTP Library shall be used. If additional Cells are required, a request shall be submitted to DMS, via email, for the Cells intended to be used to be approved by DTP/DMS.

All new Cells shall be created using the Levels listed above in Section 17.2.2.

17.2.4 Presentation

The presentation listed below is to be used as a guide when showing proposed and existing infrastructure on the drawings.

Table 41 Drawing Presentation

Type of Information	Colour	Colour Number	Comments
Design intent of the drawing	By Level	By Level	
Existing conditions / survey	Green	9	
Existing watercourses / overland drainage	Blue	17	
Other design information for coordination / context	Grey	250	
Interfacing design packages	Cyan	8	
Proposed services including drainage	Black	0	
Existing services	Orange	19	

17.3 Detailed Requirements for Road Drawing Types

17.3.1 Cover Sheet

The Cover Sheet provides an easily identifiable cover that helps identify the contents of the set of drawings. The details contained on the Cover Sheet should enable identification of the project. A Cover Sheet may be combined with a Locality Plan or Index Sheet.

17.3.2 Index Sheet

The Index Sheet contains a summary of all the drawings contained within the drawing set. It should be ordered in sequence and divided into various drawing types and sections. At a minimum this drawing must contain the following:

- Drawing type / section headers
- Sheet Numbers
- DTP road drawing numbers
- Project drawing numbers / computer filenames
- Drawing description (Title Lines 1 to 3)
- Listing of the design reference file computer filenames

17.3.3 Typical Cross Sections

Typical Cross Sections illustrate dimensional details, road furniture locations and features of the pavement construction for sections of a project that reflect the majority of the new roadway/works (beyond the extents of intersections) in relation to the existing conditions to a relevant scale and also include:

- Structural elements of the roadway, including pertinent features such as barriers and kerb types
- Right of Way (ROW) markers
- Lateral dimensions of roadway elements
- Control / Design line and associated road name
- Crossfalls for pavement and verges (m/m, ratio or %)
- Batter slopes on medians, cuts and fills (H:V), including any benching
- Pavement boxing

Where dimensions are variable, the limits shall be indicated, e.g. Variable (1:1 to 4:1)

Cross Sections do not need to be continuous and can show different combinations of verge/batter attributes on either side of the road, even where that condition does not exist in real life.

The following details and reference notes are typically used on Typical Cross Sections, additional information can be added as required:

- Existing pavement hatching
- Grading point
- Material types – Batter / Verge / Fill

Scale Guidelines

Selection Criteria	Scale
Freeway and Divided Highway standard facilities with wide ROW proposed for a rural type environment.	Horz. and Vert. 1:400, or Hor. and Vert. 1:500
Highways, Main Roads, Access Roads and Ramps generally with narrow ROW proposed for an urban type environment.	Horz. and Vert. 1:200 or Horz. and Vert. 1:100 or
Projects based on overlays and/or resheets	Horz. 1:200, Vert. 1:100 or Horz. 1:200, Vert. 1:40

17.3.4 Alignment Key Plan

The Alignment Key Plan is used to illustrate which drawing or sheet numbers cover different extents of the works. An appropriate scale that clearly illustrates the extent of works should be adopted. An Alignment Key Plan may be combined with a Cover Sheet.

17.3.5 Alignment Plans

Alignment Plan drawings are used for the following:

- Location and set out of the road alignment
- Identification and location of existing features that are to be retained, relocated or removed
- Identification and location of special construction treatment and works
- Staging of construction works

The following information should be displayed:

- Road alignment / functional layout, including linework representing pavement marking
- Feature survey and associated existing terrain contours
- Existing and proposed Utility services
- Existing pavement fill
- Interfacing discipline works and reference notes e.g. Bridges
- Right of Way (ROW) boundary
- Critical dimensions and clearances
- Design line chainages and salient points
- Design line and road names
- Environmentally sensitive areas including notes on treatment and preservation requirements
- Footpaths, bicycle paths details, notes
- Kerb and channel transition locations
- Road furniture including barriers with details of terminal locations
- Limits of work
- Noise walls and fences, and associated notes
- Special treatments or requirements

Presentation

- Where scope is complex standalone alignment plans shall be produced
- Where scope is not complex an alignment plan may be combined with drainage plan
- Intersections should never have a match line through them
- Where space permits an alignment plan may have longitudinal sections shown below with chainages aligned
- Where space permits setout details and associated schedules can be included
- Where possible chainages to align with KM posts or other linear referencing system
- Match lines to be at even chainages

Chainage Guidelines

Chainage intervals, salient point and chainage ticks specified along the design line may vary depending on the type of the roadwork. Use the options below as a guide:

Chainage Interval	Ticks / Salient Points
100m	20m
50m	10m
20m	10m

Chainage measurements increase radially from the Melbourne GPO coordinate. Alignment Plans should be developed so that the chainages can be read in the direction of increasing value from left to right irrespective of the orientation of the North Point.

Ramp chainages are to increase in the same direction as the freeway chainage.

Scale Guidelines

Selection Criteria	Scale
Environment where details are sparse and the alignment is straight forward.	1:2000
Environment where there are some construction constraints and the alignment is straight forward.	1:1000
Environment where the alignment is complex and details are important.	1:500

17.3.6 Geometric Plans

Geometric Plans provide a baseline (datum) for the location and setting out of construction works and show the relationship between the design line and other design lines. All design lines need to be uniquely identified and shall avoid overlapping chainages where design lines are in close proximity to each other and could cause confusion. The information shown on a Geometric Plan should be sufficient to specify the design line. The required information shall include:

- Survey control points, including station name, coordinates and RL's
- Chainages, including coordinates for the start and end points
- Curve and spiral details, including the following curve information:
    - Curve number, Bearing, IP Coordinates, Radius, intersecting angle and arc length
- Design lines and labels
- Geometric set out information tables may be placed on the plan or a separate drawing for clarity

Scale Guidelines

The scale of these drawings may be varied to provide sufficient clarity due to the complexity ensuring all information is clear and legible. Typical scales include:

Selection Criteria	Scale
Environment where the alignment is straight forward	1:5000, 1:2500
Environment where the alignment is complex	1:2500, 1:2000, 1:1000

17.3.7 Longitudinal Sections

Longitudinal Sections are used to represent the vertical geometry of the roadway. The minimum information to be displayed is:

- Vertical alignment data
    - Grades
    - K values for crest and sag vertical curves
- Horizontal alignment data
- Superelevation
- Chainages
- Design surface levels
- Existing surface levels

The following details and reference notes are typically used on Longitudinal Sections, additional information can be added as required:

- Existing and proposed bridge structures including start and end chainage, depth and critical clearance envelopes of structures
- Existing and proposed major culverts
- Critical service details including type, level and approximate location
- Centre line of creeks and rivers including flood levels and their names
- Control line/design line of cross roads, ramps and their names
- Centre line of railway tracks and their service names
- Centre line of major utility services
- Label work constructed by others

Chainages

Chainage intervals should match the Cross Section drawing intervals. Typically, 10m or 20m intervals should be adopted.

Scale Guidelines

Longitudinal Sections should adopt a scale ratio of 10:1.

Selection Criteria	Scale
Freeway and Divided Highway standard facilities proposed for a rural type environment	Horz. 1:5000, Vert. 1:500 or Horz. 1:4000, Vert. 1:400
Highway, Main roads, Access Roads and Freeway Ramps proposed for an urban type environment	Horz. 1:2000, Vert. 1:200 or Horz. 1:1000, Vert. 1:100
Short lengths of Access Roads or Urban Roads	Horz. 1:1000, Vert. 1:100 or Horz. 1:500, Vert. 1:500

17.3.8 Cross Sections

Cross Sections describe the shape and dimensions of key features of the roadway. The given offset dimensions and reduced levels fix crossfalls and elevation. The sections show the lateral location of items shown on the relevant typical cross sections along with other features considered necessary

The minimum information to be displayed is:

- Chainages
- Crossfall annotation
    - Where the crossfalls are the same over any length of sections, the numerical values can be written on the first and last section in a column of sections and omitted from intermediate sections
- Verge and batter slopes
- Design surface levels for key features
    - Design line
    - Lane and shoulder lines
    - Verges
    - Lip and back of kerbs
    - Batter hinge points and benches
- Existing surface levels to coincide with the adopted design surface level locations
- Cross hatching of existing pavement

The following details and reference notes are typically used on the Cross Sections, additional information can be added as required:

- Start and end chainage for extent of works (e.g. match to existing chainage)
- Start and end chainage for existing and proposed bridge structures (optional)

- Critical services details including type, level and approximate location
- Design features and offsets
- Creek and river names
- Cross road, and ramp names
- Railway tracks and the train service names
- ROW boundaries
- Footpaths and bicycle / shared use paths
- Where the crossfall varies or changes
- Cross hatching of existing pavement
- Pavement boxing
- Walls and barriers

Chainages

Chainage intervals shall match the Longitudinal Section drawing intervals. Typically, 10m or 20m intervals should be adopted.

Scale Guidelines

Selection Criteria	Scale
Freeway and Divided Highway standard facilities with wide ROW proposed for a rural type environment	Horz. and Vert. 1:250, or Horz. and Vert. 1:400, or Horz. and Vert. 1:500
Highways, Main Roads, Access Roads and Ramps generally with narrow ROW proposed for an urban type environment	Horz. and Vert. 1:200 or Horz. and Vert. 1:100 or Horz. 1:200, Vert. 1:100
Projects based on overlays and/or re-sheets	Horz. 1:200, Vert. 1:40 or Horz. 1:200, Vert. 1:20 or Horz. and Vert. 1:200

Note – Vertical exaggeration may be used in certain circumstances, nominally 2:1.

17.3.9 Detail Plans

Detail Plans are used when additional information, typically related to the arrangement of intersections and traffic islands is required to be shown which may not be practicable to be shown on Alignment Plans. All pertinent design set out information related to intersections, traffic islands etc must be conveyed in other design drawings if Detail Plans / Kerb Lip Profiles are not produced.

The following details and reference notes are examples of additional information that may be provided on Detail Plans, additional information can be added as required:

- Design lines and names of the road elements
- Location and size of conduits
- Kerb and channel salient points and radii
- Kerb and channel set out details; easting, northing and reduced levels (RL)
- Design and existing contours
- Surface treatments

These are not mandatory drawings and should be added as required. When produced they shall be submitted for As Built.

Chainages

The chainage intervals specified along the design line should be every 20m and at the salient points.

Scale Guidelines

Selection Criteria	Scale
Environments where set out and construction requires comprehensive information/details.	1:500
Environment where details are important to the design and construction outcome.	1:250

17.3.10 Kerb Lip Profiles

Kerb Lip Profiles are complementary drawings to Detail Plans and are required where cross sections cannot provide the relevant information and additional set out information is required and are used for the following:

- To show the lip of the kerb and channel in areas not adequately covered by the cross sections, e.g. traffic islands, kerb returns, etc
- Locate the high and low points, and respective reduced levels for the setout points nominated on the Detail Plans
- Extraction of reduced levels for intermediate setting out points
- Confirmation of setting out details and checks on contours
- An overview of the kerb profile shape
- Starting point - the starting and end point where possible should be at an even design line chainage

These are not mandatory drawings and should be added as required. When produced they shall be submitted for As Built.

The following details and reference notes are typically used on Kerb Lip Profiles:

- Chainage and reduced levels at high and low grading point particularly when the grading is flat
- Kerb type and where applicable the transition point location between kerbs
- Drainage pit and kerb opening locations
- Additional information such as chainage and reduce level at mid and quarter ordinates points may be required along a large radius where the grading is variable
- Kerb lip profile drawings can be presented with just the lip profiles or in a combined drawing with an inset of the kerb plan layout relevant to the lip profile

Scale Guidelines

Kerb Lip Profiles are typically drawn with a scale exaggeration of 25:1 and the nominal scale being Horizontal 1:500 and Vertical 1:20.

17.3.11 Pavement Details

Pavement Details provide a graphical representation of the pavement structure including specific materials and associated depths nominated in the pavement design report. Pavement details also provide the interface design with kerb and channel, verges, subsurface drainage, pavement capping layers and existing pavement. Drawing sets should include interface and transition details for all combinations encountered on the project, including longitudinal and transverse joints and stepped pavement terminations to facilitate construction of future works.

The following details and reference notes are typically used on Pavement Details:

- Location of kerb and channel
- Subsurface and surface drainage
- Pavement joint / interface information
- Verge / batter material
- References to applicable Standard Drawings for Roadworks
- Legend that is reflective of the colours adopted for the Pavement Type Limits plans

Scale Guidelines

The scale of these drawings may be varied to provide sufficient clarity ensuring all information is clear and legible. Where there is a need to provide more than one pavement detail a constant nominal scale should be adopted for visual consistency between drawings.

17.3.12 Pavement Type Limits

Pavement Type Limits drawings are used for the identification and location of different pavement types and treatment works.

The following details and reference notes are typically used on Pavement Type Limits:

- Limits of work
- Special treatments or requirements, including changes to surfacing
- Rehabilitation treatment and/or notes
- Existing pavement to be removed
- Pavement rehabilitation treatment notes
- Pavement transition details
- Footpaths, bicycle paths pavement, notes
- Control/design line chainages
- Subsurface drainage (is typically shown on the Drainage Plans, but can be shown with the Pavement Type Limits where necessary)
- Sub-surface drainage pipes and pits including independent grading and associated levels (these may be omitted if detailed on the Drainage Alignment Plans or a separate set of Sub-surface Drainage Plans)
- Legend of Pavement Types and surfacing treatments

Scale and Chainage Guidelines

Pavement Type Limits shall maintain the same sheet layout, scale and chainage presentation as Alignment Plans, refer to section 17.3.5.

17.3.13 Signs and Pavement Marking Plans

Signs and Pavement Marking Plans are used to illustrate the location and type of pavement marking to be used and the signage to be installed and removed for the project.

For some projects, Signage may need to be installed beyond the limits of work which may require additional dedicated drawings or notes providing advice as to the location of the proposed sign(s).

For medium to large sign faces, it is recommended that they are shown to scale on these plans to confirm that they can be accommodated within the available space at the nominated location.

The following details and reference notes are typically used on Signs and Pavement Marking Plans:

- Ultimate sign layout to be shown i.e. all new signs, replaced and any existing signs that are to be retained. Images of project specific existing signs may be inserted on the drawings. Where images are included, they must be provided at handover for upload to DMS or embedded within CAD file
- Dimensions for lane widths, shoulder widths, set out points, etc
- Sign location and orientation including existing signs that are to be retained
- Existing signs that need to be removed or are redundant (Required during design, to be removed at As Built)
- Special treatment requirements
- Notes on the location and types of signs including sign codes e.g. G2-V1A
- References to standard details in Australian Standards e.g. AS 1742 and associated DTP Supplements, such as the Traffic Engineering Manual or other relevant technical documentation

The DTP Assembly No. may be identified if a Sign & Post Schedule is included.

Scale and Chainage Guidelines

Signs and Pavement Marking Plans should generally maintain the same sheet layout, scale and chainage presentation as Alignment Plans, refer to section 17.3.5. Environments where details are complex, e.g. intersections, additional scales may be adopted. Consideration can also be given to masking out redundant existing conditions to aid clarity of the final plan.

17.3.14 Sign Faces

Sign Face drawings are used in conjunction with the DTP Standard Specification for Roadworks Section 860 Manufacture of Road Signs by the sign manufacturers for identification of the types of materials to be used for the construction of the sign and setting out of the sign face design information.

The following details and reference notes are typically used on Sign Face Plans:

- Letter height and series, e.g. 140 DM, 140 EM, 140 EMod, etc.
- Dimensioning from the left hand edge of sign and the letter spacing tables
- Reference drawings
- Colour and class of retro-reflective material
- Sign type and code
- All details to be displayed on the manufactured sign are to be shown, together with all relevant dimensioning.

Sign face drawings must be in accordance with AS 1743 Road Signs - Specifications and any DTP supplementary information to this standard.

Scale Guidelines

The scale of these drawings may be varied to provide sufficient clarity and for the deciphering of the dimensioning details.

18 Road Drainage (Level 2)

18.1 Introduction

This Section specifies the discipline-specific requirements that shall apply for Road Drainage drawings. Road Drainage drawings shall comply with the Level 1 drawing requirements outlined in Sections 4 to 8.

18.1.1 Road Drainage Drawing Types

Table 42 outlines Typical Drawing Types which may be produced throughout project delivery which will be inserted in the drawing title block for this discipline. The table also outlines Drawing Types which shall be updated to 'As-Built' status and submitted to DMS.

Table 42 Road Drainage Typical Drawing Types

Design Package	Drawing Type	As-Built Required	Comments
Road Drainage	Cover Sheet	Y	
Road Drainage	Index Sheet	Y	Not Required if Index sheet can be combined with Cover Sheet where space permits
Road Drainage	Legend and General Notes	Y	Not Required if Legend and General Notes combined onto 1 drawing where space permits
Road Drainage	Locality Plan	Y	
Road Drainage	Typical Sections	Y	
Road Drainage	Drainage Details	Y	
Road Drainage	Drainage Alignment Plans	Y	
Road Drainage	Subsurface Drainage Plans	Y	Not required if combined / detailed on Pavement Plans in Table 39 or Drainage Plans in Table 42
Road Drainage	Drainage Longitudinal Sections	Y	
Road Drainage	Drainage Pit Schedule	Y	

18.2 Drawing Content

All Road Drainage drawings shall use in-ground unit of metres.

18.2.1 Line Styles

Line Styles as detailed in Appendix Q – Layers / Levels shall be used.

If additional Line Styles are required, a request shall be submitted to DMS, via email, for the Line Styles intended to be used to be approved by DTP/DMS.

18.2.2 Levels

The Levels defined in Appendix Q – Layers / Levels shall be used on Road Drainage drawings.

All elements shall be drawn using the Levels defined with the Colour, Line Styles and weight set to By Level.

Levels shown containing the character 'X' in the level name have been set aside for project-specific content as required. Where project specific Levels are required, they shall be in the format of D-D-xxxx-xxxx. D-E-xxxx-xxxx, D-LS-xxxx-xxxx. D-XS-xxxx-xxxx or D-X-xxxx-xxxx

18.2.3 Cells

Cells are standard symbols used to ensure consistency on drawings. The Cell Library detailed in Table 43 shall be used for all Road Drainage Drawings. Refer to Road Discipline Section 17.2.3 for additional cell libraries.

Table 43 Road Drainage Cell Library

Infrastructure	Cell Library
Road Drainage	Road_Design.cel

18.2.4 Presentation

Refer to Road Discipline Section 17.2.4 for guidance on drawing presentation.

18.3 Detailed Requirements for Road Drainage Drawing Types

18.3.1 Drainage Alignment Plan

Drainage Alignment Plans identify the location of the drainage network to be retained, removed or modified including identification and location of special drainage treatments and works.

The required information shall include:

- Feature Survey
- Existing and proposed Utility services
- Road Alignment
- Design surface contours
- Existing surface contours beyond the extent of works
- Location and set out of drainage network and/or cross culverts including reference to major culverts and associated structure numbers where applicable
- Pipe type and size labels
- Pit numbering
- Direction of flow
- Inlet and outlet treatments
- Earthwork drain types and treatments including the offset distance, invert level at chainages where there is a change in offset and/or grading, or at inlets and /outlets near culverts
- Design / control line chainages
- Sub-surface drainage pipes and pits including independent grading and associated levels (these may be omitted if detailed on the Pavement Type Limits drawings or a separate set of Sub-surface Drainage Plans)

Scale and Chainage Guidelines

Drainage Plans shall maintain the same sheet layout, scale and chainage presentation as Alignment Plans, refer to section 17.3.5. Environments where details are complex, e.g. intersections or storm water treatment facilities, additional drawings at larger scales may be adopted.

18.3.2 Drainage Longitudinal Sections

The minimum information to be displayed on Drainage Longitudinal Sections is:

- Pipe size / diameter
- Pipe type / class, including installation condition e.g. H2
- Pipe slope / grade
- Pipe capacity / velocity for the nominated storm event, e.g. Q10
- Design / existing invert levels (3 decimal places)
- Inlet and outlet levels
- Pit numbers
- Hydraulic grade lines
- Design surface level

- Existing surface
- Chainages of pits

The following details and reference notes are typically used on Drainage Longitudinal Sections, additional information can be added as required:

- Underground services
- Highway, road and ramp names
- Feature names including rivers and creeks
- Bridge and structure names
- Special treatment notes

Scale Guidelines

Selection Criteria	Scale
Longitudinal Sections should adopt a scale ratio of 5:1.	Horz. 1:1000, Vert. 1:200 or Horz. 1:500, Vert. 1:100

18.3.3 Drainage Pit Schedule

The minimum information to be displayed on Drainage Pit Schedules is:

- Pit number
- Pit type including haunched pits, wingwalls, endwalls
- Pit dimensions – length, width and depth
- Pit, endwall and wingwall invert levels (3 decimal points)
- Pit, endwall and wingwall setout easting and northing (3 decimal points)
- Bearing of the pit, endwall and wingwall in degrees and minutes
- Reference to standard and special drawings
- Comments / general remarks (optional)

19 Intelligent Transport Systems Discipline Standards (Level 2)

19.1 Introduction

This Section specifies the discipline-specific requirements that shall apply for Intelligent Transport Systems drawings. Intelligent Transport Systems drawings shall comply with the Level 1 drawing requirements outlined in Sections 4 to 8.

19.1.1 Intelligent Transport Systems Drawing Types

The below Table 44 ITS Typical Drawing Types outlines Typical Drawing Types which may be produced throughout project delivery which will be inserted in the drawing title block for this discipline. The table also outlines Drawing Types which shall be updated to 'As-Built' status and submitted to DMS.

Table 44 ITS Typical Drawing Types

Design Package	Drawing Type	As-Built Required	Comments
General / All	Cover Sheet	Y	
General / All	Index	Y	Not Required if Index sheet can be combined with Cover Sheet where space permits
General / All	Legend and General Notes	Y	Not Required if Legend and General Notes combined onto 1 drawing where space permits
Traffic Signals	Traffic Signal Plans	Y	
Traffic Signals	Specific civil drawings	Y	
ITS Side Road Activated Speeds	Layout Drawings	Y	
ITS Side Road Activated Speeds	Op-Sheets	Y	
ITS Side Road Activated Speeds	Specific civil drawings	Y	
ITS ESLS, Blue-tooth, Help Phones	Layout drawings	Y	
Managed Motorway	ITS Layout	Y	
Managed Motorway	Fibre Network – Cable Schematic-logical and physical drawings	Y	
Managed Motorway	Roadside Cabinet	Y	
Managed Motorway	Electrical Distribution Board	Y	
Managed Motorway	Power Cable Schedule and drawings	Y	
Managed Motorway	Communications Cable Schedule and drawings	Y	
Managed Motorway	Access Switch Port Allocation Schedule	Y	
Managed Motorway	Field Processor Port Allocation Schedule	Y	
Managed Motorway	ITS Specific Civil and Structural Drawings	Y	
Layout drawings	Y		

Design Package	Drawing Type	As-Built Required	Comments
ITS Travel Time Signs and VMS	Layout drawings	Y	
ITS Travel Time Signs and VMS	Civil and Structural drawings	Y	
ITS Ice Warning Stations, AAWS for Railway Crossings, Over height detection systems	Layout drawings	Y	
ITS Ice Warning Stations, AAWS for Railway Crossings, Over height detection systems	Civil and structural drawings	Y	
Road Lighting	Road Lighting Plans	Y	

19.2 Drawing Content

All Intelligent Transport System drawings shall use in-ground unit of metres.

19.2.1 Line Styles

Line Styles as detailed in Appendix Q – Layers / Levels shall be used.

If additional Line Styles are required, a request shall be submitted to DMS, via email, for the Line Styles intended to be used to be approved by DTP/DMS.

19.2.2 Levels

The Levels defined in Appendix Q – Layers / Levels shall be used on Intelligent Transport Systems drawings.

All elements shall be drawn using the Levels defined with the Colour, Line Styles and weight set to By Level.

Levels shown containing the character 'X' in the level name have been set aside for project-specific content as required. Where project specific Levels are required, they shall be in the format of H-D-xxxx-xxxx. H-E-xxxx-xxxx, H-LS-xxxx-xxxx. H-XS-xxxx-xxxx or H-X-xxxx-xxxx

19.2.3 Cells

The Cell Library detailed in Table 45 shall be used for all Intelligent Transport Systems drawings. Refer to Road Discipline Section 17.2.3 for additional cell libraries.

Table 45 ITS Cell Library

Infrastructure	Cell Library
Intelligent Transport Systems	ITS.cel
Lighting	PLIGHT.cel

19.3 Detailed Requirements for Intelligent Transport Systems Drawing Types

19.3.1 Traffic and Pedestrian Signal Plans

Drawings are stored within the DMS and are subject to revision over time.

This section is the only agreed format and standard for new traffic and pedestrian signal plans created for DTP and deviations will not be accepted.

When remodelling an existing signalised site already in MicroStation CAD format, the existing drawing number and Titleblock shall remain and a new version, e.g. A, B, C, etc, issued for that plan.

For existing manual hand drawn plans, where a CAD format is not available or the base information is not adequate, the site shall be re-surveyed, a new drawing number issued and the new plan format and standards requirements shall apply.

The Standard Sign numbers (#1 - #14) are reserved and not to be used for other sign identification. When identifying signs other than 1-14, begin numbering from #15 onwards.

Submission of Drawings to DMS

Provision of a complying DGN and PDF is part of the requirements to be met prior to commissioning of traffic and pedestrian signals. A copy of the master drawing (DGN) and a single 'text searchable' PDF per plan shall be provided.

The DGN and PDF files will be named according to the issued DTP Drawing Number, e.g. 456745.dgn / 456745.pdf. The site number MUST be included within the documents and captured in the Titleblock.

A requirement to comply with document delivery is the provision of a Detector Map Drawing with the final Traffic Signal Plan.

The Detector Map Drawing is an extract of specific layers that will be used on the Controller Operation Specification (Op Sheets/EPROM) for the traffic signals. Detector Map Drawings of Pedestrian Operated Signals (attached to a signalised intersection) do not need to be provided unless requested.

The following details are to be included on the Detector Map Drawing of the Traffic Signal Plan:

- Lip / Line of kerb
- Lane markings, including bus and bicycle markings, but excluding lane arrows
- Tram tracks
- Pedestrian crossing line marking

Note: The detectors will be added by Department of Transport Signal Services

The Detector Map Drawing with the relevant layers must be provided as a .JPEG/.PNG/.PDF file alongside the final Traffic Signal Plan. If an intersection requires multiple Traffic Signal Plans (e.g. large freeway interchange), the Detector Map Drawing should also be divided in the same manner.

For example Detector Map Drawings, refer to the Figures below.

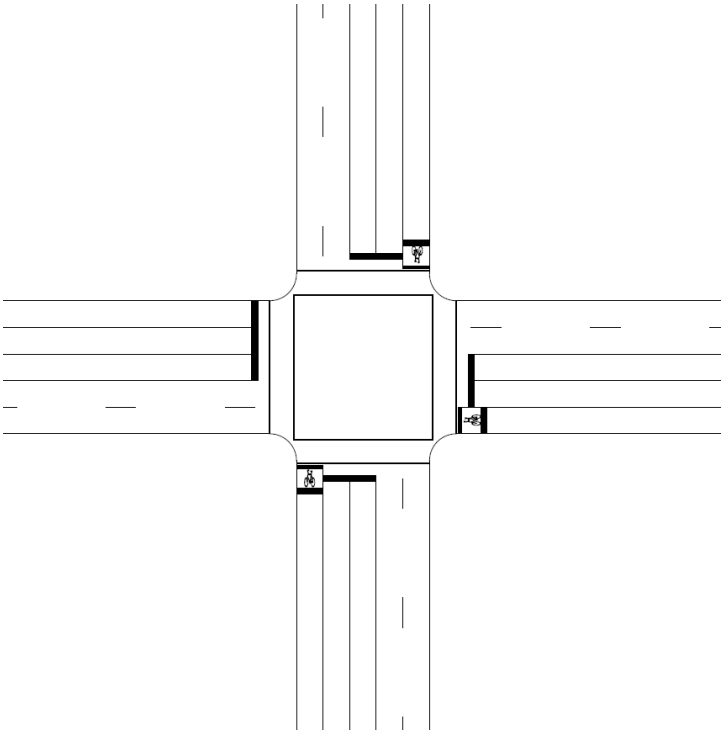


Figure 12 Simple Cross Intersection

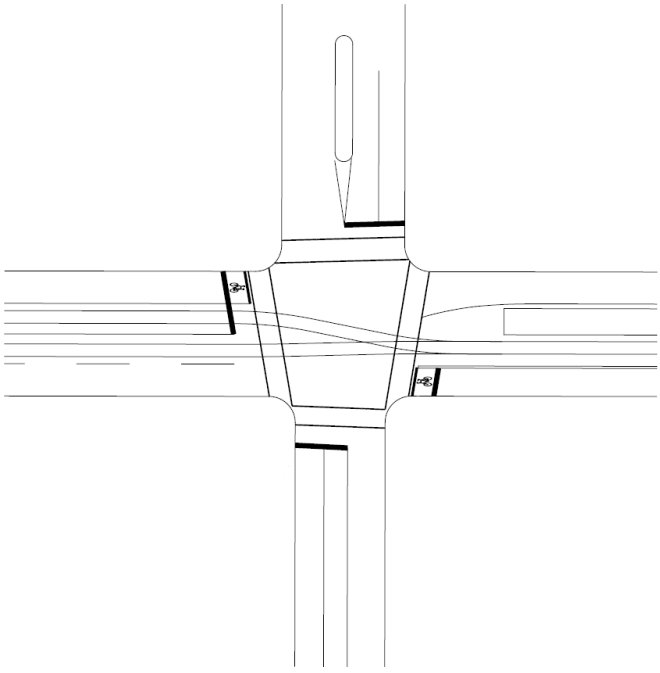


Figure 13 Cross Intersection with Tram Tracks

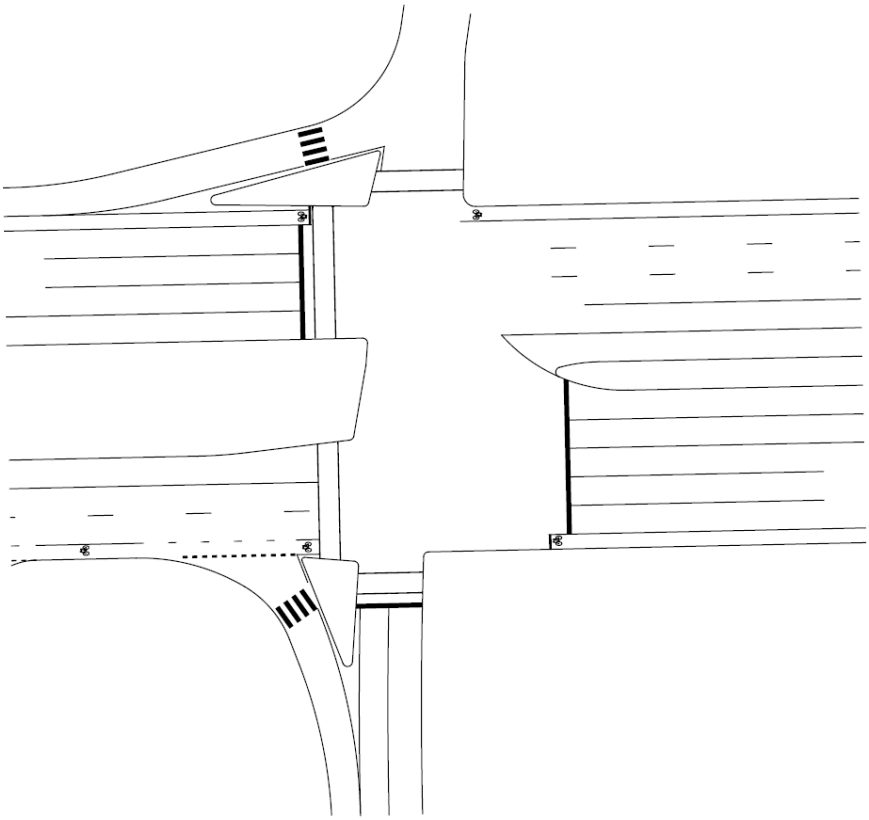


Figure 14 Section of a Freeway Interchange

Document Verification

Contractors may, by agreement, seek feedback on CAD compliance when preliminary comments on design are requested from DTP. MicroStation DGNs should be provided for that purpose. General comments on presentation format ONLY can be sought with the provision of a PDF.

Note: Plan is not to be versioned prior to initial construction.

Drawing Size and Scale

The sheet size and scale adopted for the Traffic or Pedestrian Signal plans will vary depending on the nature and complexity of the project with plans drawn at A3 (1:500) or A1 (1:250) accordingly.

Confirm size and scale requirements with DTP prior to the commencement of drawing.

Drawing Information

The following details and reference notes are required for Traffic and Pedestrian Signal Drawings, additional information can be added as required:

- Installation / remodel notes
- Pedestal type and number (signal hardware)
- Conduit pits, conduit runs, detector loops and detector pits
- Phasing and lantern configuration diagrams
- Kerb reinstatement, pram crossings and construction notes
- Public lighting
- AS 1428.1 (Disability Discrimination Act) requirement details and notes
- Parking restrictions
- Pavement/line marking
- Signs location and sign schedule

- Special treatment or requirements
- Cross section dimensioning, e.g. lane and median widths, etc
- Public transport requirement notes
- Photo violation sites
- Tram detection and bus detection and treatments
- Speed zones
- Approach grade for each carriageway

Refer to AS 1742.2 Traffic Control Devices for General Use and DTP supplementary guidance to this document for placement of pavement markings at signalised intersections.

The speed zones at intersections must be stated on the drawing. This detail is used to determine the yellow and red signal phase times for the site.

The Approach Grade for each approach carriageway shall be included on the drawing. The approach grade shall be determined by obtaining the elevation at the stop line, elevation at the Approach Grade Distance and calculating the grade over the Approach Grade Distance (refer to table below for Approach Grade Distance). Elevation points shall be measured from approximately the middle of the approach lanes.

Table 46 Approach Grade Distance for Determining Approach Grade

Design Speed (km/h)	Approach Grade Distance (m)
≤40	40
45 (right turn vehicles	40
50	50
60	70
70	90
80	110
90	140

The Approach Grade information shall be written as “APPROACH GRADE +/-X%”, surrounded by a border and located and orientated so that it is clear as to which approach the Approach Grade applies to.

Separate Signs and Pavement Marking drawings and Traffic or Pedestrian Signal Plans must be provided for major projects with adequate cross referencing to each other. Both drawing types will be used by the signal operations team for preparing the signal controller program.

All road signs (except for street name signs, local council signs, e.g. neighbourhood watch, etc) must be included on minor and small projects (e.g. isolated traffic or pedestrian signal sites). Regulatory signs must be included on the traffic or pedestrian signal drawings as this information is used to determine what signal operation can be implemented at a site during the preparation of the signal controller program. These signs are to be included on the drawings whether or not a separate Signs and Pavement Marking drawing is to be provided.

Drawing Presentation

The presentation listed below shall be applied.

Table 47 Traffic Signal Drawing Presentation

Type of Information	Colour	Colour Number	Comments
Traffic and signal design	Black	0	
Existing conditions / survey	Green	9	
Other design features (Road work, bridges etc)	Cyan	8	
Proposed services including drainage	Grey	250	

Type of Information	Colour	Colour Number	Comments
Existing services	Orange	19	
Pavement surface treatment (Bikes, buses, pedestrian etc)	By Level	By Level	No change to colours. Transparency to be applied (50% recommended)

As Built Drawing DMS Submission

The traffic signal plan shall reflect the as built conditions of the site prior to submission to DMS. This includes the constructed layout of the road, with redundant road/survey information to be removed.

The drawing shall have all construction notes and redundant assets (e.g. old pits, poles) removed where they have physically been removed from site, Any abandoned assets that are no longer used but remain on site shall be marked with (R). Existing assets that are being reused shall be marked with (E).

Where CCTV assets are installed as part of the signal site construction or remodel, they are to be shown on the plan.

CAD File Requirements

Format:

- Bentley Systems' MicroStation DGN is the only format accepted by DTP
- DGNs will be created using a DTP MicroStation 'seed file'

Use of Models:

- DGNs will contain a single 2D model for all plan content
- Only ONE plan per model/dgn
- Use of multiple models is NOT permitted.

Referencing:

- There will be no 'external reference files' used with the exception of the DTP Titleblock. Reference files used for the development of the drawing shall be merged with the master file upon submission to DMS.

19.3.2 ITS Layout Drawing Set

ITS layout drawings illustrate the ITS components within the road environment, including ITS equipment, electrical and communication cabling, conduits and pits, Roadside Cabinets (RCB's) and other relevant information including maintenance access.

The ITS layout drawing set shall be developed separate to the other civil, structural, roadworks, pavement marking and lighting drawings to ensure a clean, concise and uncluttered ITS drawing set.

In addition to A3 drawings, the ITS Layout Drawing Set shall also include a roll plan showing the full extents of the proposed works. Multiple roll plans may be required due to the length of the project.

The ITS layout drawing set shall include the following sheets and features:

General

- Locality Plan and Index Sheet showing the full route covered by the drawing set and sheet numbers for each individual drawing along the route
- Key drawing showing all symbology used throughout the drawing set
- Match lines listing the next sheet referencing the full drawing number
- Cadastral boundaries including the DTP Right of Way, as well as ROW/lease boundaries for other operators such as councils and private (toll) road operators
- North point
- Road names
- Inbound and outbound indication
- Most recent aerial imagery as background

- Lane marking, directional arrows etc
- Main chainage line with chainages marked at 100m increments
- Barrier protection as it relates to installation, maintenance and safety during normal operation
- Carriageway and shoulder widths to scale so they can be scale measured
- Limits of Works including those related to the project's actual Separable Portions

ITS Specific

- New and existing ITS equipment – CCTV, FDS(AP/RP/WVD/TIRTL), FRS, VMS, RCx, TSL, LUMS, VSLS, RCB, DB, BDS, Node huts, any other ITS device
- Correct orientation of equipment where the standard device symbol has an intrinsic and deliberate orientation (e.g. AP)
- RAI numbers of all new and existing assets
- Maintenance access provisions including hardstands, stirs, doors through noise walls, paths
- ITS and lighting conduit routes and pits including quantity and size of conduits and pits
- ITS and lighting structure conduit routes including type, quantity and size of conduits, as well as haul through and junction boxes
- Trunk fibre cable IDs and routes
- POS to DB cable IDs and routes
- DB to RCB power cable IDs and routes
- DB to device power cable IDs and routes (if any)
- RCB tail fibre cable routes
- Barriers containing conduits including barrier type and locations of access hatches
- New and existing ITS gantries including DTP structure IDs
- Gantry leg box locations
- TIRTL enclosure types with Tx and Rx designations
- Location and type of poles for CCTV, VSLS, RCx, TSL, AP, RP
- All details of FRS road markings and related ITS devices on ramps and arterial roads
- Sensys AP/RP/stud connections – some form of intuitive visual indication relating stud clusters to their parent RPs and AP
- Notes indicating fibre joint locations
- Notes indicating power joint locations
- Notes indicating the proposed treatment of existing equipment to be permanently removed, relocated, re-oriented or re-cabled in any way
- Tables of all new devices, one table per device type (refer first dot point 1) detailing equipment RAI number, type, chainage, parent RCB, and other relevant columns of information depending on the type of equipment (e.g. enclosure type column for a table of TIRTL sites)

Scale and Chainage Guidelines

ITS Layout Drawings shall maintain the same sheet layout, scale and chainage presentation as Alignment Plans, refer to section 17.3.5.

19.3.3 Fibre Network

19.3.3.1 Cable Schematic Drawing Set

This drawing set will consist of schematic drawings showing the fibre connections between ITS Node huts and RCBs at the fibre cable level. The drawings in this set shall include all existing equipment as well as new equipment to be

delivered by the project. This drawing set shall provide a schematic representation of all trunk fibre cables covering at least one Node to Node network segment showing:

- Locality Plan and Index Sheet showing the full route covered by the drawing set and sheet numbers for each individual drawing along the route
- Key drawing showing all symbology used throughout the drawing set
- Match lines listing the next sheet referencing the full drawing number
- Limits of works and their chainage indicated along the schematic fibre route
- All new and existing trunk and tail fibre runs, with distinction between new and existing
- Full and partial fibre joints with fibre joint enclosure IDs and chainage (these will be used to map the joints on to the layout drawing set)
- Node huts
- Trunk fibre runs between the Node huts with cable IDs
- Tail fibre connecting each RCB to the trunk cable
- Indication of the trunk and tail fibre core counts for each segment of cable
- RCBs connected to the trunk cables
- Each RCB's membership to a given network ring
- Devices other than RCBs that are connected to the trunk cables (if any)
- Indication of which trunk cables and RCBs are on the IB and OB directions
- Switch type within the RCBs and Node huts
- Chainage of each Node, RCB and device along the trunk fibre
- RAI numbers of all new and existing assets

19.3.3.2 Core Schematic Drawing Set

This drawing set will consist of schematic drawings showing the fibre connections between ITS Node huts and RCBs at the individual fibre core level. The drawings in this set shall include all existing equipment as well as new equipment to be delivered by the project. This drawing set shall provide a complete representation of each of the trunk fibre cables covering at least one Node to Node network segment showing:

- Locality Plan and Index Sheet showing the full route covered by the drawing set and sheet numbers for each individual drawing along the route
- Key drawing showing all symbology used throughout the drawing set
- Match lines listing the next sheet referencing the full drawing number
- Limits of works along the fibre route
- All fibre cables to be represented as collections of individual cores running through splice points and between termination points
- All fibre cores in use to have a label indicating the use of the core (e.g. ring number) shown on each sheet the core appears on
- All new and existing trunk and tail fibre runs, with distinction between new and existing
- Fibre core splices indicated with an 'x' with fibre joint enclosure IDs and chainage shown (these will be used to map the joints on to the layout drawing set)
- Node huts
- Trunk fibre runs between the Node huts with cable IDs
- Tail fibre connecting each RCB to the trunk cable
- RCBs connected to the trunk cables
- Each RCB's membership to a given network ring
- Devices other than RCBs that are connected to the trunk cables (if any)
- Indication of which trunk cables and RCBs are on the IB and OB directions
- Indication of cables running through road crossings

- Switch type within the RCBs and Node huts
- Chainage of each Node, RCB and device along the trunk fibre
- RAI numbers of all new and existing assets

19.3.4 Roadside Cabinet Drawing Set (RCB)

The below shall be included in each RCB drawing set. The below inclusions shall capture information on new and existing equipment as it relates to a given RCB.

- Internal Equipment Layout – a scale drawing of the cabinet as viewed from the comms side (door) and power side (door) showing the position of each item of equipment including rack unit numbering (one sheet per cabinet). All internal equipment must be represented as a to-scale likeness of the actual equipment to be used and shall be allocated an identifying number relating to each item in BoM table.
- Bill of Materials (BoM) table for all major items of equipment in the RCB including ITS devices and mains power devices such as MCBs, filters, switches etc.
- Chainage of the RCB
- Mains Power Electrical Single Line Diagram showing all internal (RCB device) and external (connected field devices) power connections to the RCB
- Comms Single Line Diagram showing all serial, Ethernet and fibre comms connections internal (RCB device) and external (connected field devices) to the RCB. Produced in a similar style to a traditional mains-power SLD.
- RAI number of the RCB and all equipment depicted in various sheets in the set

19.3.5 Electrical Distribution Board Drawing Set

- Internal Equipment Layout – a scale drawing of the cabinet as viewed from the front door(s) showing the position of each item of equipment (one sheet per DB cabinet). All internal equipment to be enumerated with numbers relating to each item in the BoM table.
- Mains Power Electrical Single Line Diagram showing all internal (DB device) and external (connected field devices) sourcing power from the DB
- Detailed information on the Point of Supply (POS) – Cable size and length running from the POS to the DB, POS type (e.g. pole No.xxxx), power authority, connection point (e.g. FOLCB or pit)
- RAI number of the DB and all equipment depicted in various sheets in the set

19.3.6 Power Cable Schedule

The Power Cable Schedule shall be presented as a table on a DTP title block and shall contain the following information for all cables:

- Cable ID and label text if different
- Cable type (core count and type – e.g. 2C+E XLPE/PVC)
- Cable length including storage loops
- Any associated auxiliary earth cables
- Information on bonding/termination where cores are used in parallel
- Earthing information (e.g. use of MEN)
- Design running current
- Max allowed running current

Mains Power Cable

- POS to DB
- DB to RCB
- DB to device
- RCB to device
- Device to device

ELV AC/DC Power Cables

- RCB to device
- Device to device

19.3.7 Communications Cable Schedule

The Communications Cable Schedule shall be presented as a table on a DTP title block and shall list all serial, CAT6 Ethernet and device fibre cables downstream of the RCB; namely:

- RCB to device comms cables (all types)
- Device to device comms cables (all types)

The Comms Cable Schedule shall contain the following information for all cables.:

- Cable ID and label text if different
- Cable type (e.g. 2-pair copper serial, CAT6 Ethernet, 4C SMOF)
- Cable length including storage loops

19.3.8 Access Switch Port Allocation Schedule

The Access Switch Port Allocation Schedule shall be presented as a table on a standard drawing title block. All rows in the table shall relate to an individual Access Switch (ASW) and shall contain:

- ASW ID
- Device RAI ID connected to each Ethernet port
- Device IP settings including IP address, netmask, gateway, DNS, NTP and other as required
- Indication as to whether the device connects natively via copper, or whether an intermediate media converter pair, or Ethernet extender is part of the link

19.3.9 Field Processor Port Allocation Schedule

The Field Processor Port Allocation Schedule shall be presented as a table on a standard drawing title block. All rows in the table shall relate to an individual Field Processor (FP) and shall contain:

- FP ID
- Parent Access Switch for the given FP
- Device RAI ID connected to each serial port
- Serial port mode parameters (e.g. 485,38400,8,N,1)

19.3.10 ITS Specific Civil and Structural Drawing Sets

The following ITS-specific civil and structural drawings sets must be produced and be referenced by the design report:

- ITS gantry beam and column structural details including internal conduits, provisions for mounting leg boxes and ITS devices, cable access hatches, beam orientation identification marks
- ITS gantry column, beam, barrier general arrangement and device positioning (horizontal and vertical) relative to lane marking at each specific ITS gantry location
- Gantry foundation detail including dimensions, conduit types and positioning
- RCB and DB foundation details including dimensions, orientation, conduit types and positioning
- Power pillar foundation details including dimensions, conduit types and positioning
- Pole foundation details including dimensions, conduit types and positioning CCTV, VSLS, RCx, TSL, AP, RP
- Barrier conduit arrangements, access hatches, conduit transitions between barriers and in-ground
- TIRTL enclosure installation detail including dimensions, elevations for beam clearance to road surface, conduit types and positioning
- Structure mounted conduits for trunk and device related power and comms cabling detailing any junction boxes, haul-through boxes, fixings and the orientation of components
- Special / bespoke mounting arrangements for any ITS device etc (e.g. structure mounted LUMS brackets)

19.3.11 Road Lighting

Road Lighting drawings are used for metered freeway lighting schemes and arterial road lighting schemes which are owned and operated by DTP. Road lighting designs which are managed by the electrical distribution company (cost shared lighting schemes) shall have drawings produced to the relevant distribution company requirements and are considered to be returned works. Compliance with this standard is not required for those cases.

The following information should be displayed:

- Locations and numbers of poles and luminaires
- Pole types, e.g. JUP, slip base, impact absorbing
- Mounting heights and bracket outreach of the luminaires
- Electrical details including point(s) of supply
- Limits of road lighting scheme
- Clearance to overhead power lines as appropriate
- Electrical circuit design
- Luminaires' details
- Pit and conduit layout
- Point(s) of supply, distribution box(es)
- Public transport details, e.g. tram stops and bus stops

Presentation

The presentation listed below shall be applied.

Table 48 Road Lighting Drawing Presentation

Type of Information	Colour	Colour Number	Comments
Street lighting design	Black	0	
Existing conditions / survey	Green	9	
Other design features (Road work, bridges etc)	Cyan	8	
Proposed services including drainage	Grey	250	
Existing services	Orange	19	
Pavement surface treatment (Bikes, buses, pedestrian etc)	By Level	By Level	No change to colours. Transparency to be applied.

Scale Guidelines

Road Lighting Plans shall maintain the same sheet layout, scale and chainage presentation as Alignment Plans, refer to section 17.3.5.

Selection Criteria	Scale
Environment where details are sparse and lighting design is straight forward	1:1000
Intersection environment where details are sparse and lighting design is straight forward	1:500

20 Geotechnical Discipline Standards (Level 2)

20.1 Introduction

This Section specifies the discipline-specific requirements that shall apply for Geotechnical drawings. Geotechnical drawings shall comply with the Level 1 drawing requirements outlined in Sections 4 to 8.

Geotechnical elements related to structures, e.g., bridge piling or retaining walls should be documented within the structural drawing sets using the Civil Structural Discipline Standards outlined in Section 10.

20.1.1 Geotechnical Drawing Types

Table 49 outlines Typical Drawing Types which may be produced throughout project delivery which will be inserted in the drawing title block for this discipline. The table also outlines Drawing Types which shall be updated to 'As-Built' status and submitted to DMS.

Table 49 Geotechnical Typical Drawing Types

Design Package	Drawing Type	As-Built Required	Comments
Geotechnical	Cover Sheet	Y	
Geotechnical	Index	Y	Not Required if Index sheet can be combined with Cover Sheet where space permits
Geotechnical	Legend and General Notes	Y	Not Required if Legend and General Notes combined onto 1 drawing where space permits
Geotechnical	Locality Plan	Y	
Geotechnical	Test Site Location Plans and Inferred Longitudinal Geological Sections	Y	
Geotechnical	Ground Movement Monitoring Instrumentation and Layout	Y	
Geotechnical	Slope Stability	Y	
Geotechnical	Ground Improvement	Y	

20.2 Drawing Content

All Geotechnical drawings shall use in-ground unit of metres.

20.2.1 Line Styles

Line Styles as detailed in Appendix Q – Layers / Levels shall be used.

If additional Line Styles are required, a request shall be submitted to DMS, via email, for the Line Styles intended to be used to be approved by DTP/DMS.

20.2.2 Levels

The Levels defined in Appendix Q – Layers / Levels shall be used on Geotechnical drawings.

All elements shall be drawn using the Levels defined with the Colour, Line Styles and weight set to By Level.

Levels shown containing the character 'X' in the level name have been set aside for project-specific content as required. Where project specific Levels are required, they shall be in the format of J-D-xxxx-xxxx. J-E-xxxx-xxxx, J-LS-xxxx-xxxx. J-XS-xxxx-xxxx or J-X-xxxx-xxxx

20.2.3 Cells

The Cell Library detailed in Table 50 shall be used for all Geotechnical Drawings. Refer to Road Discipline Section 17.2.3 for additional cell libraries.

Table 50 Geotechnical Cell Library

Infrastructure	Cell Library
Geotechnical	Geotech.cel

20.2.4 Presentation

Refer to Road Discipline Section 17.2.4 for guidance on drawing presentation.

20.3 Detailed Requirements for Geotechnical Drawing Types

20.3.1 Test Site Location Plans and Inferred Longitudinal Geological Sections

The Test Site Location Plans are used to locate the position of all field based geotechnical investigations, including boreholes, boreholes with standpipes, test pits, Dynamic Cone Penetration tests, Pavement Dipping's etc relative to the road functional layout.

The Inferred Longitudinal Geological Sections are used to provide a visual representation of the inferred geological profile and compare it with the road longitudinal section and any associated structures.

The Test Site Location Plans and Inferred Geological Sections can be combined into a single plan, showing both plan and elevation.

Where the test site location and Longitudinal geological sections relate to a structure, the footprint of the foundations must be overlain

For the Test Site Location Plans, the following information should be displayed:

- Road alignment / functional layout, including batters (if available)
- Feature survey or recent aerial photography base information
- North point
- Road Names
- Design Lines and Chainages
- Limits of Work
- ROW Boundary
- Legend

The Inferred Geological Sections are usually developed from the road longitudinal section and includes all of the relevant information nominated in Section 17.3.7.

The inferred geological profile is overlayed on the road longitudinal section and typically includes the following additional information:

- Borehole, test pit, DCP etc number
- Borehole details including description, strength descriptors and geological origin in accordance with AS1726
- Legend
- Colour coding of geological materials
- Notes

Scale and Chainage Guidelines

Test Site Location Plans typically adopt the same sheet layout, scale and chainage presentation as Alignment Plans, refer to section 17.3.5.

The Inferred Geological Sections typically adopt the same the same sheet layout, scale and chainage presentation as Road Longitudinal Sections, refer to section 17.3.7.

Natural scale is preferred, where vertical exaggeration is required this must be clearly indicated.

20.3.2 Ground Movement Monitoring Instrumentation and Layout

Ground Movement Monitoring Instrumentation and Layout plans are used to locate the position of field based geotechnical instrumentation used to monitor ground movement relative to the road functional layout and surrounding ground data.

For the Ground Movement Monitoring Instrumentation and Layout plans, the following information should be displayed:

- Ground monitoring instrumentation sites and coordinates
- Road alignment / functional layout, including batters (if available)
- Feature survey or recent aerial photography base information
- North point
- Road Names
- Design Lines and Chainages
- Limits of Work
- ROW Boundary
- Legend

Information should also be provided in schedules, which must include monitoring requirements and resultant trigger levels requiring nominated actions and reference to specific supporting design reports.

Scale and Chainage Guidelines

Ground Movement Monitoring Instrumentation and Layout plans should adopt the same sheet layout, scale and chainage presentation as Alignment Plans, refer to section 17.3.5.

20.3.3 Slope Stability

A Slope Stability Drawing Set provides details of geotechnical treatments used to stabilise natural slopes that are prone to rock falls, land slips or other forms of movement. For example, these treatments include; rock netting, rock / soil anchors and other stabilisation methods.

For larger projects, the Slope Stability Drawing Set should include a Cover Sheet, Drawing Index, Locality Plan, and General Notes pages.

In a Slope Stability Drawing Set, Typical and Specific details along with treatment setout points, cross sections and longitudinal sections should be provided.

For Slope Stability plans, the following information should be displayed:

- Typical Sections
- Typical Details
- Schedules for anchors or similar
- Plan and elevation drawings with recent aerial and elevation photography backgrounds
- Slope Stability treatment locations
- Road alignment / functional layout, including batters (if available)
- North point
- Road Names
- Design Lines and Chainages
- Limits of Work
- ROW Boundary
- Legend
- Design anchor characteristic bond grout-ground strength and adopted design reduction factors
- Rockfall netting maintenance procedures, design standards and assumptions
- Reference to relevant design reports

Scale and Chainage Guidelines

Slope Stability plans typically adopt the same sheet layout, scale and chainage presentation as Alignment Plans, refer to section 17.3.5.

20.3.4 Ground Improvement

A Ground Improvement Drawing Set provides details of geotechnical treatments used to improve the in situ conditions of the work site. For example, these treatments include; geogrids, piling, stone columns, surcharging, soil mixing, drainage blankets and wick drains.

For larger projects, the Ground Improvement Drawing Set should include a Cover Sheet, Drawing Index, Locality Plan, and General Notes pages.

In a Ground Improvement Drawing Set, Typical and Specific details along with treatment setout points, cross sections and longitudinal sections should be provided.

Where a Ground Improvement drawing is produced this must be accompanied by a Ground Movement Monitoring Instrumentation and Layout drawing as detailed in Section 20.3.2.

For the Ground Improvement plans, the following information should be displayed:

- Ground improvement treatment locations
- Road alignment / functional layout, including batters (if available)
- Feature survey or recent aerial photography base information
- North point
- Road Names
- Design Lines and Chainages
- Limits of Work
- ROW Boundary
- Legend
- Existing and proposed Utility services
- Existing and proposed drainage assets (where relevant)
- Reference to relevant design reports

Scale and Chainage Guidelines

Ground Improvement plans should adopt the same sheet layout, scale and chainage presentation as Alignment Plans, refer to section 17.3.5.

Ground Improvement Longitudinal Sections should adopt the same the same sheet layout, scale and chainage presentation as Road Longitudinal Sections, refer to section 17.3.7.

21 Survey and Land Discipline Standards (Level 2)

21.1 Levels

The Levels defined in Appendix Q – Layers / Levels shall be used on Survey and Land drawings.

Existing Utility Level names indicating the surveyed Quality Level of A, B, C or D as specified in AS 5488-2013 - Classification of Subsurface Utility Information (SUI), are detailed in Appendix Q – Layers / Levels.

All elements shall be drawn using the Levels defined with the Colour, Line Styles and weight set to By Level.

22 Document Terms & References

22.1 Acronyms

Acronym	Term	Acronym	Term
AA	Ambulance Alarm	LB	Level Book
AADT	Annual Average Daily Traffic	LDG	Landing
AAPD	Approved	LEV	Level
ABUT ACCEL	Abutment Acceleration	LG	Length
AC	Alternate Current	LH / LHS	Left Hand / Left Hand Side
ACSTCMND	Acoustic Mound	LIN	Linear
AG	Agricultural	LONG	Longitudinal
GDA94	Geocentric Datum of Australia 1994	LP	Lodged Plan
GDA2020	Geocentric Datum of Australia 2020	LP	Low Point
AGGR	Aggregate	LP	Low Pressure
AHD	Australian Height Datum	LPET	Liquefied Petroleum
AIS	See definition for As-built	LV	Low Voltage
AMG	Australian Map Grid	LWM	Low Water Mark
AMG	Australian Map Grid	LUMS	Lane Use Management System
AP	Access Point	LXING	Level Crossing
APPROX	Approximate(ly)	M	Bending Moment
ARTO	Accredited Rail Transport Operator	m	Metre
AS	Australian Standard	m2	Square Metre
ASSD	Assumed Datum	MATL	Material
ASURF	Asphalt Surface	MAXL	Maximum
AUX	Auxiliary	MBN	Metropolitan Bus Network
AVE	Avenue	MCB	Main Circuit Board
AVG	Average	MEN	Main Earth Neutral
BCT	Breakaway Cable Terminal	MGA	Map Grid Australia
BDS	Bluetooth Data Station	MH	Manhole
BIT	Bitumen	MIN	Minimum
BITCONC	Bituminous Concrete	MISC	Miscellaneous
BITSEAL	Bituminous Seal	ml	Millilitre
BK	Brick	mm	Millimetre
BKV	Brick Veneer	mm2	Square Millimetre
BL	Building Line	mm3	Cubic Millimetre
BLDG	Building	MPa	Mega Pascal
BLK	Block	MRN	Metropolitan Rail Network
BM	Bench Mark	MS	Mild Steel
BOT	Bottom	MSL	Mean Sea Level

Acronym	Term	Acronym	Term
BPD	Bicycles per Day	MTG	Mounting
BRG	Bearing	MTN	Metropolitan Tram Network
BS	British Standard	MUN	Municipal
BTNK	Between Kerbs	NEG	Negative
C/C or C to C	Centre to Centre	NJ	New Jersey
CAD	Computer – Aided Design	No	Number
CC	Centre of Circular Arc	NPT	New Peg & Trench
CCR	Coarse Crushed Rock	NS	Natural Surface
CCTV	Close Circuit Television	NS	Nominal Size
CFLB	Combined Field & Level Book	NTS	Not to Scale
CG	Centre of Gravity	NTS	Network Technical Standard
CH	Chainage	OA	Overall
CI	Cast Iron	OBV	Obvert
CIRC	Circle	OD	Outside
CIRCARC or CA	Circular Arc	OD	Outside Diameter
CJ	Construction Joint	OH	Overhead
CK	Creek	OPT	Old Peg & Trench
CL	Cement Lined	P	Shift Distance
CL	Centre Line	P&R	Post & Rail
cm2	Square Centimetre	P&W	Post & Wire
cm3	Cubic Centimetre	PAVT	Pavement
m3	Cubic Metre	PDF	A file format created by Adobe that allows a document to be viewed but not altered
COEF	Coefficient	PED/XING	Pedestrian/Crossing
CONC	Concrete	PERM	Permanent
CONSOL	Consolidated	PH	Pillar Hydrant
CONSTR	Construction	PL	Plate
COORD	Co ordinate	POS	Point of Supply
CP	Change Point	PSM	Permanent Survey Marking
CS	Circular Arc to Spiral	PTN	Public Transport Network
CST	Crest	PVC	Polyvinyl Chloride
CT	Circular Arc to Tangent	QTY	Quantity
CTC	Circular Arc through Tangent to Circular Arc	R / RHS	Right / Right Hand Side
CTR	Centre	Rad	Radian
CULV	Culvert	RAD	Radius
CV CTP	Commercial Vehicle Common Tangent Point	RAM	Reliability, Availability, Maintainability
dB	Decibel	RBN	Regional Bus Network
DB	Distribution Box	RC	Reinforced Concrete

Acronym	Term	Acronym	Term
DC	Direct Current	RCBOX	Reinforced Concrete Box
DECELLANE	Deceleration Lane	RCN	Regional Coach Network
DGN	A file format created by MicroStation	RCP	Reinforced Concrete Pipe
DHV	Design Hourly Volume	RD	Road
DIA	Diameter	REF	Reference
DIM	Dimension	REINF	Reinforced (-ing)
DIST	Distance	REQD	Required
DLS	Dept Crown Lands & Survey	RES	Reserve (d)
DR	Drain	RIV	River
DRENT	Drainage Easement	RL	Reduced Level
DRWY	Driveway	RLY	Railway
DTP	Department of Transport and Planning	RM	Reference Mark
DWG	A file format created by AutoCAD	ROW	Right of Way
DWG or DRG	Drawing	RP	Reference Peg
E BIT or EB	Edge of Bitumen	RPEV	Registered Professional Engineer in Victoria
EFORM or EF	Edge of Formation	RRN	Regional Rail Network
ELEC	Electric	RTE	A Revit template file format, from which a Revit model or Revit family is created
ELEV	Elevation	RVT	A file format created by Revit
ELP	Electric Light Pole	S	Secant Distance
EMC	Electromagnetic Compatibility	SB	Stadia Book
EMT	Easement	SC	Spiral to Circular Arc
EWP	Earthenware Pipe	SCHED	Schedule
EXST	Existing	SECT	Section
EXWY	Expressway	SEP	Side Entry Pit
F/P	Footpath	SERVRD	Service Road
F/S	Finished Surface	SEW	Sewer
FA	Fire Alarm	SEW & DR EMT	Sewerage & Drainage Easement
FB	Field Book	SFAIRP	So Far As Is Reasonably Practicable
FC	Field Cabinet	SHLD	Shoulder
FDS	Freeway Data Station	SI	International System of Unit
FIG	Figure	SMOF	Single Mode Optical Fibre
FCR	Fine Crushed Rock	SP	Survey Plan
FL	Fence Line	SPEC	Specification
FL	Flood Level	ST	Street
FLG	Flange	STA	Station
FP	Fire Plug	STAB	Stabilised
FRS	Freeway Ramp Signal	STC	Spiral through Tangent to Circle

Acronym	Term	Acronym	Term
FSL	Full Supply Level	STD / SND	Standard
FWY	Freeway	STL	Steel
g	Gram	STR	Structure
GALV	Galvanise (d)	STS	Spiral through Tangent to Spiral
GALVI or GI	Galvanised Iron	SUBDIV	Subdivision
GD	Grid	SURF	Surface (ing)
GIS	Geographic Information System	SV	Stop Valve
GL	Ground Level	T	Tangent Distance
GPW	Guide Post Widening	t	Tonne
GR	Guard Rail	TIRTL	The Infrared Traffic Logger
h	Hour	TBM	Temporary Bench Mark
ha	Hectare	TC	Tangent to Circular Arc
HD	Heavy Duty	TEM	Traffic Engineering Manual
Head, TfV	Head, Transport for Victoria	TP	Tangent Point
HORIZ	Horizontal	TRAN	Transition
HP	High Pressure	TRAV	Traverse
HT or HGT	Height	TRIG MER	Trigonometric Meridian
HTS	High Tensile Steel	TRIG STA	Trigonometric Station
HV	High Voltage	TRUE MER	True Meridian
HWM	High Water Mark	TS	Tangent to Spiral
HWY	Highway	TYP	Typical
ID	Identification	UG	Underground
IL	Invert Level	v	Design Speed (m/s)
INT	Internal	V	Design Speed (km/h)
INTER	Intermediate	VC	Vertical Curve
INV	Invert	VERT	Vertical
IO	Inspection Opening	VOL	Volume
IP	Intersection Point	VPD / VPH	Vehicles per Day/per Hour
IRR	Irrigation	VMS	Variable Message Sign
ITPS	Initial Treatment Prime & Seal	VSLS	Variable Speed Limit Sign
ITS	Intelligent Transport Systems	VTS	Victorian Transport System
JP	Junction Pit	W	Wide (Width)/ing
K	Kerb	WB	Weatherboard
K/L	Kerb Line	WH	Waterhole
KC	Kerb and Channel	WI	Wire (s)
KD	Kerb Dried	WL	Water Level
kg	No Kilogram	WT	Weight
km	Kilometre	XFALL	Crossfall
km/h	Kilometre per Hour	XJNG	Crossing

Acronym	Term	Acronym	Term
km2	Square Kilometre	XOVER	Crossover
kPa	Kilopascal	XRD	Crossroad
kV	Kilovolt	XSEC	Cross Section
L	Litre		

22.2 Terminology

Term	Description
Department of Transport and Planning	Means the Victorian (Australia) Department of Transport and Planning.
Electromagnetic Compatibility	Refers to the ability of electrical equipment and systems to function acceptably in their electromagnetic environment. This includes not being affected by external interface and not outputting interference that prohibits other devices from function.
Head, Transport for Victoria	The Head, Transport for Victoria is administered by the Department of Transport and Planning (DTP). The Head, Transport for Victoria has replaced VicRoads (Roads Corporation) as the responsible road authority for freeways and arterials roads.
Metropolitan Bus Network	Means the Melbourne metropolitan bus network.
Metropolitan Rail Network	Means the Melbourne metropolitan rail network (which currently includes all electrified lines, plus the Stony Point line) operated my Metro Trains.
Metropolitan Tram Network	Means the Melbourne tram network operated by Yarra Trams.
Network Technical Standard	Refers to a type of technical standard which prescribes the requirements regarding a transport assets or systems functions, “non-functions” (i.e. qualitative characteristics) and design constraints at the network-level. The purpose of such standards is to facilitate the compatibility, interoperability, constructability and consistency of, and between, transport assets, systems and modes.
As-built	‘As-built’ or ‘As-in-Service’ (AIS) is interchanged in this document. A Drawing is considered ‘As-in- Service’ when it accurately reflects what exists in the field.
Block	A collection of objects that are combined into a single named object in AutoCAD
Digital Signature	A digital code encrypted to a document to verify its contents and owner’s identity
Drawing Authoriser	This person is nominated from within an ARTO and is responsible for authorising the booking in of As-Built drawings into the DMS according to DMS processes.
Drawing Certifier	This person certifies that the Drawing is an accurate representation of actual As-In-Service conditions. This person is not certifying the design.
Copied Out	A PDF that is downloaded on to the user’s computer from the DMS website is referred to as ‘Copied Out’. PDF files of engineering drawings are accessible via the DMS website and can be viewed online and/or downloaded by approved DMS users.
DMS	Drawing Management System. The system and processes that shall be used for drawing control, management, and maintenance of infrastructure drawings. It also includes the web-based system that provides accessibility to PDF files of engineering drawings via the internet.
Dropped Element	Refers to a MicroStation command to break up an Element(s) into simpler components (See: MicroStation help and user manual documentation).
Export Parameter File	External text file which contains conversion standards, used to export an RVT file to a DWG file
Family	Components used in Revit to build a model.

Term	Description
File Fenced	Refers to a MicroStation command to put a fence around the drawing and bringing in all the references as one file.
In Service	In Service or “As-Built” refers to a drawing that reflects the final constructed works on site after it has been checked and/or tested by all relevant parties (i.e. test engineers, maintainers, etc.).
Merge	Refers to a MicroStation command to copy all models from one or more .DGN files (the ‘source’ file) to another (the ‘destination’ file) (See: MicroStation help and user manual documentation).
Native	Native file format is the program used to generate the file, either MicroStation or AutoCAD.
Nested Family	In Revit, a family with any number of families which are loaded into it
Parameter	User defined variables which have effect on the properties of a family
PASS Assets	The State of Victoria’s Asset Register of fixed Rail Infrastructure, presented via a GIS.
Revit	A Building Information Modelling (BIM) software
Terminology	Definition
The Map Grid of Australia	The Map Grid of Australia is a Universal Transverse Mercator (UTM) projection based upon the Geocentric Datum of Australia (GDA). The continent is divided up into zones which have a width of six degrees of longitude.
Traffic Engineering Manual	The Traffic Engineering Manual are supplements to Austroads guides and must be read in conjunction with the national Austroads and Australian Standards documents.
Redrawn drawing	A drawing where the presentation has been updated to comply with the current drawing standards. The infrastructure represented in the drawing may or may not have changed.
Revised drawing	A drawing where either the infrastructure represented in the drawing has been changed or changes have been made to text in the drawing.
Shared Parameter File	External Text file, linked to a Revit file which determines a number of variables, which can be scheduled.
Tag	A tag is a defined data (See: MicroStation Help and User Manual documentation).
View	A CAD drawing can have several views with in one drawing (See: MicroStation Help and User Manual documentation).

22.3 References

No.	ID/Ref	Title
n/a	n/a	n/a

22.4 Statutory Requirements

The following legislation was used in the development of this standard.

Title	Reference
Aboriginal Heritage Act 2006 (Victoria)	http://www.legislation.vic.gov.au
Disability Discrimination Act 1992	http://www.legislation.vic.gov.au
Environment Protection and Biodiversity Conservation Act 1999	http://comlaw.gov.au
Essential Services Commission 2001	http://www.legislation.vic.gov.au
Heritage Act 1995 (Victoria)	http://www.legislation.vic.gov.au
National Code of Construction of Australia, with referenced Australian Standards	http://www.abcb.gov.au
Occupational Health and Safety Act 2004	http://www.legislation.vic.gov.au
Rail Safety National Law Application Act 2013 (Victorian)	http://www.legislation.vic.gov.au

Title	Reference
Transport (Compliance and Miscellaneous) Act 1983 (Victoria)	http://www.legislation.vic.gov.au
Transport Integration Act 2010 (Victoria)	http://www.legislation.vic.gov.au

Appendix A – Location Names and Codes sample

Refer to DMS Website for the current list of location names and associated codes including guidance notes.

The following is only a sample.

PTV Infrastructure Drafting Standards
Appendix A1 - LOCATION NAMES AND CODES (TRAINS)
Version number: Version CD
Issue Date: 3/05/2021

A Index Trains

Location Name	Code	Location Name	Code
Adelaide	ADE	Antwerp	ANP
Aircraft	ACF	Anzac	DMA
Alamein	ALM	Appleton Dock	APD
Alauda Siding	ADS	Appleton Dock Junction	ADJ
Albacutya	ALY	Appleton Dock Junction (New)	ADN
Alberton Xxx	ABX	Annuello	AVL
Albion	ALB	Ararat	ART
Albion Junction	ABJ	Arcadia	ARC
Albion Loop	ABL (changed to McIntyre) MSG	Arden	AEN
Albury NSW	ABG	Arden Street Siding	AST
Albury (SG)	ALS	Ardeer	ADR
Alfredton	AFN	Arkona	ARK
Allansford	AFD	Armadale	ARM
Allendale	ADL	Armstrong	AMG
Alphington	ALP	Ascot Vale	ASV
Altona	ALT	Ascot Vale Rd. 'G' Signal Box	AVG
Altona Junction	ALJ	Ashburton	ASH
Alumatta	AMT	Aspendale	ASP
Alumatta SG Loop	AXL	Auburn	AUB
Amphitheatre	AMP	Avenel	AVE
Anstey	ASY	Avoca	AVA

B Index Trains

Location Name	Code	Location Name	Code
Bacchus Marsh	BAH	Birchip	BCP
Baddaginnie	BAG	Birchip Grain Siding	BGL
Bagshot	BST	Birchip AWB Siding	BIW
Bairnsdale	BRD	Birregurra	BXG
Balaclava	BCV	Bittern	BIT
Ballan	BNV	Blackburn	BBN
Ballarat	BAT	Boigbeat	BGT
Ballarat North Siding	BAL	Boinka	BNA
Balmattum	BLM	Bolton	BLO
Bandiana	BND	Bonbeach	BON
Bank Box Loop	BXL	Boorcan	BRC
Bannerton	BNT	Boort	BBB

PTV Infrastructure Drafting Standard
Appendix A3 - LOCATION NAMES AND CODES (Telecommunications)
Version number: Version AN
Issue Date: 17/05/2021

A Index Telecommunications

Location Name	Code	Location Name	Code
Airport	AIR	Arnold	ADZ

B Index Telecommunications

Location Name	Code	Location Name	Code
Ballarat Mt Helen	BHE	607 Bourke St, Melbourne	BSS
Baxter	BXR	628 Bourke St, Melbourne	PNH
Big Hill	BGH	Braeside	BRA
473 Bourke St, Melbourne	BSM	Breakwater	BWR
570 Bourke St, Melbourne	VLN	Bundoora	BUA
575 Bourke St, Melbourne	MLN	Burwood East	BWE

C Index Telecommunications

Location Name	Code	Location Name	Code
Carlton	CRZ	120 Collins St, Melbourne	COT
Carrum Downs	CAD	459 Collins St, Melbourne	COS
Chadstone	CHD	500 Collins St, Melbourne	CMF
Cranbourne (and Cranbourne West)	CBE	530 Collins St, Melbourne	XCM
Cudgee	CUE	595 Collins St	TPH
City West Police	PCW	700 Collins St, Docklands	COQ
55 Collins St, Melbourne	XCF	750 Collins St, Docklands	COH
80 Collins St, Melbourne	NHC		

D Index Telecommunications

Location Name	Code	Location Name	Code
Dandenong North	DAN	Docklands	DKL
Daylesford	DFD	Doncaster	DCR
Diamond Creek South	DCS		

E Index Telecommunications

Location Name	Code	Location Name	Code
East Burnley	EAB	121 Exhibition St, Melbourne	SXO
Eastlink	ELK	222 Exhibition St, Melbourne	ETT
360 Elizabeth St, Melbourne	EZM	300 Exhibition St, Melbourne	EXB
113-149 Exhibition St, Melbourne	ESM		

PTV Infrastructure Drafting Standard
Appendix A2 - LOCATION NAMES AND CODES (TRAMS)
Version number: Version AL
Issue Date: 3/02/2020

A Index Trams

Location Name	Code	Location Name	Code
Abbotsford Street	ABS	Albert Park Substation	SBP
Acland Street	AXS	Ascot Vale Road	MFA
Airport West Substation	SAP	Ascot Vale Substation	SAV
Albert Road	ABR		

B Index Trams

Location Name	Code	Location Name	Code
Bakers Road Substation	SBR	Brighton East Substation	SBT
Balaclava Road	BYR	Brunswick Depot	DPB
Ballarat Road	FHB	Brunswick Street	BUS
Barkers Road	BKR	Brunswick Road	BWF
Batman Avenue	BAX	Brunswick Substation	SBW
Berkeley Street	BKF	Brunswick East Substation	SBC
Bourke Street	BSC	Burke Road	BRX
Box Hill Substation	SBX	Bundoora Substation	SBA
Bridge Road	BZR	Burwood Highway	VCB
Bridport Street	BPS	Burwood Road	BWY
Brighton Road	BNR	Burwood Substation	SBD

C Index Trams

Location Name	Code	Location Name	Code
Camberwell Depot	DPC	Church Street Richmond	HRC
Camberwell Road	VAC	Clarendon Street	CDT
Camberwell Substation	SCZ	Clifton Hill Substation	SCF
Cameron Street	CRS	Coburg Substation	SCG
Canterbury Road	APC	Commercial Road	CMC
Carlisle Street	CIS	Collins Street	CSC
Carlton Substation	SCA	Cordite Avenue	MKC
Chapel Street	CPS	Cotham Road	CTR
Church Street Kew	HRR	Crombie Lane Substation	SCX

D Index Trams

Location Name	Code	Location Name	Code
Dandenong Road	DNR	Docklands Drive	DDC
Dandenong Road Substation	SDR	Docklands Substation	SDL
Danks Street	DXS	Domain Road	DMR
Dawson Street	DWS	Domain Substation	SDZ
Deepdene Substation	SDD	Doncaster Road	DTR
Derby Road	DBY	Droop Street	FID

Appendix B – GIS Reference

Figure B.01: Scaled Drawing Example

Figure B.02: Schematic Drawing Example.

Figure B.03: Typical Drawing Covering Single Area/Asset; Typical Cross Sections

Figure B.04: Non-Typical Drawing Covering Single Area/Asset; Single Equipment Location (Registered on PASS)

Figure B.05: Non-Typical Drawing Covering Single Area/Asset; Single Equipment Location (Not Registered on PASS)

Figure B.06: Non-Typical Drawing Covering Single Area/Asset; Single Equipment Location (Non Schematic)

Figure B.07: Typical Drawing Covering Multiple Areas/Assets; Multiple Typical Cross Sections

Figure B.08: Non-Typical Drawing Covering Multiple Areas/Assets: Multiple Line Layouts

Figure B.09: Non-Typical Drawing Covering Multiple Areas/Assets: Linear Signal Layout

Figure B.10: Non-Typical Drawing Covering Multiple Areas/Assets: Index Sheet

Figure B.11: Non-Typical Drawing Covering Multiple Areas/Assets: Longitudinal Section

Figure B.13: Non-Typical Drawing Covering Multiple Areas/Assets: Multiple Cross Sections

Figure B.14: Non-Typical Drawing Covering Multiple Areas/Assets: Legends and General Notes

Figure B.15: Non-Typical Drawing Covering Multiple Areas/Assets: General Arrangements

Figure B.16: Drawing Covering Cross Track Assets - General Arrangements

Figure B.17: Standard Drawings as an example.

Appendix B

FIGURE B.02 SCHEMATIC DRAWING EXAMPLE

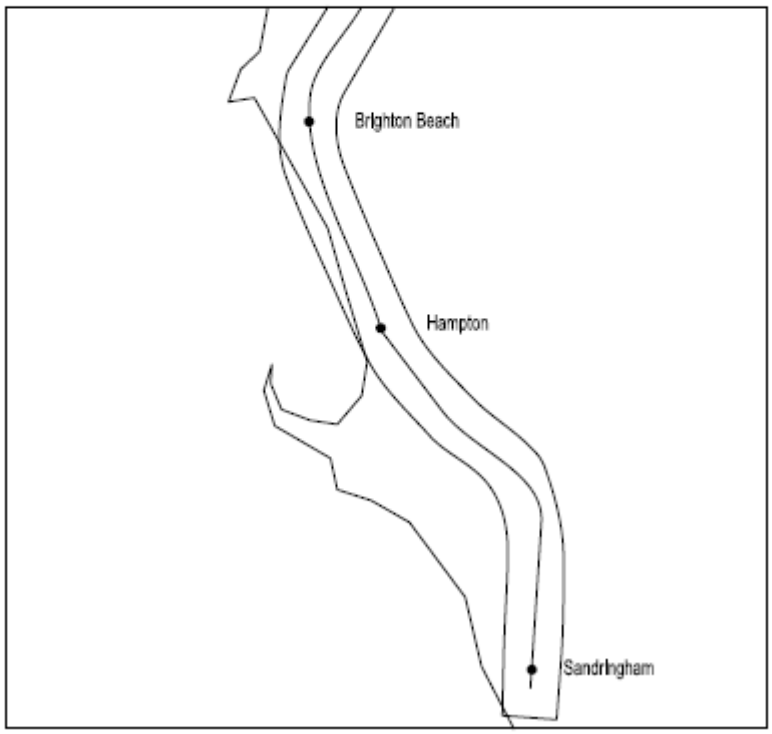


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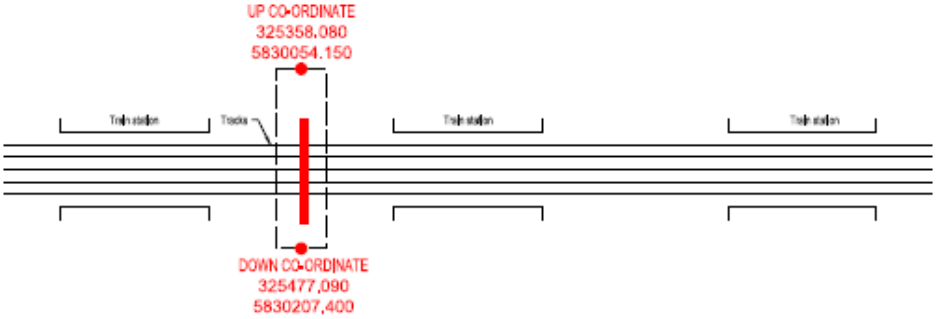
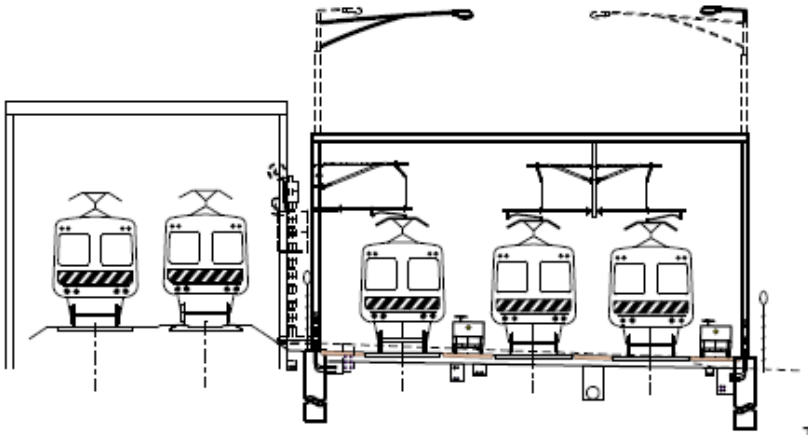
FIGURE B.03 TYPICAL DRAWING COVERING SINGLE AREA / ASSET - TYPICAL CROSS SECTIONS



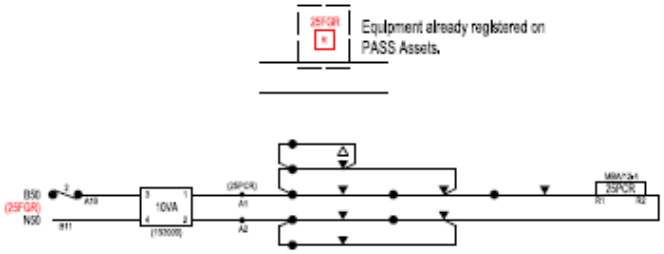


TYPICAL CROSS SECTIONS

When typical detail drawings that have only one typical detail on them is created the Up/Down co-ordinates or the up PASS ID# tags must be filled in.

Appendix B

FIGURE B.04 NON TYPICAL DRAWING COVERING SINGLE AREA / ASSET - SINGLE EQUIPMENT LOCATION (REGISTERED ON PASS)

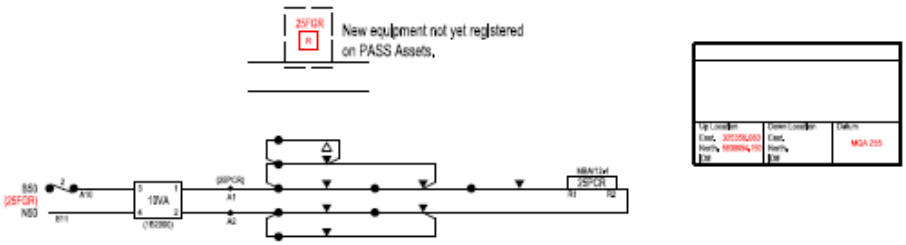


SINGLE EQUIPMENT LOCATION (REGISTERED ON PASS)

When working on an existing piece of equipment or circuit that is already registered in the PASS system, a draftsperson shall log onto PASS and obtain either the equipment's Up PASS ID# or its Up co-ordinates and enter them in the drawing title block.

Appendix B

FIGURE B.05 NON TYPICAL DRAWING COVERING SINGLE AREA / ASSET - SINGLE EQUIPMENT LOCATION (NOT REGISTERED ON PASS)

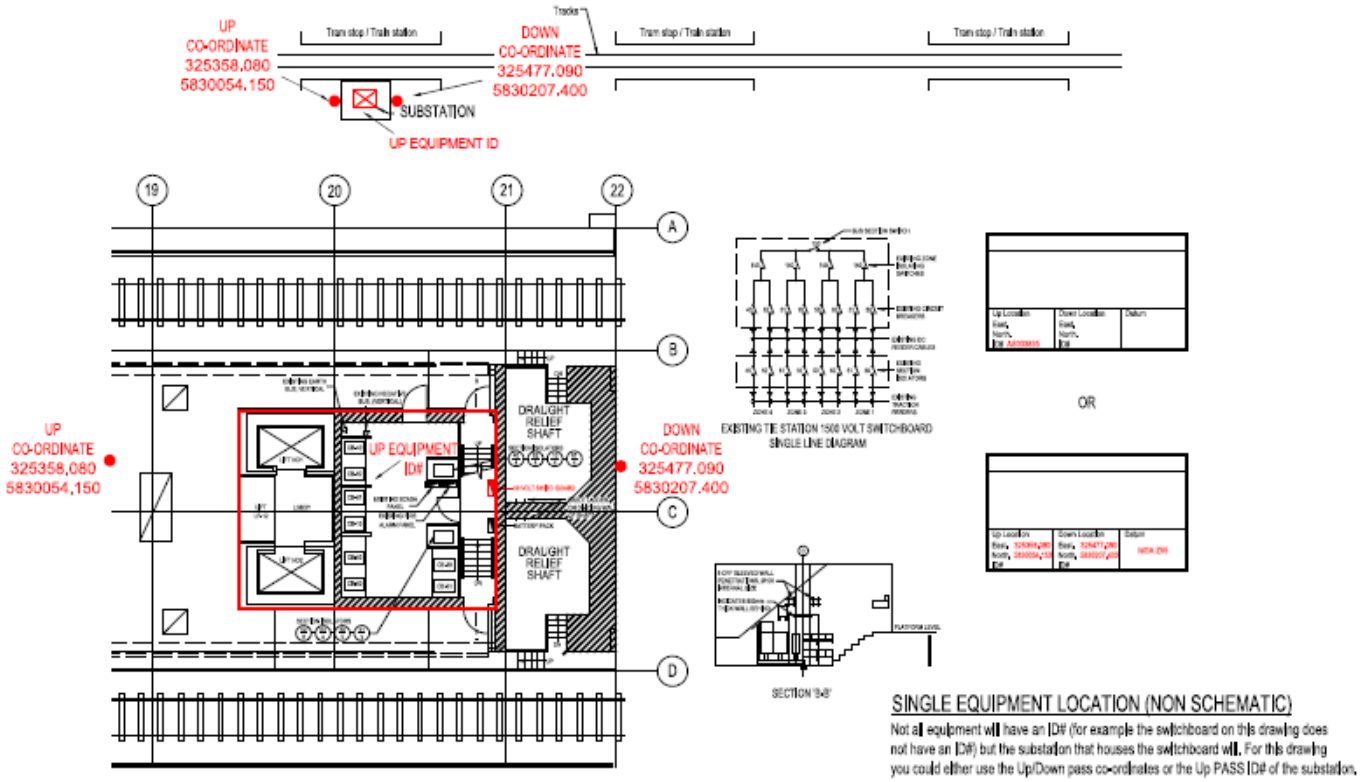


SINGLE EQUIPMENT LOCATION (NOT REGISTERED ON PASS)

When a new piece of equipment or circuit that is installed on site has not been registered on the PASS system, the construction contractor shall supply the Up Easting and Northing co-ordinates on the (In Service) mark-up so that the design office can enter the co-ordinates in the drawing title block.

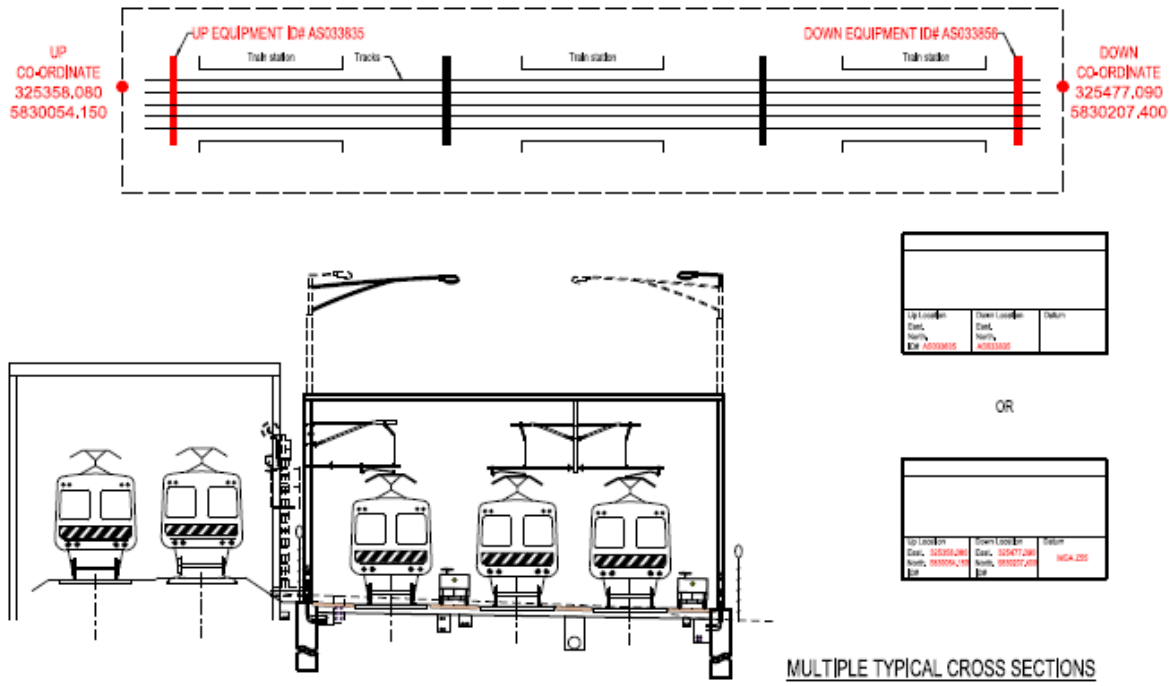
Appendix B

FIGURE B.06 NON TYPICAL DRAWING COVERING SINGLE AREA / ASSET - SINGLE EQUIPMENT LOCATION (NON SCHEMATIC)



Appendix B

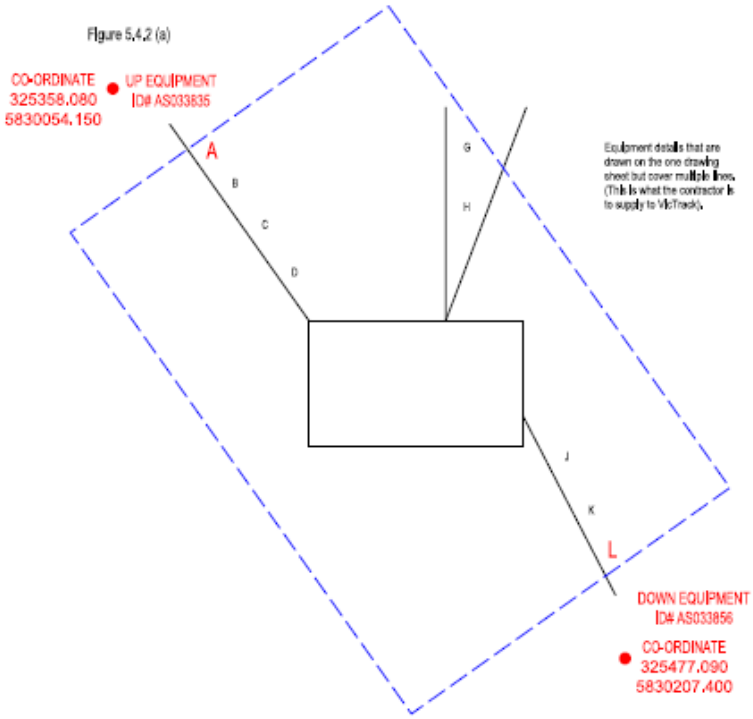
FIGURE B.07 TYPICAL DRAWING COVERING MULTIPLE AREAS / ASSETS - MULTIPLE TYPICAL CROSS SECTIONS



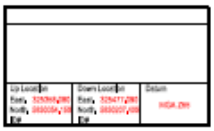
MULTIPLE TYPICAL CROSS SECTIONS

When typical/detail drawings that have more than one piece of equipment drawn on the one sheet the Up/Down co-ordinates or PASS ID# tags must be filled in. The co-ordinates should cover from the first to the last piece of equipment within the job area

FIGURE 8.08 NON TYPICAL DRAWING COVERING MULTIPLE AREAS / ASSETS - MULTIPLE LINE LAYOUTS



OR

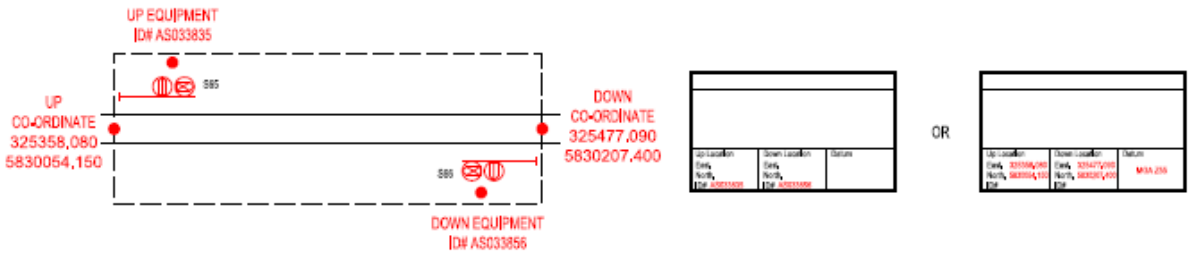


MULTIPLE LINE LAYOUT

When working on a drawing that covers more than one track on the network you can either:

- Place PASS ID# from the first piece of equipment (A) to the last piece of equipment (L).
- Place Up and Down co-ordinates that would best encompass the work.

FIGURE B.09 NON TYPICAL DRAWING COVERING MULTIPLE AREAS / ASSETS - LINEAR SIGNALS LAYOUT



LINEAR SIGNAL LAYOUT

When working on a drawing that covers a single section between two locations on the network you can either:

- Place PASS ID# from the first piece of equipment to the last piece of equipment.
- Place Up and Down co-ordinates that would best encompass the work.

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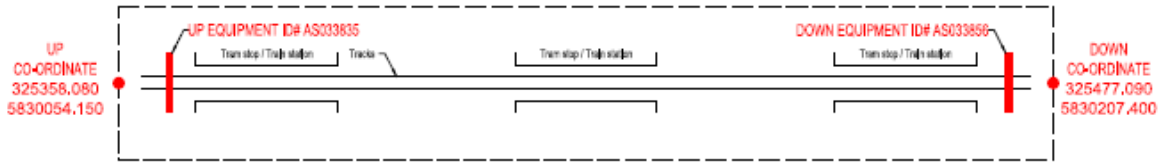
FIGURE 8.10 NON TYPICAL DRAWING COVERING MULTIPLE AREAS / ASSETS - INDEX SHEET

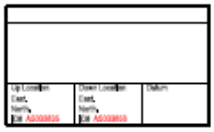


INDEX SHEET

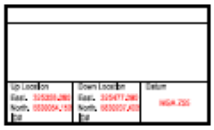
TRACK & CIVIL

446-0-TC-7230 FACE SHEET & DRAWING INDEX
446-0-TC-7233 GENERAL NOTES/LEGEND
446-0-TC-7234 PLAN SHEET ARRANGEMENT

446-0-TC-7218 TRACK, PLANS - SHEET 08
446-0-TC-7219 TRACK, PLANS - SHEET 09
446-0-TC-7220 TRACK, PLANS - SHEET 10
446-0-TC-7221 TRACK, PLANS - SHEET 11
446-0-TC-7235 TRACK, PLANS - CURVE & CROSSINGWORK SCHEDULE, SHEET 05
446-0-TC-7241 TRACK, LONGITUDINAL SECTIONS, TRACK PS03 SHEET 01
446-0-TC-7242 TRACK, LONGITUDINAL SECTIONS, TRACK PS03 SHEET 02
446-0-TC-7243 TRACK, LONGITUDINAL SECTIONS, TRACK PS03 SHEET 03
446-0-TC-7244 TRACK, LONGITUDINAL SECTIONS, TRACK PS03 SHEET 04
446-0-TC-7245 TRACK, LONGITUDINAL SECTIONS, TRACK PS02 SHEET 01
446-0-TC-7246 TRACK, LONGITUDINAL SECTIONS, TRACK PS02 SHEET 02
446-0-TC-7247 TRACK, LONGITUDINAL SECTIONS, TRACK PS02 SHEET 03
446-0-TC-7248 TRACK, LONGITUDINAL SECTIONS, TRACK PS01 SHEET 01
446-0-TC-7249 TRACK, LONGITUDINAL SECTIONS, TRACK PS01 SHEET 02
446-0-TC-7250 TRACK, LONGITUDINAL SECTIONS, TRACK PS01 SHEET 03
446-0-TC-7251 TRACK, LONGITUDINAL SECTIONS, TRACK PS01 SHEET 04
446-0-TC-7341 TRACK, CROSS SECTIONS, SHEET 01
446-0-TC-7342 TRACK, CROSS SECTIONS, SHEET 02
446-0-TC-7343 TRACK, CROSS SECTIONS, SHEET 03
446-0-TC-7344 TRACK, CROSS SECTIONS, SHEET 04
446-0-TC-7345 TRACK, CROSS SECTIONS, SHEET 05
446-0-TC-7346 TRACK, CROSS SECTIONS, SHEET 06
446-0-TC-7391 TRACK, TYPICAL TRACK CROSS SECTION,
446-0-TC-7392 TRACK, TYPICAL SECTIONS, SHEET 01
446-0-TC-7393 TRACK, TYPICAL UNDERGROUND SERVICES SECTIONS, SHEET 01
446-0-TC-7394 TRACK, TYPICAL UNDERGROUND SERVICES SECTIONS, SHEET 02
446-0-TC-7395 TRACK, DETAILS, SHEET 01
446-0-TC-7378 TRACK DRAINAGE, PLAN, SHEET 08
446-0-TC-7379 TRACK DRAINAGE, PLAN, SHEET 09
446-0-TC-7380 TRACK DRAINAGE, PLAN, SHEET 10
446-0-TC-7381 TRACK DRAINAGE, PLAN, SHEET 11
446-0-TC-7406 TRACK DRAINAGE, LONGITUDINAL SECTIONS, SHEET 16
446-0-TC-7407 TRACK DRAINAGE, LONGITUDINAL SECTIONS, SHEET 17
446-0-TC-7408 TRACK DRAINAGE, LONGITUDINAL SECTIONS, SHEET 18
446-0-TC-7409 TRACK DRAINAGE, LONGITUDINAL SECTIONS, SHEET 19
446-0-TC-7410 TRACK DRAINAGE, LONGITUDINAL SECTIONS, SHEET 20
446-0-TC-7420 TRACK DRAINAGE, PIT SCHEDULE,
446-0-TC-7421 TRACK DRAINAGE, DETAILS SHEET 01,



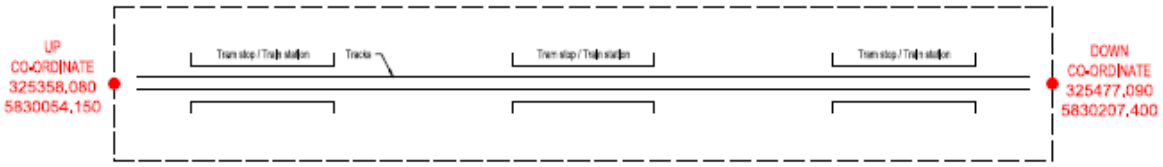
OR

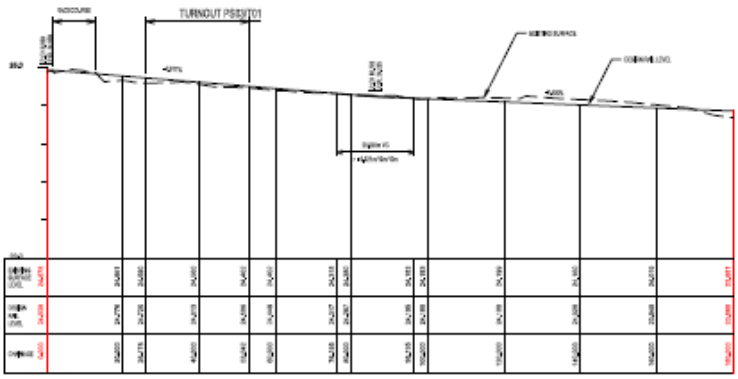


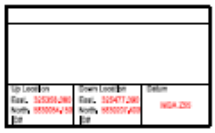
INDEX SHEET

When an Index is created the Up/Down co-ordinates or Up/Down ID# tags must be filled in. The co-ordinates should cover from the first location/equipment to the last location/equipment contained on the Index sheet.

FIGURE 8.11 NON TYPICAL DRAWING COVERING MULTIPLE AREAS / ASSETS - LONGITUDINAL SECTION





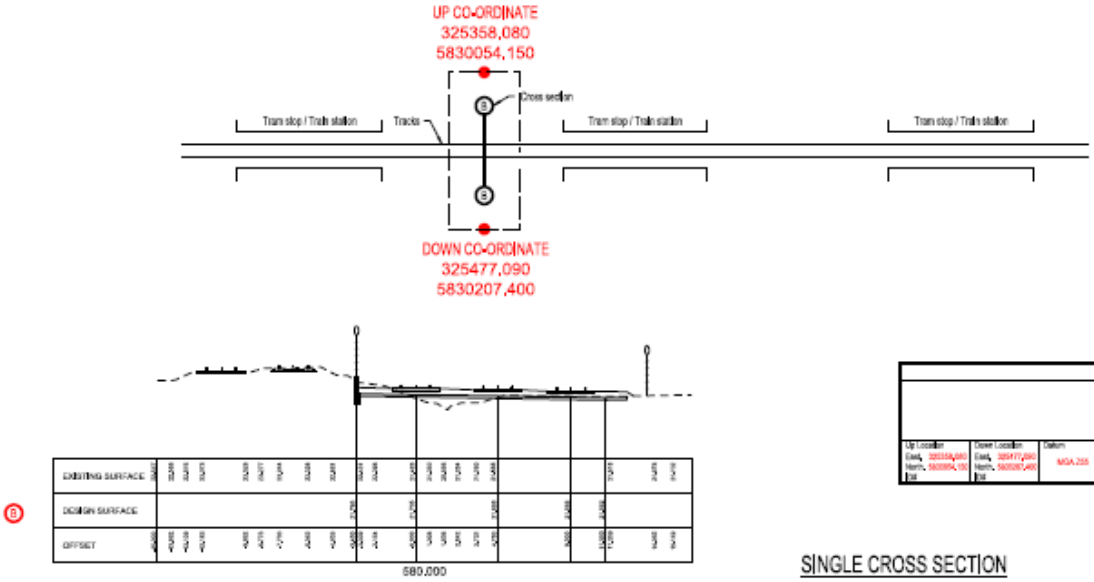


LONGITUDINAL SECTION

When longitudinal section drawings are created the Up/Down co-ordinate tags must be filled in. The co-ordinates should cover from the first to the last location contained within the longitudinal section.

Appendix B

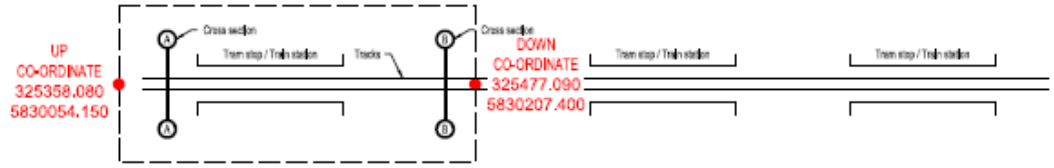
FIGURE B.12 NON TYPICAL DRAWING COVERING MULTIPLE AREAS / ASSETS - SINGLE CROSS SECTION

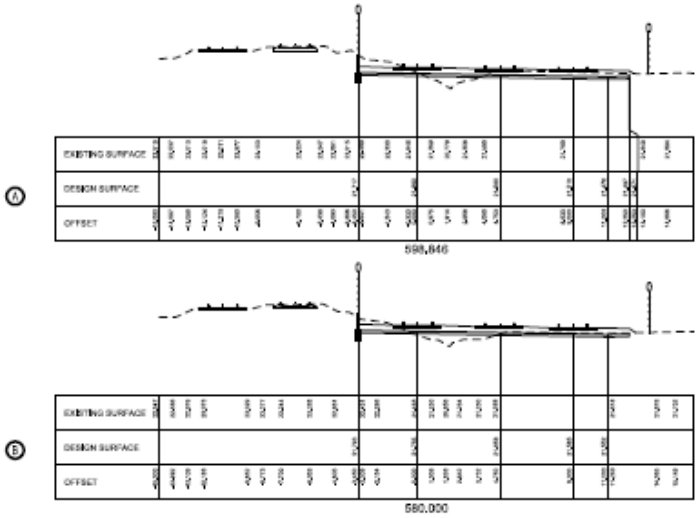


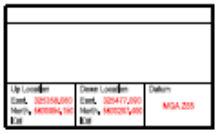
SINGLE CROSS SECTION

When cross section drawings that have only one cross section on them are created the Up/Down co-ordinates must be filled in. The co-ordinates should cover from the first location to the last location contained within the job area.

FIGURE B.13 NON TYPICAL DRAWING COVERING MULTIPLE AREAS / ASSETS - MULTIPLE CROSS SECTIONS







MULTIPLE CROSS SECTIONS

When cross section drawings that have more than one cross section on it are created the Up/Down co-ordinates must be filled in. The co-ordinates should cover from the first location to the last location contained within the drawing sheet.

FIGURE B.14 NON TYPICAL DRAWING COVERING MULTIPLE AREAS / ASSETS - LEGENDS AND GENERAL NOTES

LEGEND

EXISTING TRACK

EXISTING TRACK TO BE REMOVED

NEW TRACK - 60kg RAIL & RESILIENT FASTENINGS

53|60 NEW JUNCTION RAILS - WEIGHT kg/m

VICTRACK PROPERTY BOUNDARY

NEW PLATFORM

NEW EARTHWORKS

MAINTENANCE ACCESS TRACK

PLAN / CROSS SECTIONS - NEW CHANNIRE MESH SECURITY FENCE WITH RAZOR WIRE ALL AROUND

PLAN / CROSS SECTIONS - POST & CONCRETE SLAB RETAINING WALL

NEW STABLING PATHS

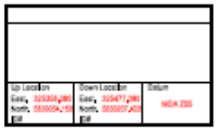
TRAINROAD SECURITY GATE

NEW OVERHEAD STRUCTURE

EXISTING OVERHEAD STRUCTURE TO BE RETAINED

GENERAL NOTES

1. ALL COORDINATES ARE TO MGA ZONE 55, LEVELS ARE TO AHD.
2. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.

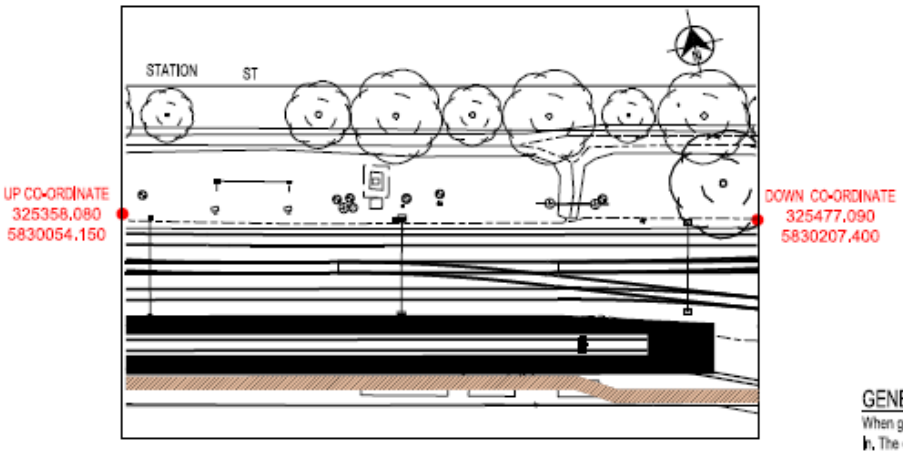


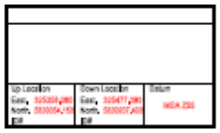
LEGENDS AND GENERAL NOTES

When legends and general note drawings are created the Up/Down co-ordinate tags must be filled in. The co-ordinates should cover from the first to the last location contained within the job area.

Appendix B

FIGURE B.15 NON TYPICAL DRAWING COVERING MULTIPLE AREAS / ASSETS - GENERAL ARRANGEMENTS



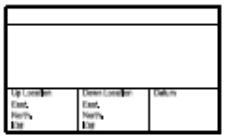


GENERAL ARRANGEMENTS

When general layout drawings are created the Up/Down co-ordinate tags must be filled in. The co-ordinates should cover from the first to the last location contained within the drawing sheet.

Appendix B

FIGURE B.16 STANDARD DRAWINGS



STANDARD PLAN

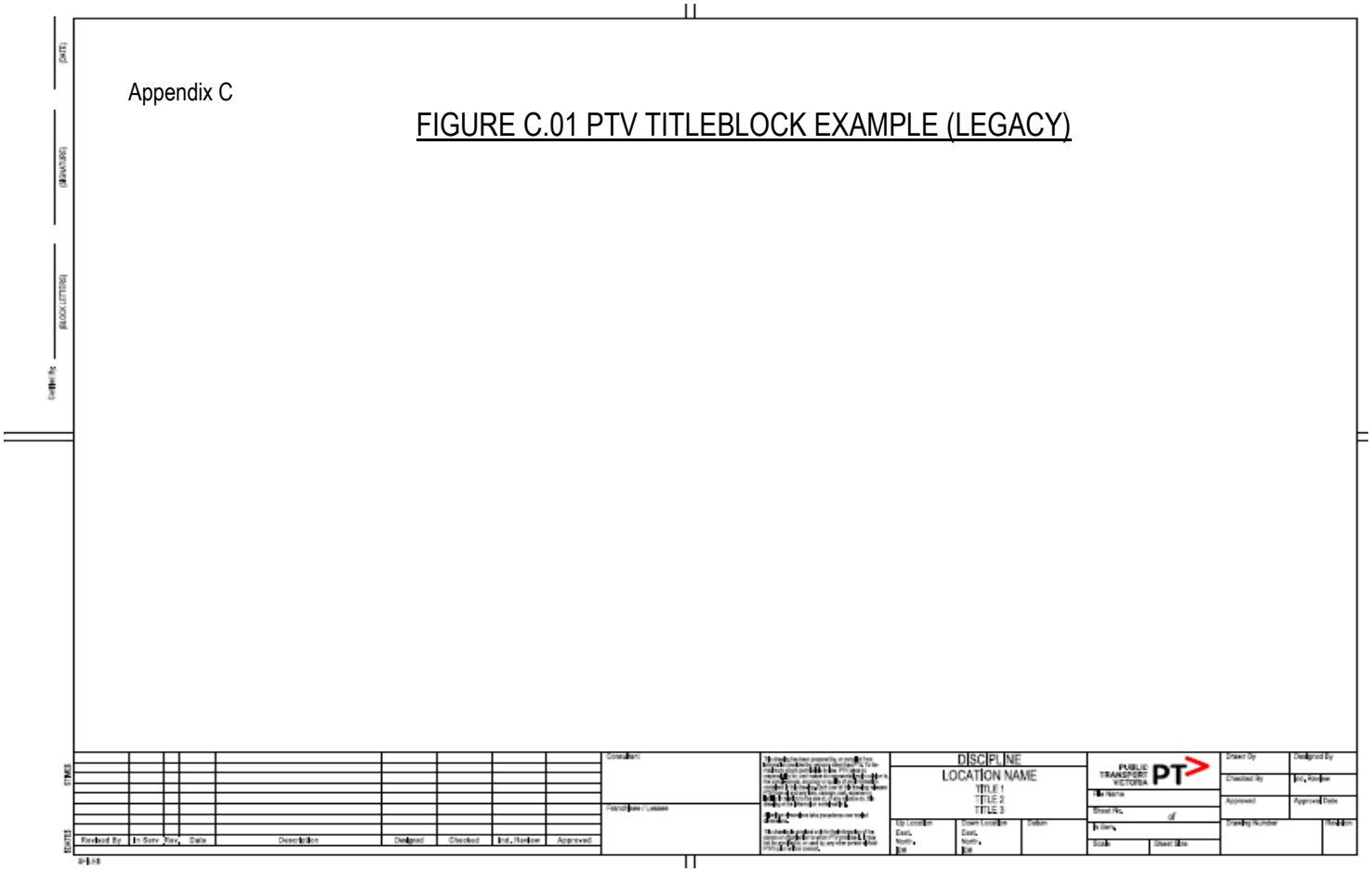
PASS Assets tags shall be left blank in the title block for standard drawings.

Appendix C - Titleblock

Index of Figures

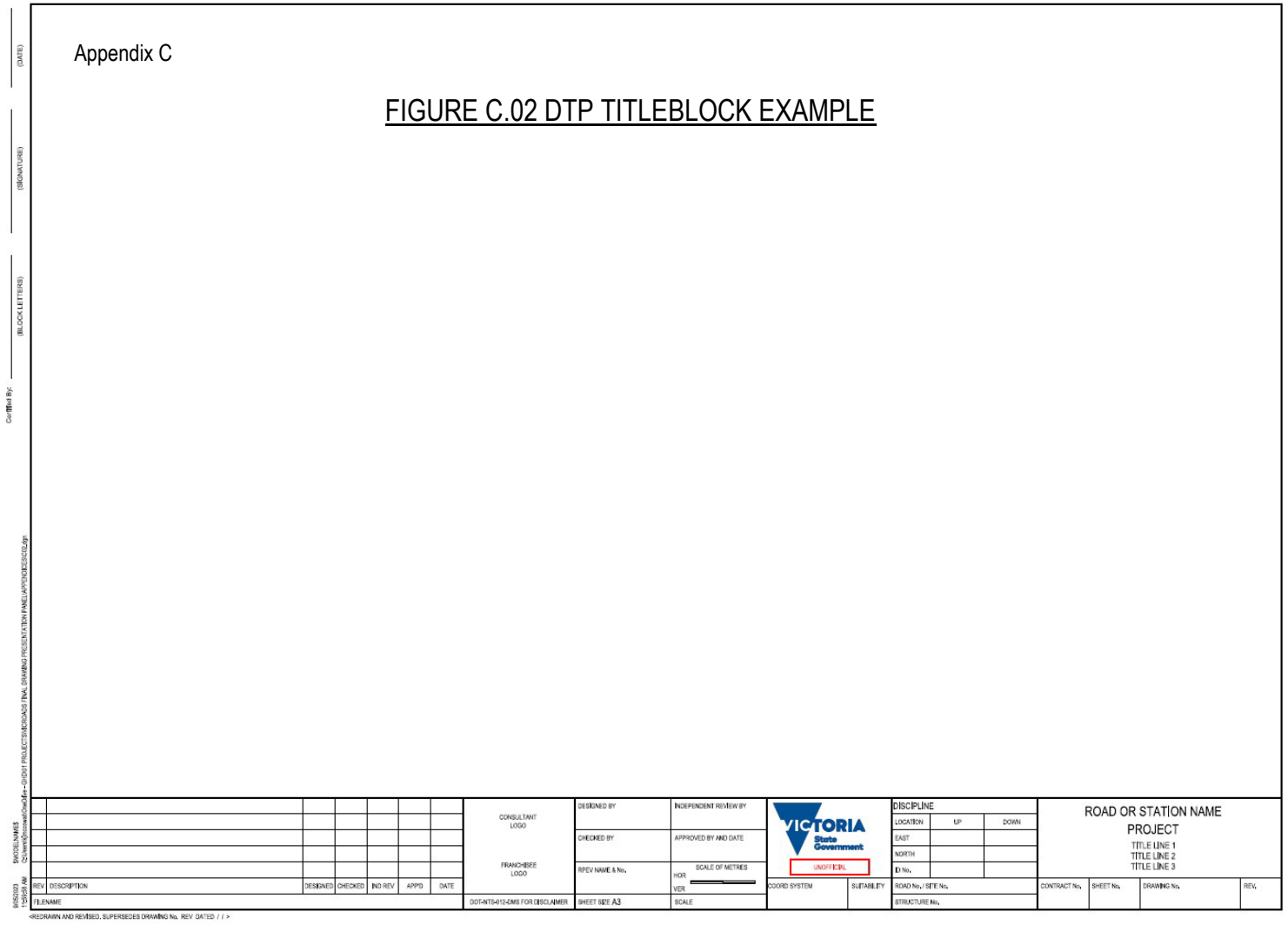
Figure C.01: PTV Titleblock Example (Legacy)

Figure C.02: DTP Titleblock Example



Appendix C

FIGURE C.02 DTP TITLEBLOCK EXAMPLE



Appendix D – Drawing Information

Index of Figures

Figure D.01: Drawing Information

Figure D.02: Pass Coordinates

FIGURE D.01 DRAWING INFORMATION – DTP TITLEBLOCK

DESIGNED BY D CITIZEN	INDEPENDENT REVIEW BY I CITIZEN	VICTORIA State Government UNOFFICIAL	SIGNALS			KENSINGTON LEVEL CROSSING REMOVAL PROJECT MACAULAY ROAD BOOM BARRIER CONTROL AND MECHANISM CIRCUITS	
CHECKED BY C CITIZEN	APPROVED BY AND DATE A CITIZEN 01/06/23		LOCATION	UP	DOWN		
RPEV NAME & No. R CITIZEN 1234	SCALE OF METRES HOR VER		EAST	325358.080	325477.090		
			NORTH	5830054.150	5830207.400		
SHEET SIZE A3	SCALE NTS		ID No.	5830054.150	325358.080		
		COORD SYSTEM MGA2020 Z55 / SUITABILITY S2	ROAD No. / SITE No.			CONTRACT No. 12345 / SHEET No. 01 OF 01 / DRAWING No. KEN_G0003 / REV. A	
			STRUCTURE No.				

FIGURE D.01 DRAWING INFORMATION – LEGACY TITLEBLOCK

SIGNALS KENSINGTON MACAULAY ROAD BOOM BARRIER CONTROL AND MECHANISM CIRCUITS			PUBLIC TRANSPORT VICTORIA PT>	Drawn By M CITIZEN	Designed By A CITIZEN
				Checked By R CITIZEN	Ind. Review S CITIZEN
			File Name KEN_G0003A.DGN	Approved M CITIZEN	Approval Date 06/06/09
Up Location East. 325358.080 North. 5830054.150 ID#	Down Location East. 325477.090 North. 5830207.400 ID#	Datum MGA Z55	Sheet No. 01 of 01	Drawing Number KEN_G0003	Revision A
			In Serv. 06/06/09		
			Scale N.T.S. / Sheet Size A3		

FIGURE D.02 PASS COORDINATES – DTP TITLEBLOCK

SIGNALS		
LOCATION	UP	DOWN
EAST	325358.080	325477.090
NORTH	5830054.150	5830207.400
ID No.	5830054.150	325358.080
ROAD No. / SITE No.		
STRUCTURE No.		

FIGURE D.02 PASS COORDINATES – LEGACY TITLEBLOCK

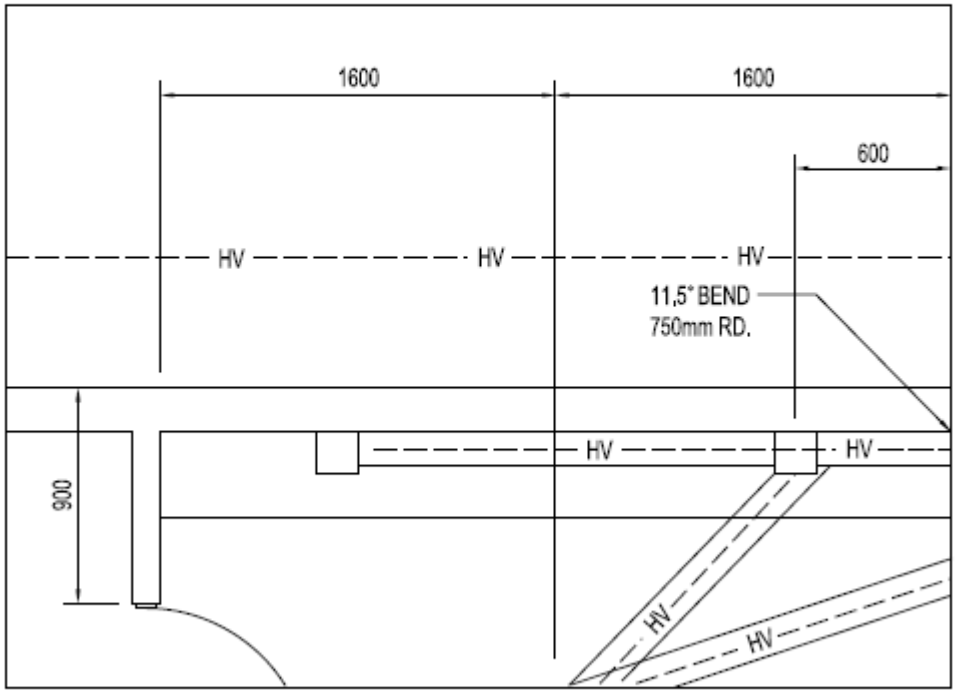
SIGNALS KENSINGTON MACAULAY ROAD BOOM BARRIER CONTROL AND MECHANISM CIRCUITS		
Up Location East. 325358.080 North. 5830054.150 ID#	Down Location East. 325477.090 North. 5830207.400 ID#	Datum MGA Z55

Appendix E – Drawing Dimensions

Index of Figures

Figure E.01: Drawing Dimensions.

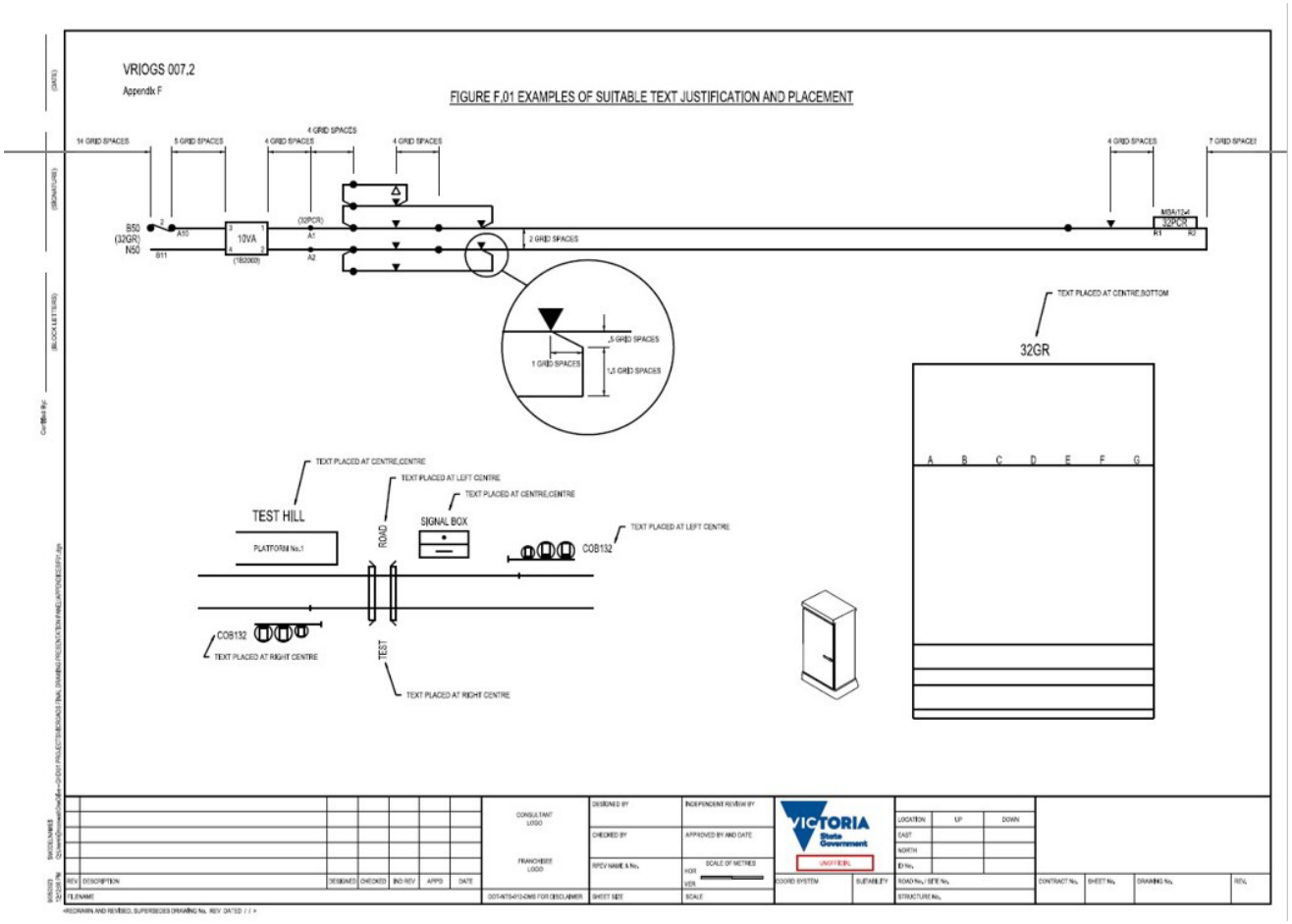
FIGURE E,01 DRAWING DIMENSIONS



Appendix F – Text Orientation

Index of Figures

Figure F.01: Examples of Suitable Text Justification and Placement



Appendix G – Signalling Levels

Index of Figures

Figure G.01: Levels – Removal Work and Figure G.02: Levels – New Work.

FIGURE G.01 LEVELS - REMOVAL WORK

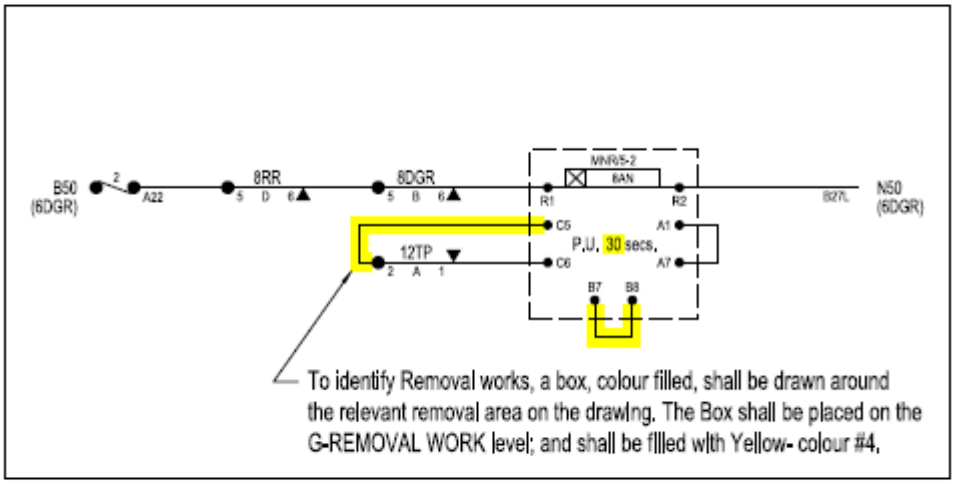
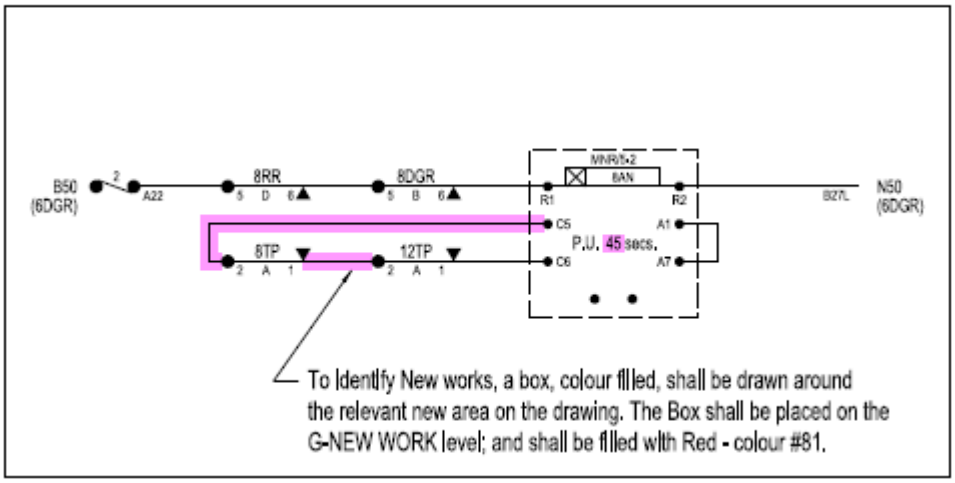


FIGURE G.02 LEVELS - NEW WORK



Appendix H – Structural Figures

Index of Figures

Figure H.01: Call – Out Lines (Note the detail shown is to indicate the 2 different call-out lines only).

Figure H.02: Reinforcement Example for Showing on Reinforcement Plans.

Figure H.03: Tie / Ligature Example for Showing on Reinforcement Plans

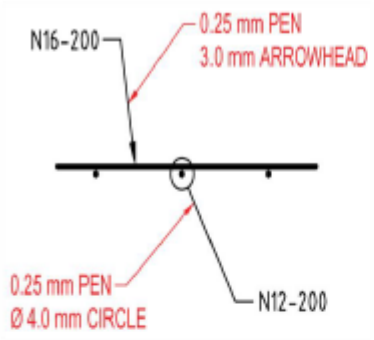


Figure H.01: Call - Out Lines

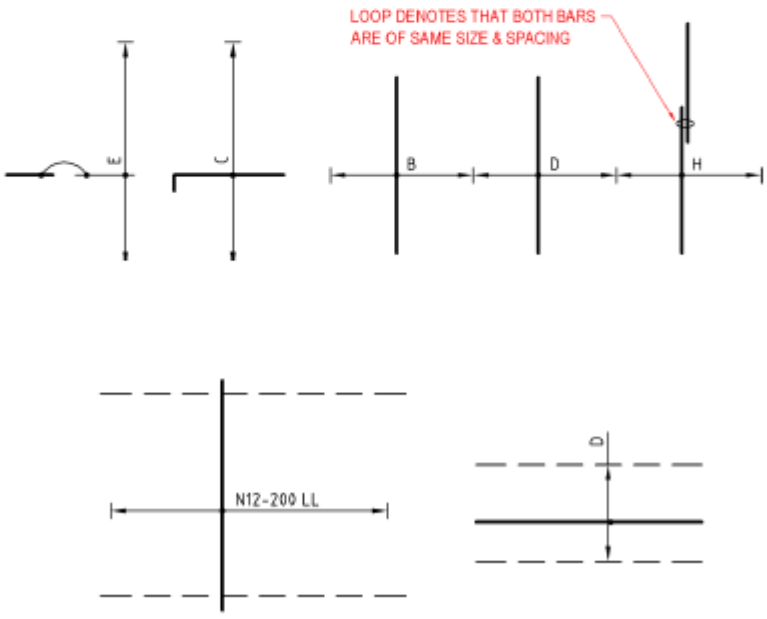


Figure H.02 Reinforcement Example for Showing on Reinforcement Plans

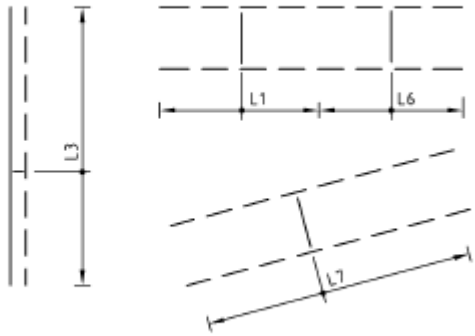
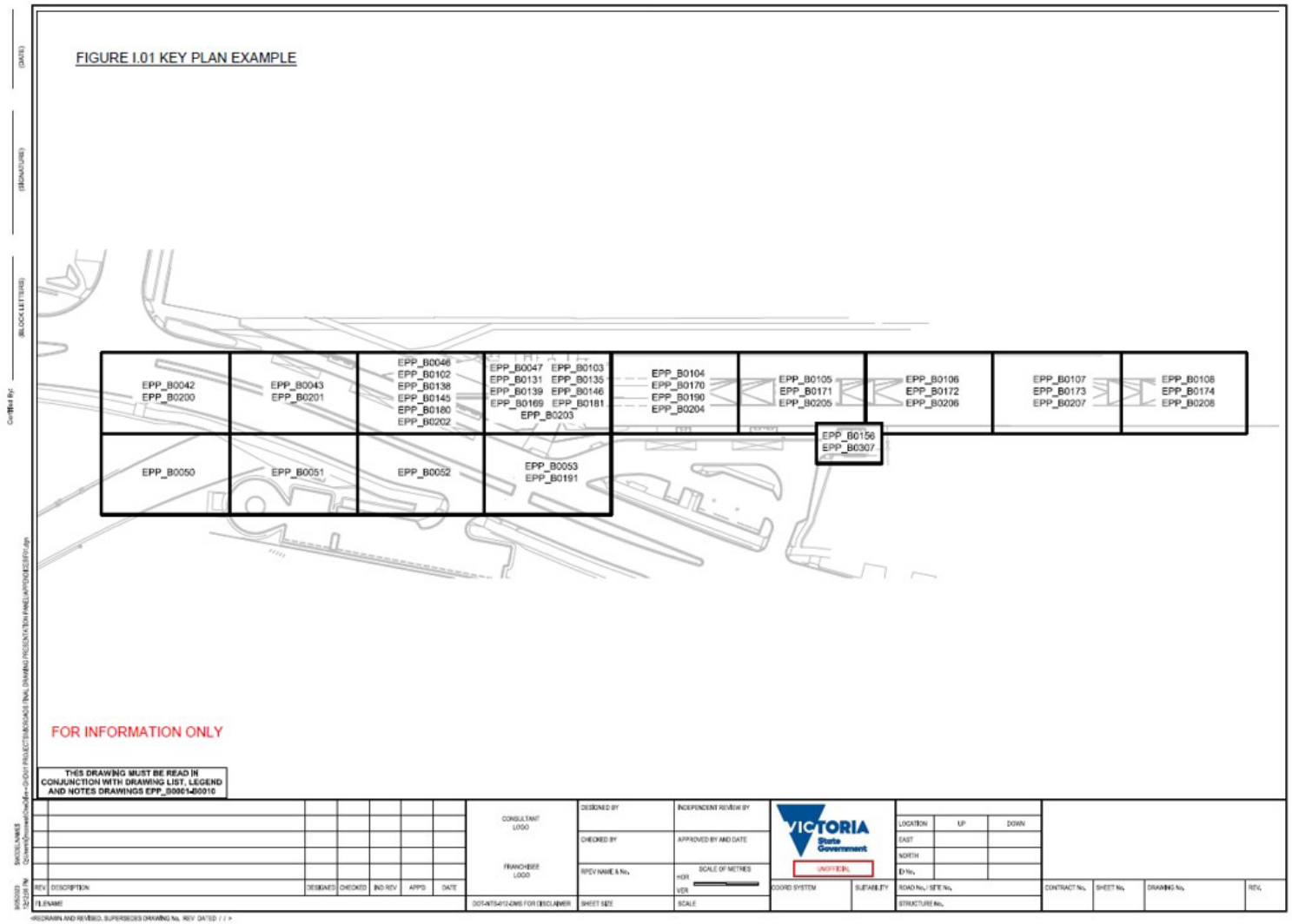
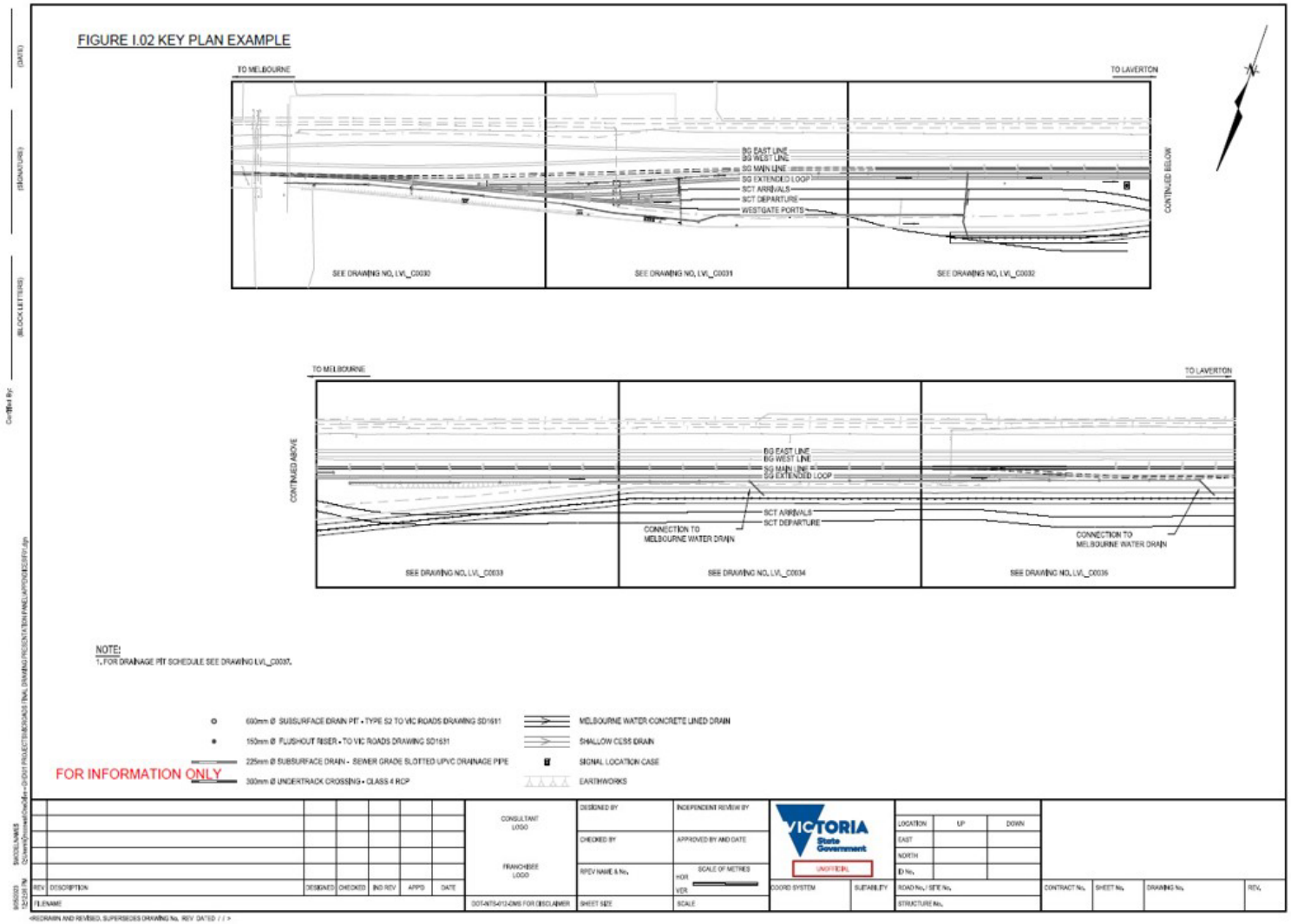


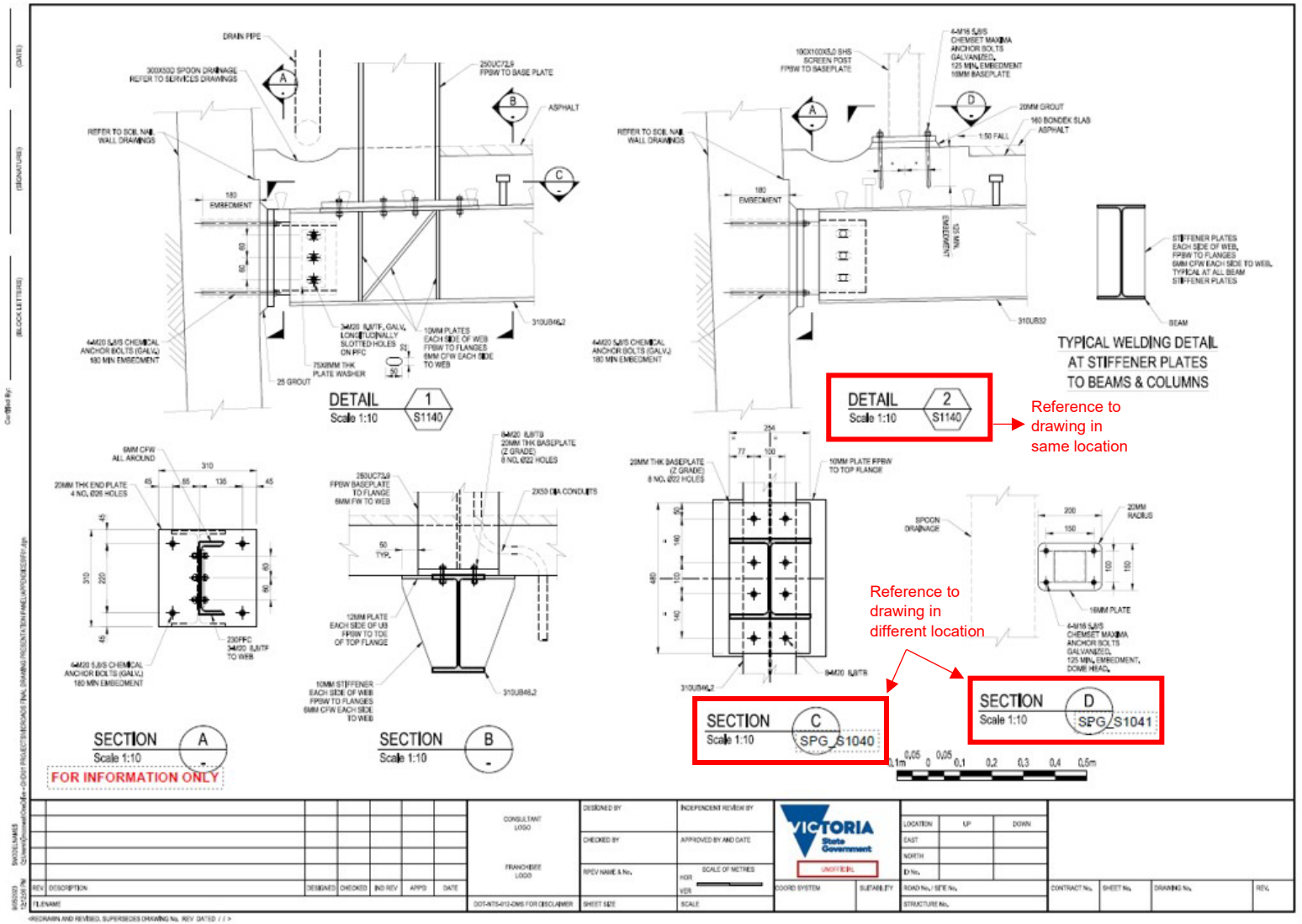
Figure H.03 Tie / Ligature Example for Showing on Reinforcement Plans

Appendix I – Key Plan

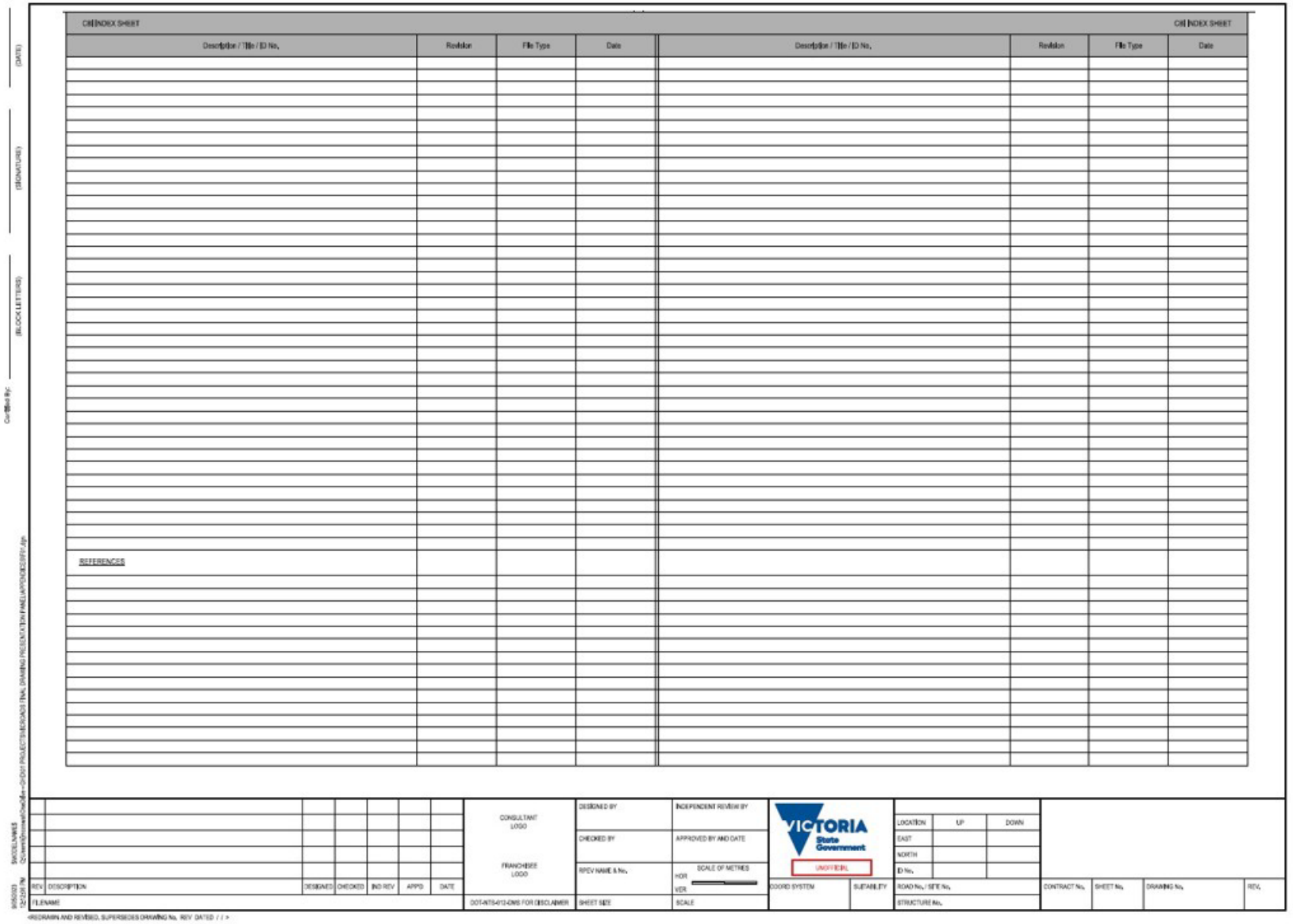




Appendix J – Section Markers



Appendix K – CBI Title Sheet



Appendix L – Signals Titleblocks

Appendix L

Drawing Description	Drawing Description	Drawing Description
Title tag 1	Title tag 2	Title tag 3
ALARM INDICATIONS	IN HSFGR	
ALARM INDICATION AXLE COUNTER,	ELD AND POWER	IN BAYSER
ALARM INDICATION AXLE COUNTER,	ELD AND POWER	IN HSFGR
ALARM INDICATIONS NETWORK	IN BAYSER	
ALARM INDICATIONS NETWORK	IN HSFGR	
APPROACH BELLS AND TIMER (S)	(HOVELL STREET 6.789 km)	IN HSFGR
APPROACH RELAYS AND BELL (S)	(HOVELL STREET 6.789 km)	IN HSFGR
APPROACH LOCKING RELAY (S)	Nos. (ANY NUMBER, E.G. 102 - 110)	IN HSFGR
APPROACH LOCKING REPEAT RELAY (S)	Nos. (ANY NUMBER, E.G. 102 - 110)	IN HSFGR
APPROACH RELAYS BOOM BARRIER (S)	(HOVELL STREET 6.789 km)	IN HSFGR
APPROACH TIME ELEMENT RELAY (S)	Nos. 102 – 110	IN HSFGR
AXLE COUNTER CONFIGURATION	No. MW054ZBACM1	IN HSFGR
BLOCK INDICATION LIGHT (S)	Nos. 102 – 110	IN HSFGR
BLOCK INDICATION RELAY (S)	Nos. 102 – 110	IN HSFGR
BLOCK REPEAT RELAY (S)	Nos. 102 – 110	IN HSFGR
BLOCK SHELF DIAGRAM (S)	IN HSFGR	
BLOCK REPEAT STICK RELAY (S)	Nos. 102 – 110	IN HSFGR
BOOM BARRIER APPROACH RELAY (S)	(HOVELL STREET 6.789 km)	IN HSFGR
BOOM BARRIER APPROACH TIMING RELAY (S)	(HOVELL STREET 6.789 km)	IN HSFGR
BOOM BARRIER APPROACH CONTROLS	AND INDICATION (S) (HOVELL STREET 6.789 km)	IN HSFGR
BOOM BARRIER MECHANISM (S)	(HOVELL STREET 6.789 km)	IN HSFGR
BOOM BARRIER CONTROL (S)	(HOVELL STREET 6.789 km)	IN HSFGR
BOOM BARRIER CONTROL (S) AND MECHANISM (S)	IN BAYSER	
BOOM BARRIER CONTROL (S) AND MECHANISM (S)	IN BAYSER	- TRAIN MAINTENANCE FACILITY
BOOM BARRIER CONTROL (S) AND MECHANISM (S)	IN HSFGR	
CABLE RUNNING PLAN (S)	(23.000 km - 25000 km)	
CABLE RUNNING PLAN (S)	ALBION - ST ALBANS (23.000 km – 25.000 km)	
CARDFILE LAYOUT	(ELECTROLOGIXS)	IN HSFGR
COMMS EQUIPMENT CABLE ANALYSIS	IN BAYSER	
COMMS EQUIPMENT CABLE ANALYSIS	IN HSFGR	
COMMS EQUIPMENT POWER AND DATA WIRING	IN BAYSER	
COMMS EQUIPMENT POWER AND DATA WIRING	IN HSFGR	
COMMS EQUIPMENT LAYOUT	IN BAYSER	
COMMS EQUIPMENT LAYOUT	IN HSFGR	
COMMUNICATIONS DATA LINK ARCHITECTURE	IN HSFGR	
CONTROL PANEL AND	TRACK INDICATION DIAGRAM (S)	IN HSFGR
DATA CONFIGURATION ACE(1)- AXLE COUNTER	IN BAYSER	
DATA LINK MODULE CONNECTIONS A AND B	IN HSFGR	
DIMMING CIRCUIT	IN HSFGR	
DIRECTIONAL STICK RELAY (S)	Nos. (ANY NUMBER, E.G. 102 - 110)	IN HSFGR
DWARF SIGNAL CONTROL (S)	Nos. (ANY NUMBER, E.G. 102 - 110)	IN HSFGR
DWARF SIGNAL MECHANISM (S)	Nos. (ANY NUMBER, E.G. 102 - 110)	IN HSFGR
EAK CONNECTIONS BAYAX13 & BAYAX14 ACE(1)	SERIAL I/O CARD – AXLE COUNTER	IN BAYSER
EARTH LEAKAGE DETECTOR	IN HSFGR	
EARTH LEAKAGE DETECTOR AND	POWER ALARM INPUT (S) (MODULE 12526)	IN HSFGR
EARTH LEAKAGE DETECTOR	ALARM INPUT (S) (MODULE 12526)	IN HSFGR
EARTHING DETAILS	IN HSFGR	

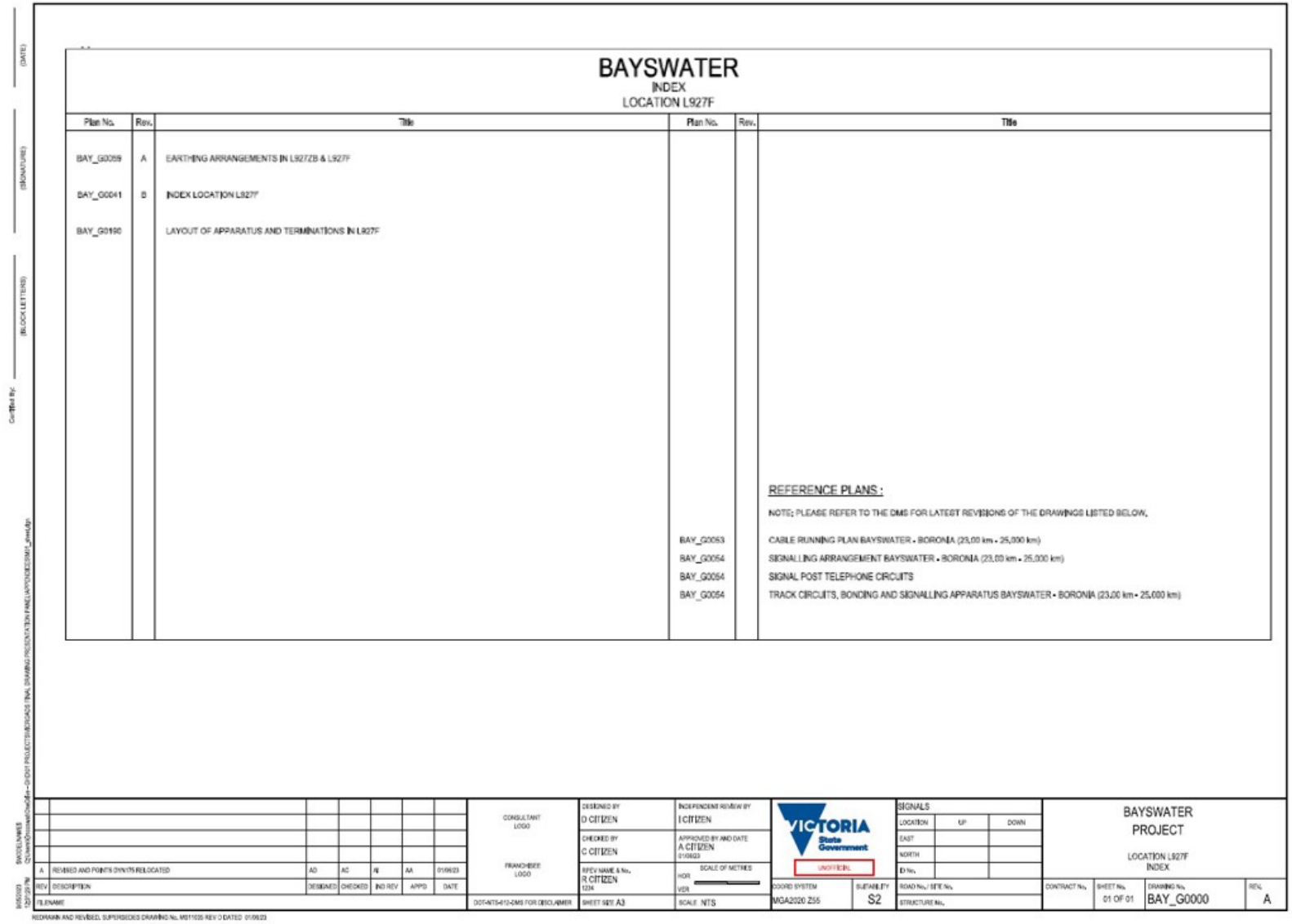
Appendix L

EARTHING ARRANGEMENTS	IN M604ZB, M604UPS AND M604HV	
FLASHING LIGHT CIRCUIT (S)	(HOVELL STREET 6.789 km)	IN HSFGR
FLASHING LIGHT CONTROL (S)	(HOVELL STREET 6.789 km)	IN HSFGR
FLASHING LIGHT MECHANISM (S)	(HOVELL STREET 6.789 km)	IN HSFGR
FLASHING LIGHT NORMAL INDICATION RELAY (S)	Nos. 1 AND 2	IN HSFGR
FOCUSING DIAGRAM (S)	(HOVELL STREET 6.789 km)	IN HSFGR
GATE CONTROL AND DETECTION BAY203	IN BAYSER	
INDEX	LOCATION L927ZB	
KEYSWITH DETECTION KSK5, KSK6 & KSK7	IN BAYSER	- TRAIN MAINTENANCE FACILITY
KEYSWITCH DETECTION AND INDICATION	KSK3 & KSK4 IN BAYSER	- TRAIN MAINTENANCE FACILITY
LAYOUT OF APPARATUS AND TERMINATIONS	AND CONTACT Nos.	IN HSFGR
LAYOUT OF APPARATUS AND TERMINATIONS	IN 26HV 3-WAY BUS	
LAYOUT OF APPARATUS AND TERMINATIONS	IN F418GB	
LAYOUT OF APPARATUS AND TERMINATIONS	IN SOUTHERN CROSS RELAY ROOM – RH1J RACK	
LAYOUT OF APPARATUS AND TERMINATIONS	IN BAYSER – AXLE COUNTER RACK	
LAYOUT OF 110 V AC SWITCHBOARD	AND TERMINATION DETAILS	IN 604UPS
LAYOUT OF TERMINATIONS	IN L450J	
LAYOUT OF TRACK RESET PANEL	IN BAYSER – AXLE COUNTER RACK	
LAYOUT OF APPARATUS AND TERMINATIONS	IN BAYSER – WESTRACE MKII TERMINATION RACK	
LAYOUT OF HOUSING 1 AND 2	IN BAYSER – AXLE COUNTER RACK	
LOM110 WESTRACE MKII CARD ANALYSIS	IN BAYSER	
MODULE ANALYSIS	(ELECTROLOGIXS)	IN HSFGR
ODLIU MODULE CONNECTION A AND B	IN HSFGR	
PEDESTRIAN CROSSING UP APPROACH	CIRCUITS (HOVELL STREET 6.789 km)	IN HSFGR
PEDESTRIAN GATE CONTROL (S) AND	INDICATIONS (MODULE 12539) (HOVELL STREET 6.789 km)	IN HSFGR
PEDESTRIAN GATE CONTROL (S) AND	DETECTION CIRCUITS (HOVELL STREET 6.789 km)	IN HSFGR
PEDESTRIAN GATE CONTROL (S) AND	MECHANISMS Nos. 1 AND 2 (HOVELL STREET 6.789 km)	IN HSFGR
PEDESTRIAN GATE CONTROL (S)	(HOVELL STREET 6.789 km)	IN HSFGR
PEDESTRIAN GATE ELECTROMAGNETIC EXIT	LATCH Nos. 1 AND 2 (HOVELL STREET 6.789 km)	IN HSFGR
PEDESTRIAN EMERGENCY EXIT INFILL	PANEL BOXES (HOVELL STREET 6.789 km)	IN 1EGJ AND 2EGJ
PEDESTRIAN GATE MECHANISM (S)	Nos. 1 AND 2 (HOVELL STREET 6.789 km)	IN HSFGR
PIM50 AND ROM50 WESTRACE MKII	CARD ANALYSIS IN BAYSER	
POINT CONTROL (S)	Nos. 102 – 110	IN HSFGR
POINT CONTROLS BAY229W	IN BAYSER	
POINT DETECTION BAY223W	IN BAYSER	
POINT MECHANISM (S)	Nos. 102 – 110	IN HSFGR
POINT MECHANISM (S)	No. BAY223W IN BAYSER	
POINT INDICATION (S)	Nos. 102 – 110	IN HSFGR
POST TELEPHONE (S)	Nos. 102 – 110	IN HSFGR
POWER ALARM INPUTS (MODULE 12539)	IN HSFGR	
POWER DISTRIBUTION	110 V AC SWITCHBOARD (MAINS)	IN HSFGR
POWER DISTRIBUTION	110 V AC SWITCHBOARD (UPS)	IN HSFGR
POWER DISTRIBUTION	110 V AC SWITCHBOARD	IN BAYSER
POWER DISTRIBUTION	UP END	
POWER ACE(1) AND RESET	- AXLE COUNTER IN BAYSER	
POWER PDCU 13-14	- AXLE COUNTER IN BAYSER	
POWER SUPPLIES TFM MODULE TRANSFORMERS	IN HSFGR	
POWER SUPPLIES (DC) AND BOX LIGHTS	IN HSFGR	
POWER SUPPLIES (AC) AND BOX LIGHTS	IN HSFGR	
POWER SUPPLIES	(SCADA)	IN HSFGR

Appendix L

POWER SUPPLY AND HEALTH INDICATIONS	(AXLE COUNTER)	IN HSFGR
POWER SUPPLY AND CDU MODULE	(ELECTROLOGIXS)	IN HSFGR
PROGRESSION AND APPROACH CIRCUITS	IN HSFGR	
RESET INPUTS AND TRACK OUTPUTS	No. MW054T (AXLE COUNTER)	IN HSFGR
ROUTE PROVING RELAY (S)	Nos. 102 – 110	IN HSFGR
ROUTE LOCKING RELAY (S) AND DIAGRAM (S)	No. 30U	IN HSFGR
SIGNAL INDICATION (S)	Nos. 102 – 110	IN HSFGR
SIGNAL CONTROL (S)	Nos. 102 – 110	IN HSFGR
SIGNAL CONTROLS AND MECHANISM (S)	(MODULE 12S07) Nos. 102 – 110	IN HSFGR
SIGNAL MAST DETECTION No. F428G	IN HSFGR	
SIGNAL MECHANISM (S)	Nos. 102 – 110	IN HSFGR
SIGNALLING DIAGRAM (S)	Nos. 102 – 110	IN HSFGR
SIGNAL MODULE DETAILS No (s). 12S07	IN HSFGR	
SIGNAL TILT MAST DETECTION CIRCUITS	AND INPUTS Nos. 102 – 110	IN HSFGR
SIGNALLING ARRANGEMENT (S)	(23.000 km - 25000 km)	
SIGNALLING ARRANGEMENT (S)	ALBION - ST ALBANS (23.000 km – 25.000 km)	
SINGLE LINE CONTROL CIRCUITS	IN HSFGR	
SIGNAL POLE CHANGE RELAYS	IN HSFGR	
SYSTEM OVERVIEW	(AXLE COUNTER)	IN HSFGR
TELEPHONES		
TRAIN STOP CONTROL AND DETECTION	CIRCUITS No. M605 (MODULE 12S07)	IN HSFGR
TPWS (TSS) CONTROLS AND DETECTION	No. M605 (MODULE 12S07)	IN HSFGR
TPWS (TSS) CONTROLS AND INPUTS	No. M605 (MODULE 12S07)	IN HSFGR
TPWS (OSS) CONTROLS AND DETECTION	No. M605 (MODULE 12S07)	IN HSFGR
TPWS (OSS) CONTROLS AND INPUTS	No. M605 (MODULE 12S07)	IN HSFGR
TRACK CIRCUITS, BONDING AND	SIGNALLING APPARATUS	(23.000 km – 25.000 km)
TRACK CIRCUITS, BONDING AND	SIGNALLING APPARATUS	ALBION - ST ALBANS (23.000 km – 25.000 km)
TRACK FEED (S) AND RELAY (S)	Nos. A62, C26 AND C30	IN HSFGR
TRACK FEED (S) AND RELAY (S)	Nos. M567 AND M568 (CSEE)	IN HSFGR
TRACK FEED (S) AND RELAY (S)	Nos. M567 AND M568 (JEUMONT)	IN HSFGR
TRACK FEED (S)	Nos. A62, C26 AND C30	IN HSFGR
TRACK FEED (S)	Nos. M567 AND M568 (CSEE)	IN HSFGR
TRACK FEED (S)	Nos. M567 AND M568 (JEUMONT)	IN HSFGR
TRACK INPUTS (MODULE 12S03)	IN HSFGR	
TRACK RELAY (S)	Nos. A62, C26 AND C30	IN HSFGR
TRACK RELAY (S)	Nos. M567 AND M568 (CSEE)	IN HSFGR
TRACK RELAY (S)	Nos. M567 AND M568 (JEUMONT)	IN HSFGR
TRACK REPEAT AND RESET	BAY327T ACE(1) PARALLEL I/O CARD (AXLE COUNTER)	IN BAYSER
TRACK REPEAT RELAY (S)	Nos. A62, C26 AND C30	IN HSFGR
TRACKSIDE CONNECTION (S)	Nos. 054T/056BT AND 056BT/056AT (AXLE COUNTER)	IN HSFGR
UPS ALARM AND CHANGE OVER CONTACTOR	INDICATION INPUTS (MODULE 12S26)	IN HSFGR
UPS WIRING DIAGRAM AND	UPS CHANGE OVER CONTACTOR	IN HSFGR

Appendix M – Signals Revision Examples



BAYSWATER
INDEX
LOCATION L927F

Plan No.	Rev.	Title	Plan No.	Rev.	Title
BAY_G0059	A	EARTHING ARRANGEMENTS IN L927ZB & L927F			
BAY_G0041	B	INDEX LOCATION L927F			
BAY_G0190		LAYOUT OF APPARATUS AND TERMINATIONS IN L927F			

REFERENCE PLANS :

NOTE: PLEASE REFER TO THE DMS FOR LATEST REVISIONS OF THE DRAWINGS LISTED BELOW.

BAY_G0053	CABLE RUNNING PLAN BAYSWATER - BORONIA (25.00 km - 25.000 km)
BAY_G0054	SIGNALLING ARRANGEMENT BAYSWATER - BORONIA (25.00 km - 25.000 km)
BAY_G0054	SIGNAL POST TELEPHONE CIRCUITS
BAY_G0054	TRACK CIRCUITS, BONDING AND SIGNALLING APPARATUS BAYSWATER - BORONIA (25.00 km - 25.000 km)

REV	DESCRIPTION	DESIGNED	CHECKED	IND REV	APPD	DATE
A	REVISED AND POINTS (W/175 RELOCATED	AD	AC	RI	AA	01/06/23

FILENAME

REDRAWN AND REVISED, SUPERSEDES DRAWING No. M011035 REV D DATED 01/06/23

CONSULTANT LOGO

FRANCHISEE LOGO

DOT-NTS-012-DMS FOR DISCLAIMER

DESIGNED BY: D CITIZEN
CHECKED BY: C CITIZEN
REV NAME & No.: R CITIZEN 1234
SHEET SIZE: A3

INDEPENDENT REVIEW BY: I CITIZEN
APPROVED BY AND DATE: A CITIZEN 01/06/23
SCALE OF METRES
HOR
VER
SCALE: NTS

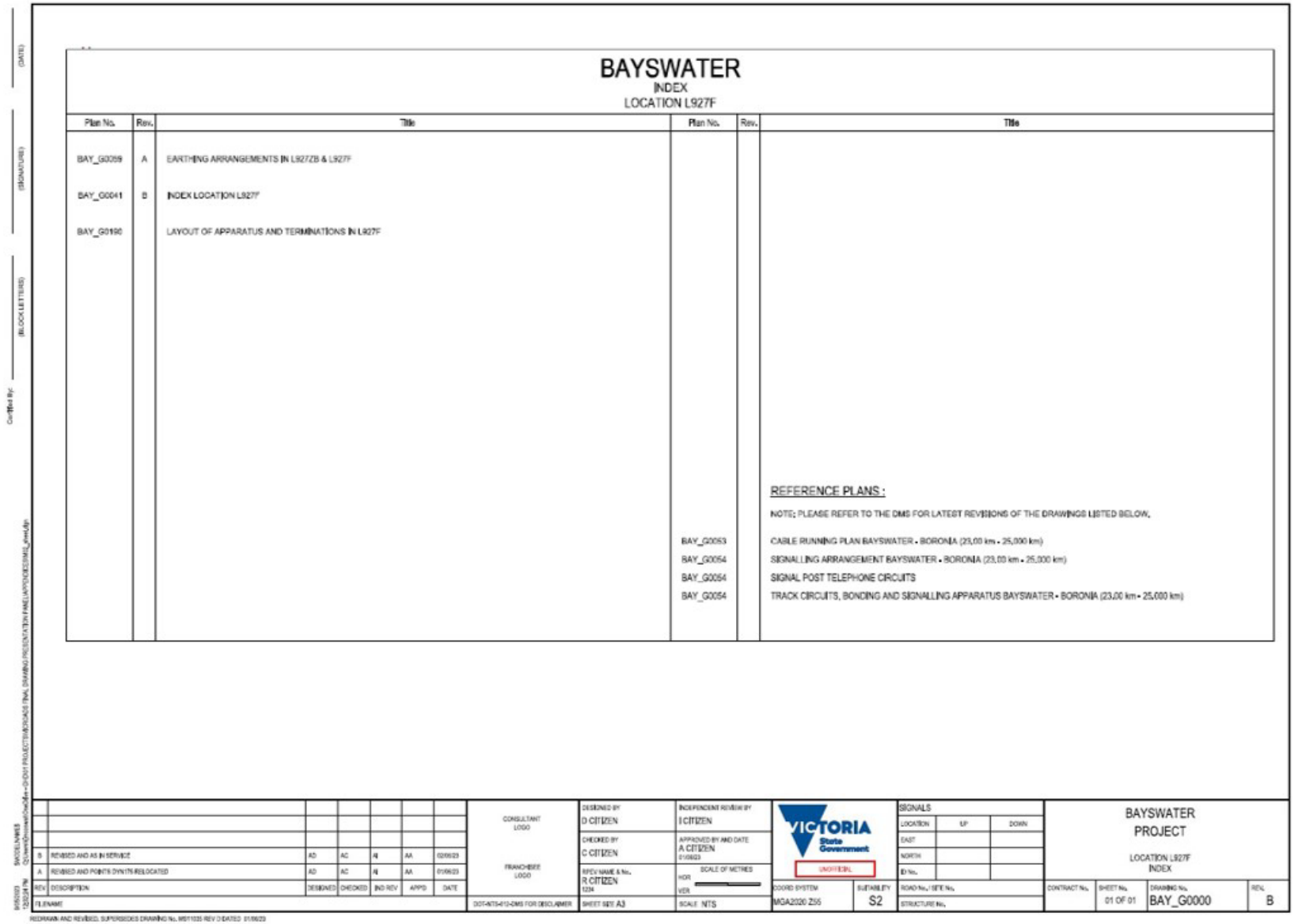
VICTORIA State Government
UNOFFICIAL

SIGNALS		
LOCATION	UP	DOWN
EAST		
NORTH		
ID No.		

BOORD SYSTEM: MGA2020 Z55
SUITABILITY: S2
ROAD No./ SITE No.
STRUCTURE No.

BAYSWATER
PROJECT
LOCATION L927F
INDEX

CONTRACT No.
SHEET No.: 01 OF 01
DRAWING No.: BAY_G0000
REV.: A



BAYSWATER
INDEX
LOCATION L927F

Plan No.	Rev.	Title
BAY_G0059	A	EARTHING ARRANGEMENTS IN L927ZB & L927F
BAY_G0041	B	INDEX LOCATION L927F
BAY_G0190		LAYOUT OF APPARATUS AND TERMINATIONS IN L927F

Plan No.	Rev.	Title
		REFERENCE PLANS :
		NOTE: PLEASE REFER TO THE DMS FOR LATEST REVISIONS OF THE DRAWINGS LISTED BELOW.
BAY_G0053		CABLE RUNNING PLAN BAYSWATER - BORONIA (23.00 km - 25.000 km)
BAY_G0054		SIGNALLING ARRANGEMENT BAYSWATER - BORONIA (23.00 km - 25.000 km)
BAY_G0054		SIGNAL POST TELEPHONE CIRCUITS
BAY_G0054		TRACK CIRCUITS, BONDING AND SIGNALLING APPARATUS BAYSWATER - BORONIA (23.00 km - 25.000 km)

REV	DESCRIPTION	DESIGNED	CHECKED	IND REV	APPD	DATE
B	REVISED AND AS IN SERVICE	AD	AC	AI	AA	020823
A	REVISED AND POINTS DYN TR RELOCATED	AD	AC	AI	AA	010823

FILENAME

CONSULTANT LOGO

FRANCHISEE LOGO

DOT-NTS-012-DMS FOR DISCLAIMER

DESIGNED BY D CITIZEN

CHECKED BY C CITIZEN

REV NAME & No. R CITIZEN 1234

SHEET SIZE A3

INDEPENDENT REVIEW BY I CITIZEN

APPROVED BY AND DATE A CITIZEN 010823

SCALE OF METRES

HOR

VER

SCALE NTS

VICTORIA State Government

UNOFFICIAL

COORD SYSTEM MGA2020 Z55

SUITABILITY S2

SIGNALS		
LOCATION	UP	DOWN
EAST		
NORTH		
ID No.		

ROAD No. / SITE No.

STRUCTURE No.

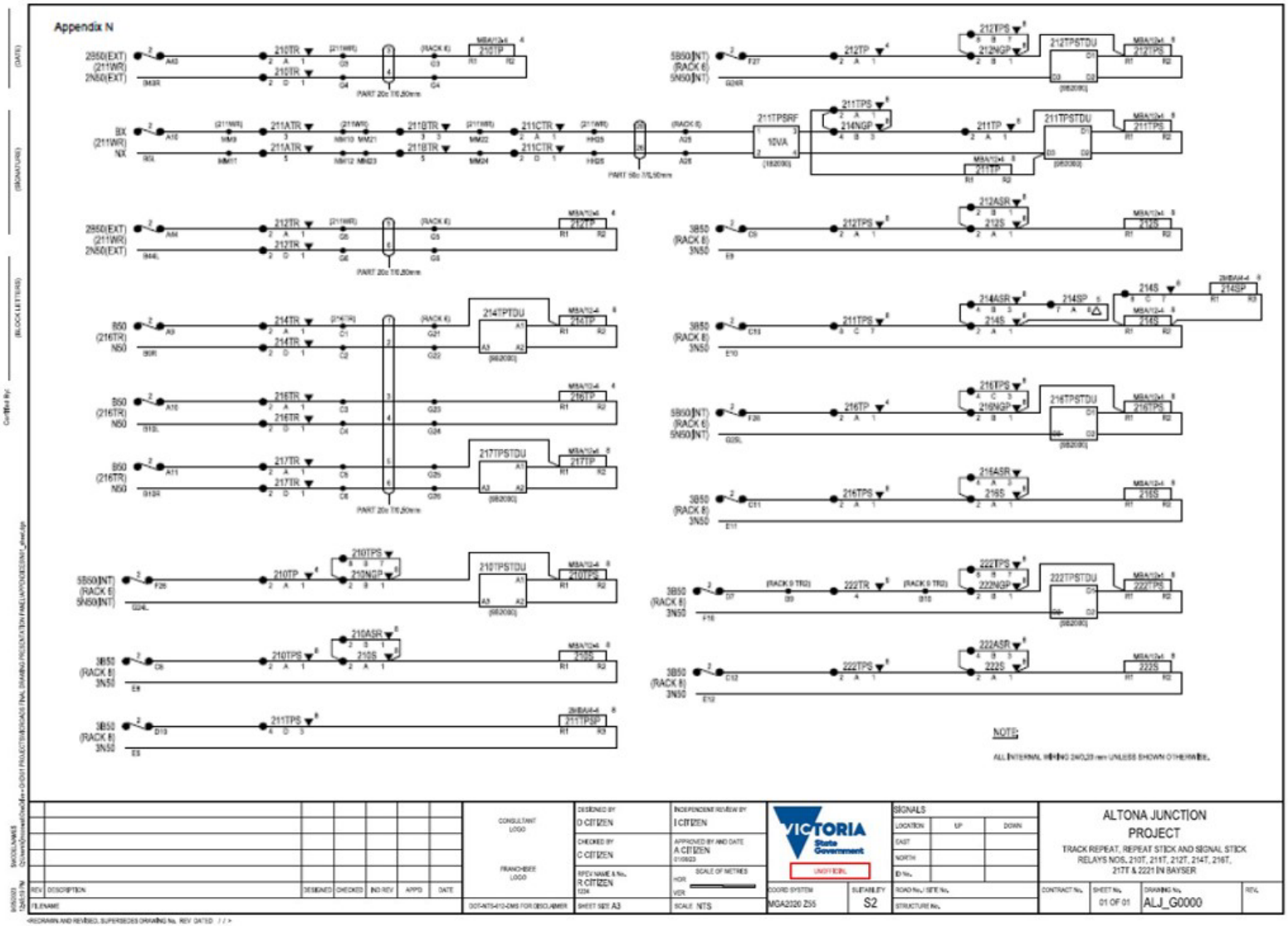
BAYSWATER PROJECT

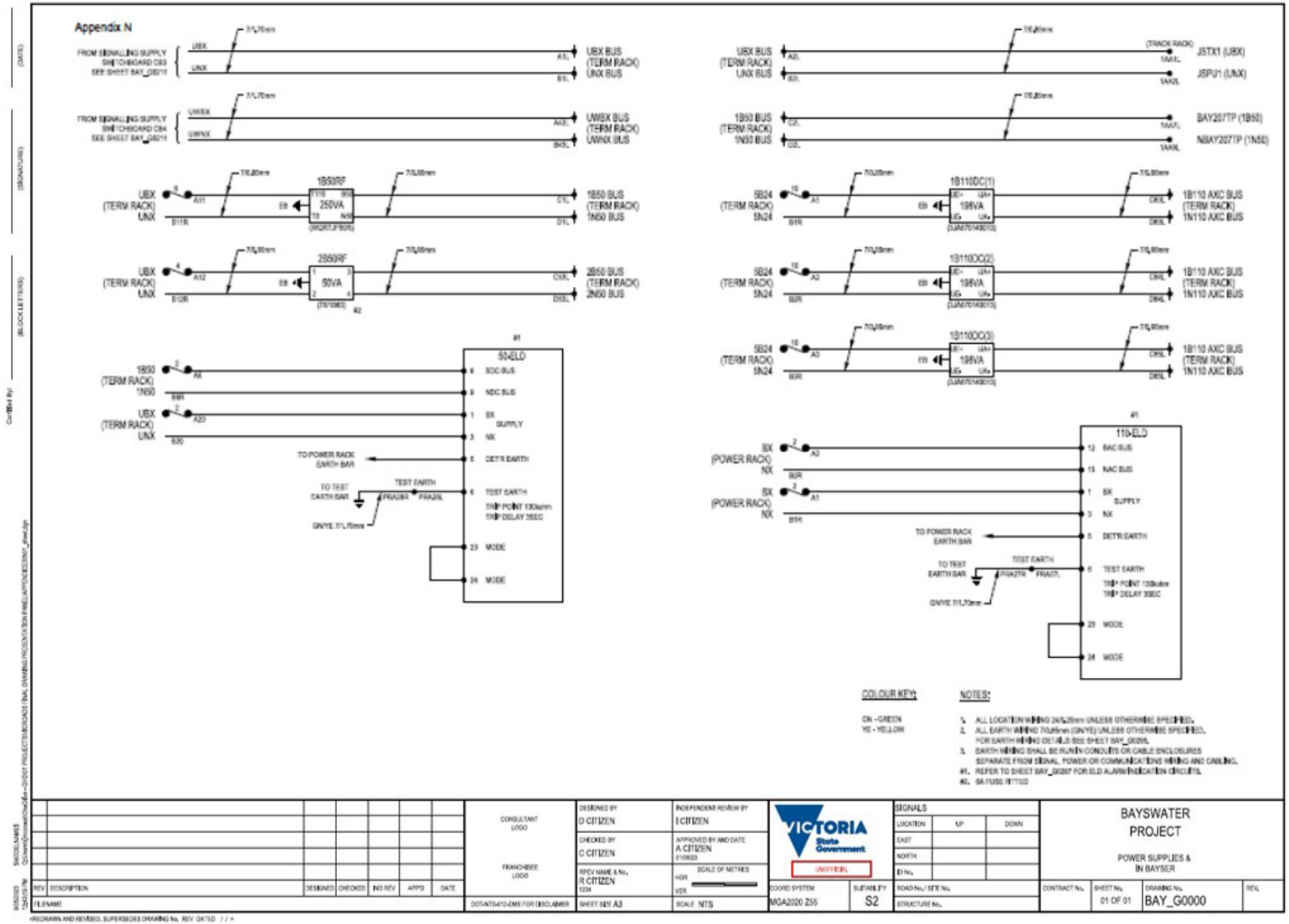
LOCATION L927F
INDEX

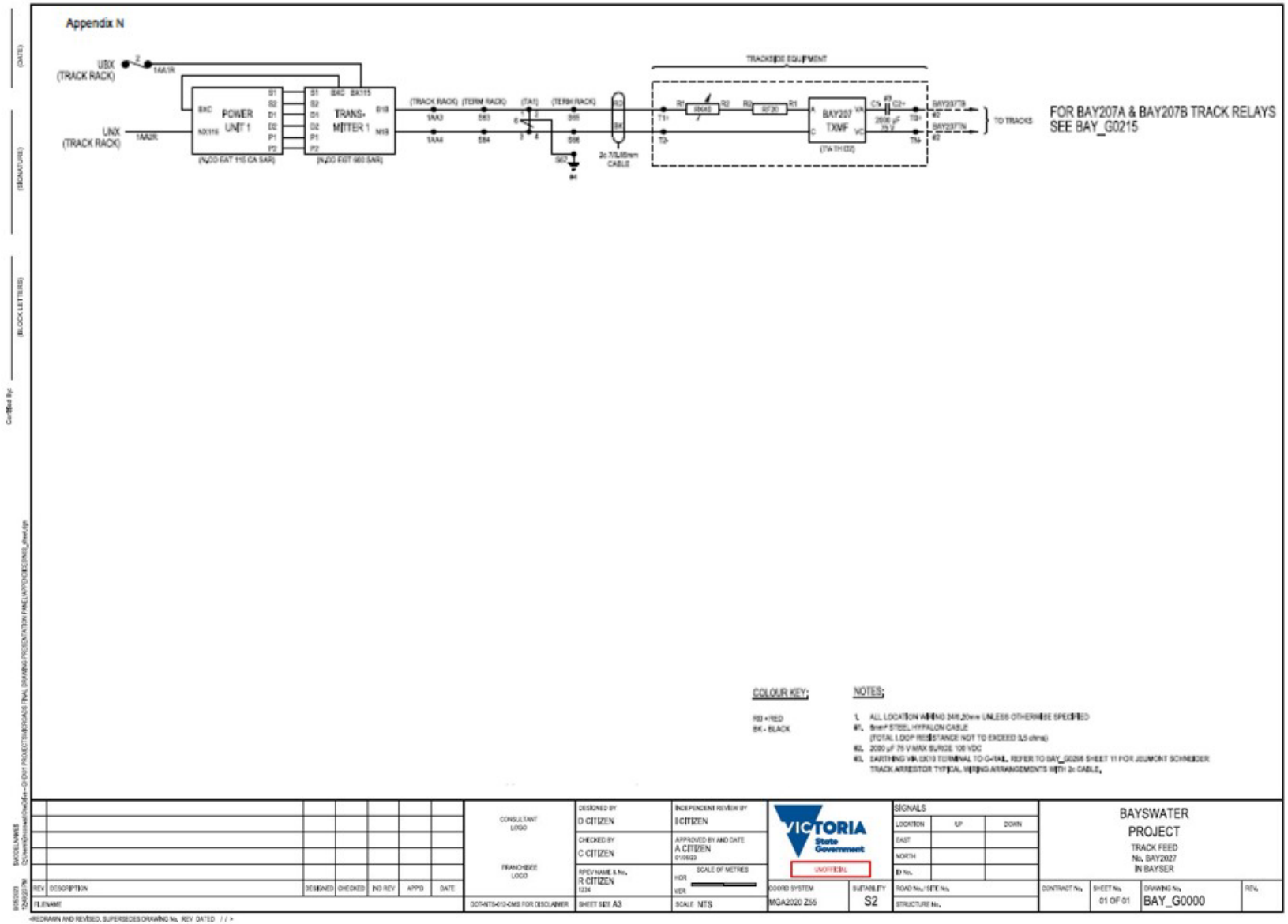
CONTRACT No.	SHEET No.	DRAWING No.	REV.
	01 OF 01	BAY_G0000	B

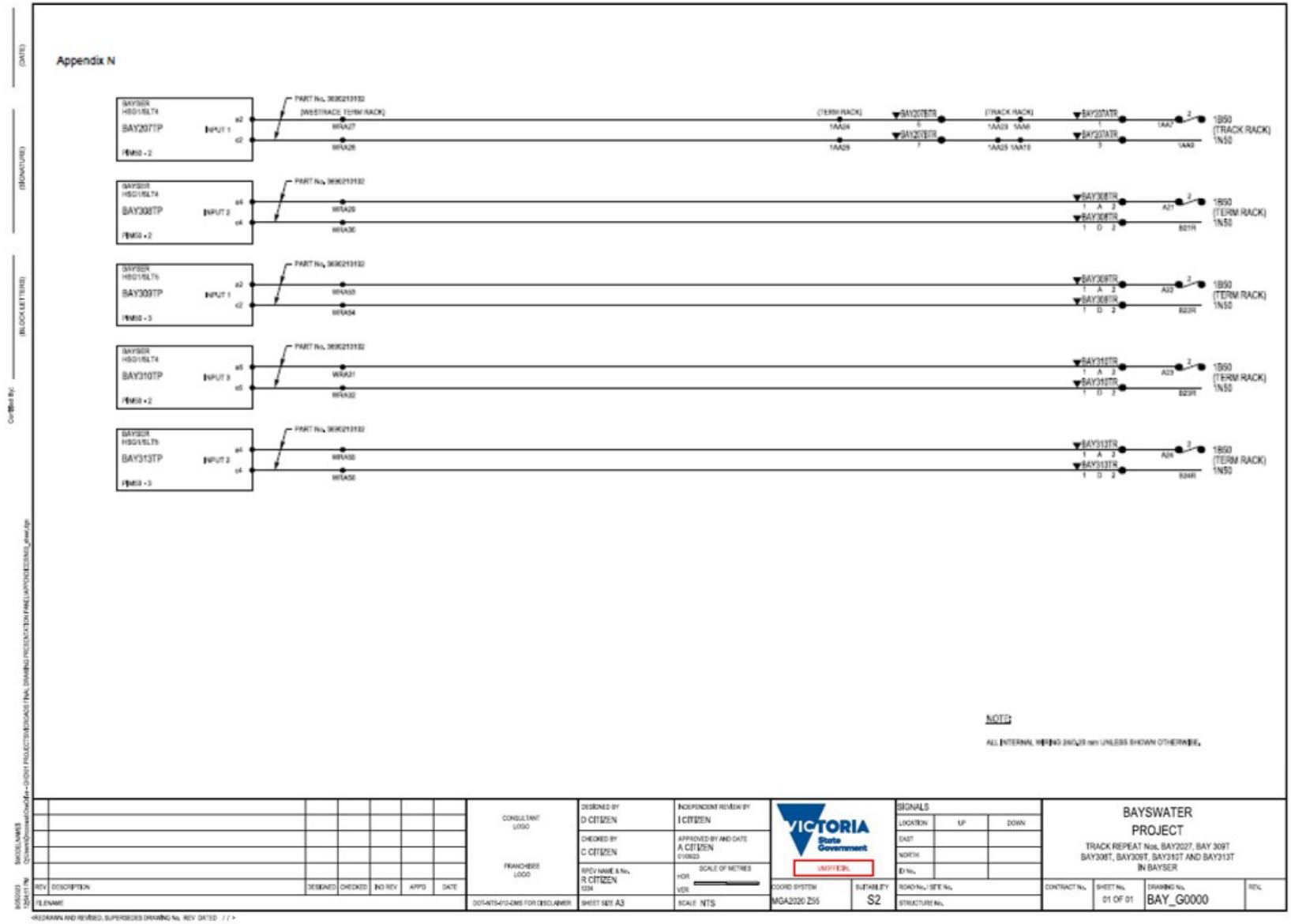
REDRAWN AND REVISED. SUPERSEDES DRAWING No. M971035 REV D DATED 010823

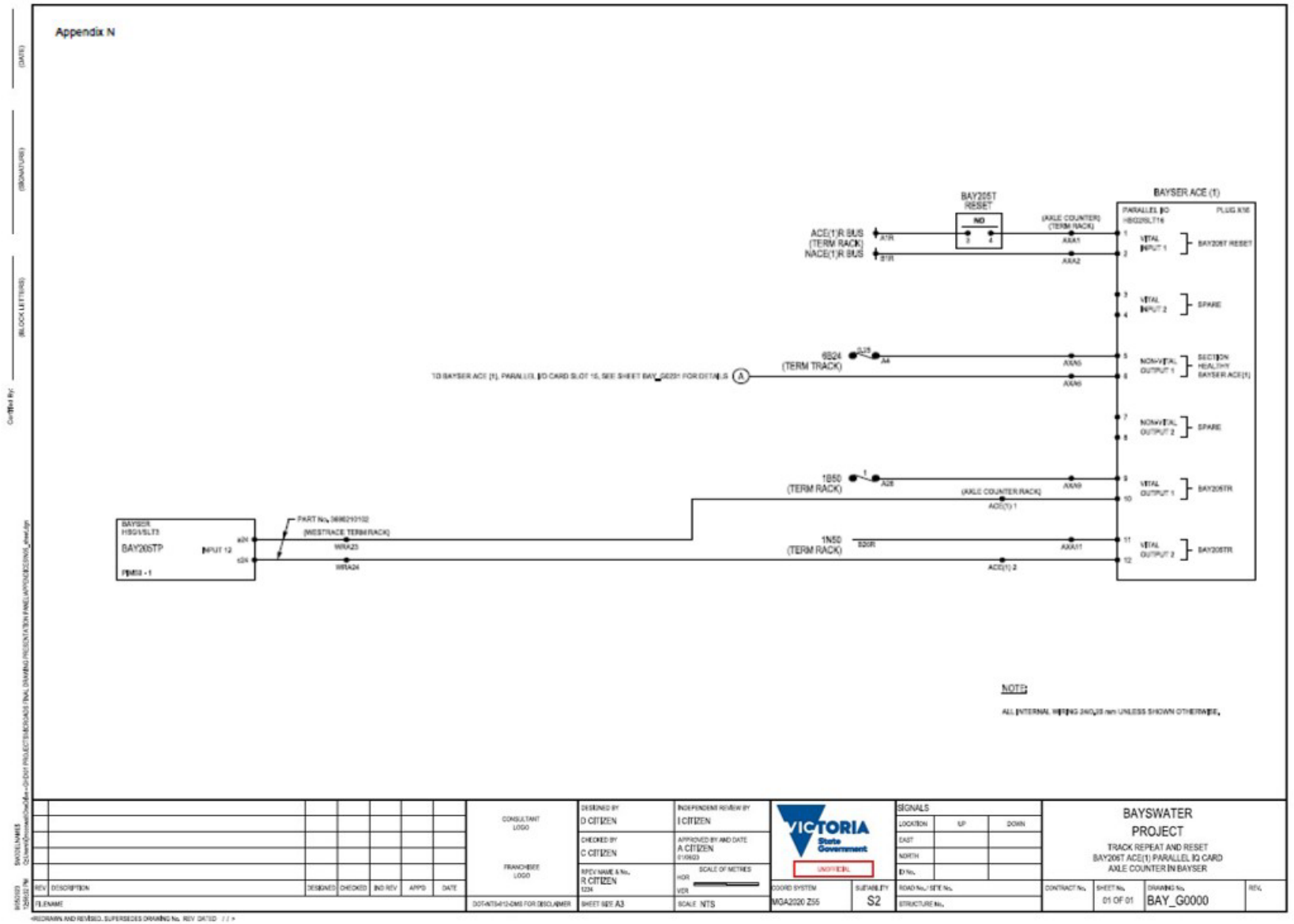
Appendix N – Signal Box and Relay Rack Layout and Circuits

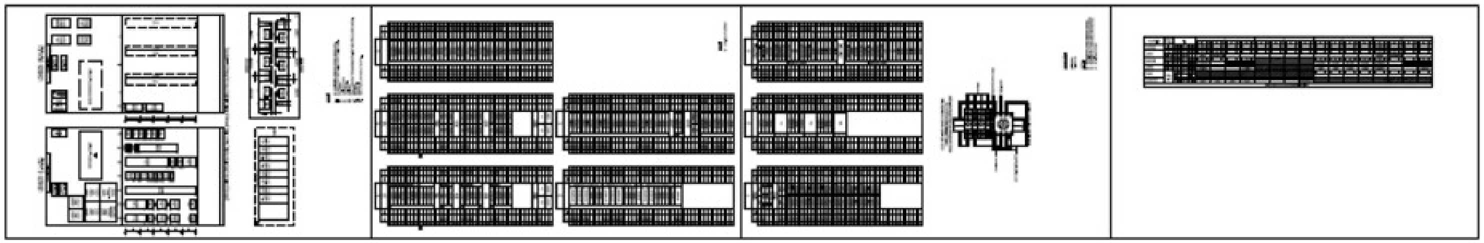












SHEET 02 SHEET 03 SHEET 04 SHEET 05

KEY PLAN

REV	DESCRIPTION	DESIGNED	CHECKED	IND REV	APPD	DATE

FILENAME

CONSULTANT LOGO

FRANCHISEE LOGO

DOT-NTS-012-DMS FOR DISCLAIMER

DESIGNED BY: D CITIZEN

CHECKED BY: C CITIZEN

RPEV NAME & No.: R CITIZEN 1234

SHEET SIZE A3

INDEPENDENT REVIEW BY: I CITIZEN

APPROVED BY AND DATE: A CITIZEN 01/08/23

SCALE OF METRES: HOR / VER

SCALE NTS

VICTORIA State Government

UNOFFICIAL

COORD SYSTEM: MGA2020 Z55

SUITABILITY: S2

SIGNALS

LOCATION	UP	DOWN
EAST		
NORTH		
ID No.		

ROAD No. / SITE No.

STRUCTURE No.

BALLARAT

BALLARAT LINE UPGRADE

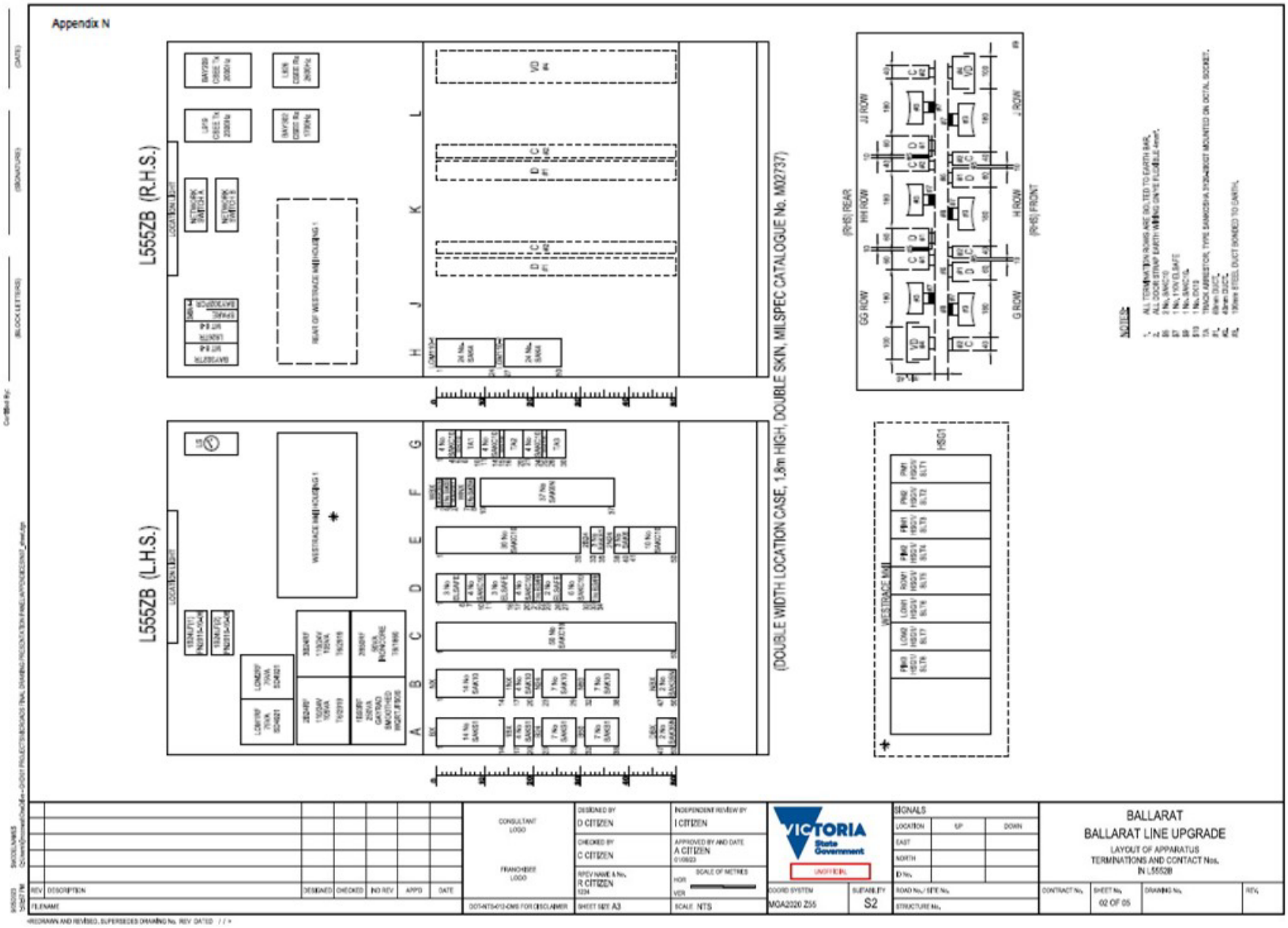
LAYOUT OF APPARATUS

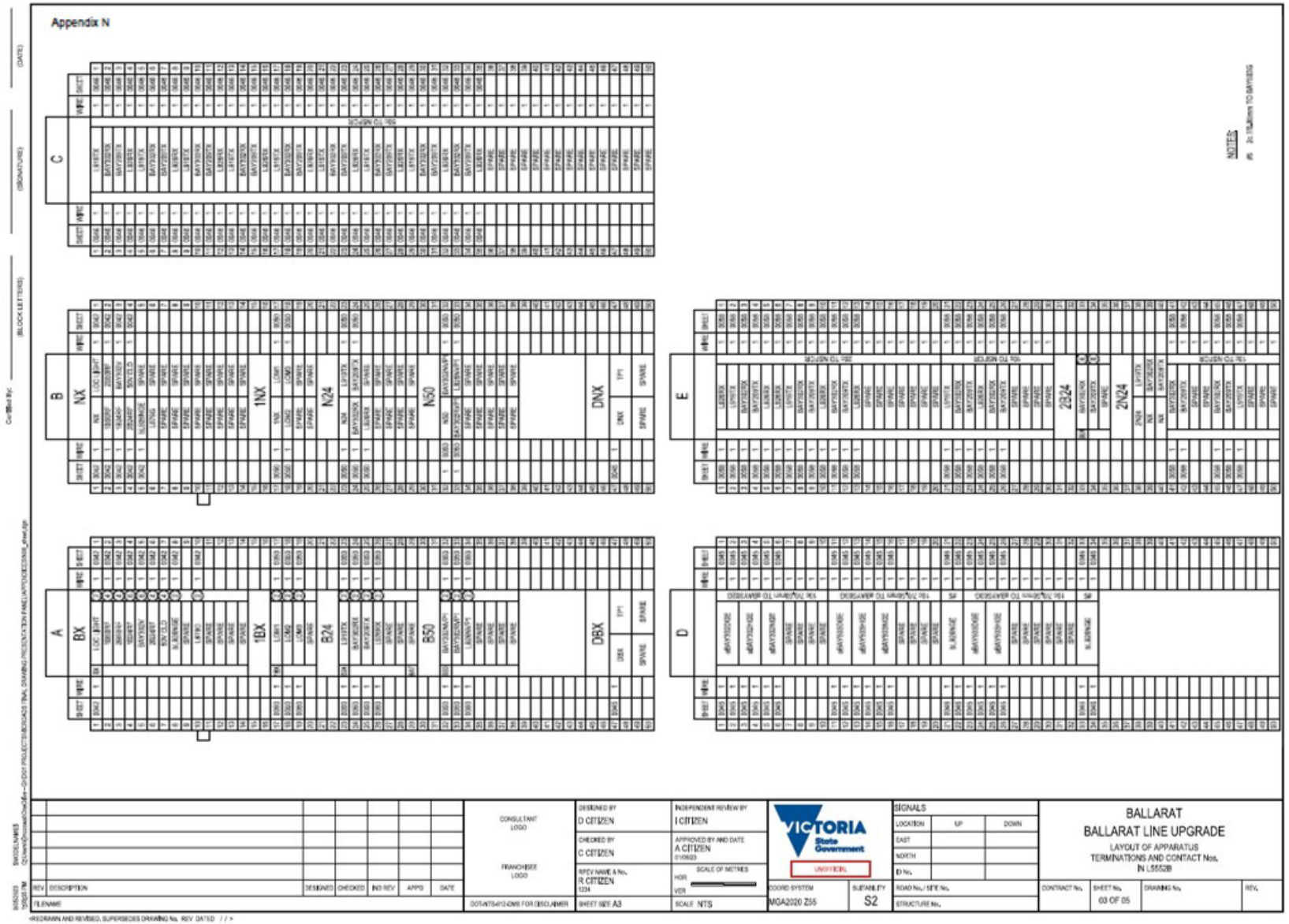
TERMINATIONS AND CONTACT Nos.

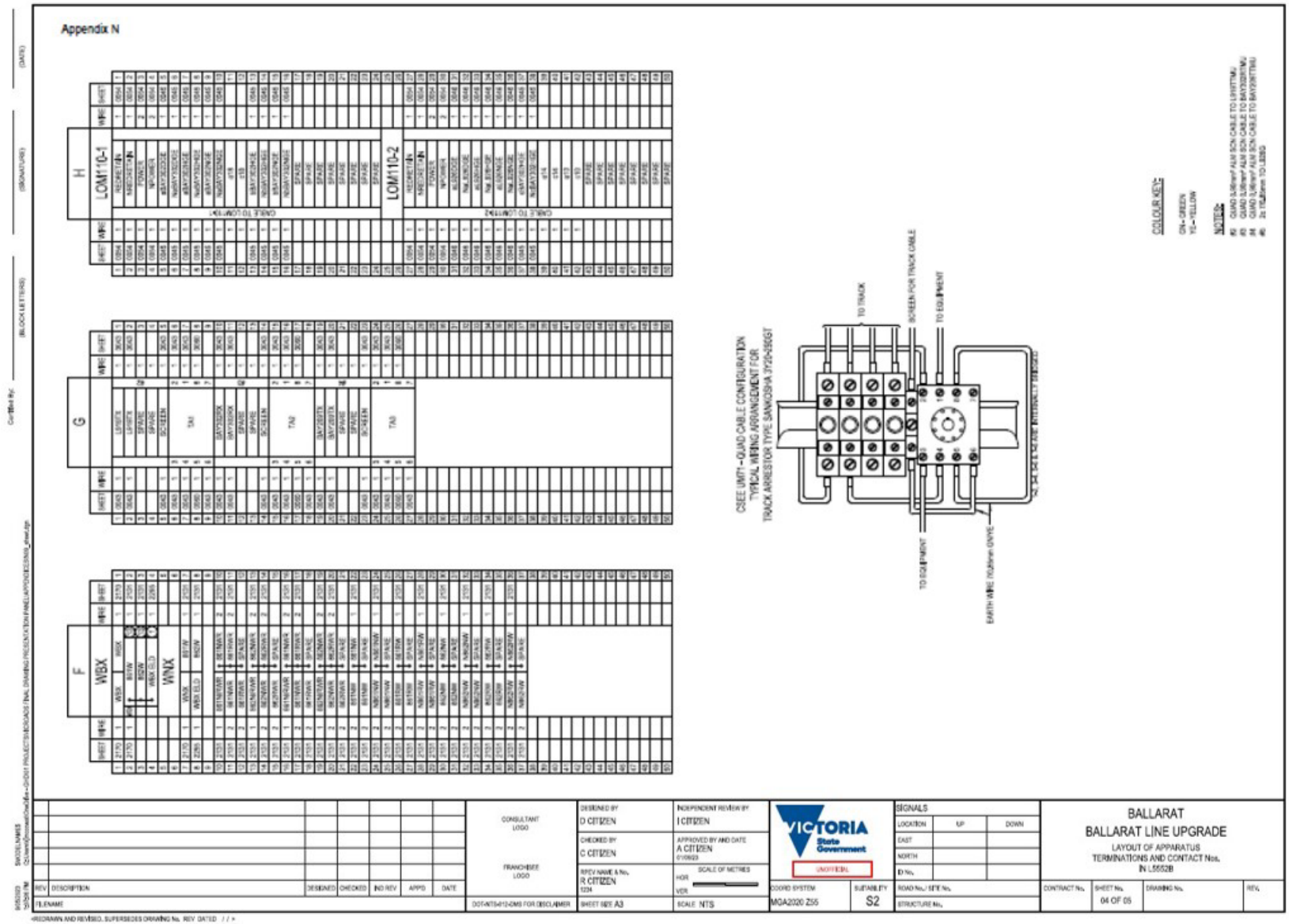
IN L5552B

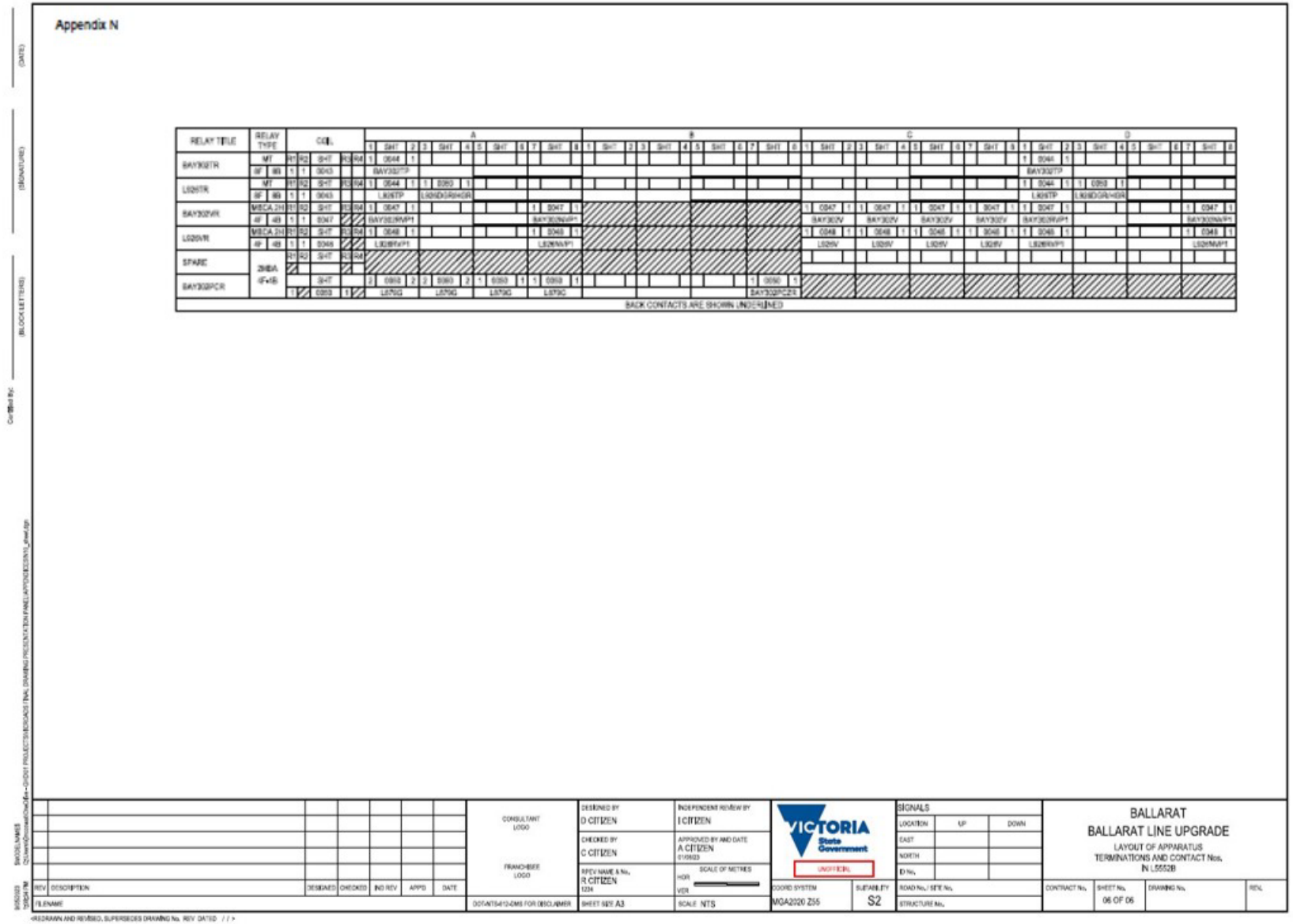
CONTRACT No.	SHEET No.	DRAWING No.	REV.
	01 OF 01		

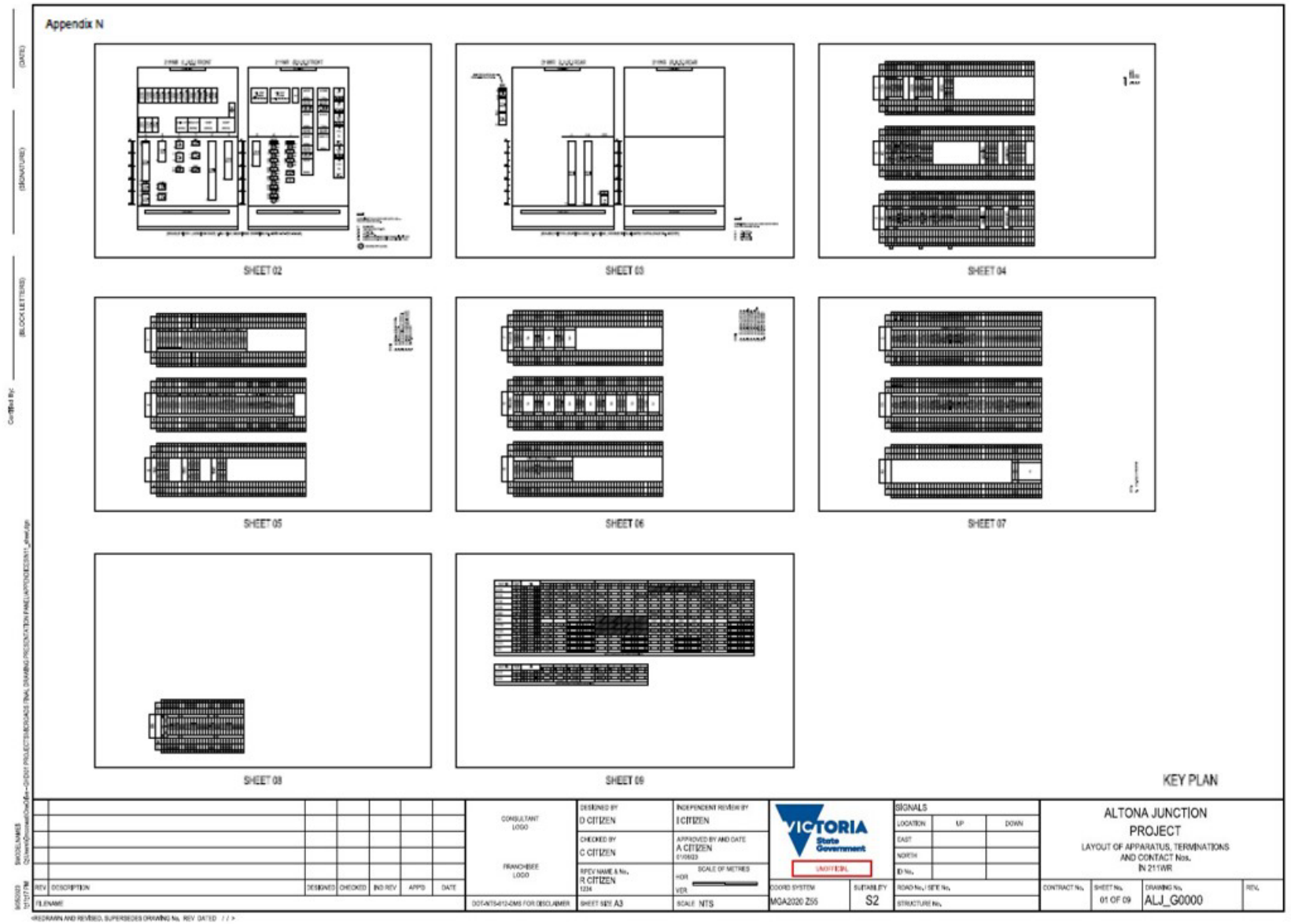
<REDRAWN AND REVISED, SUPERSEDES DRAWING No. REV DATED / / >

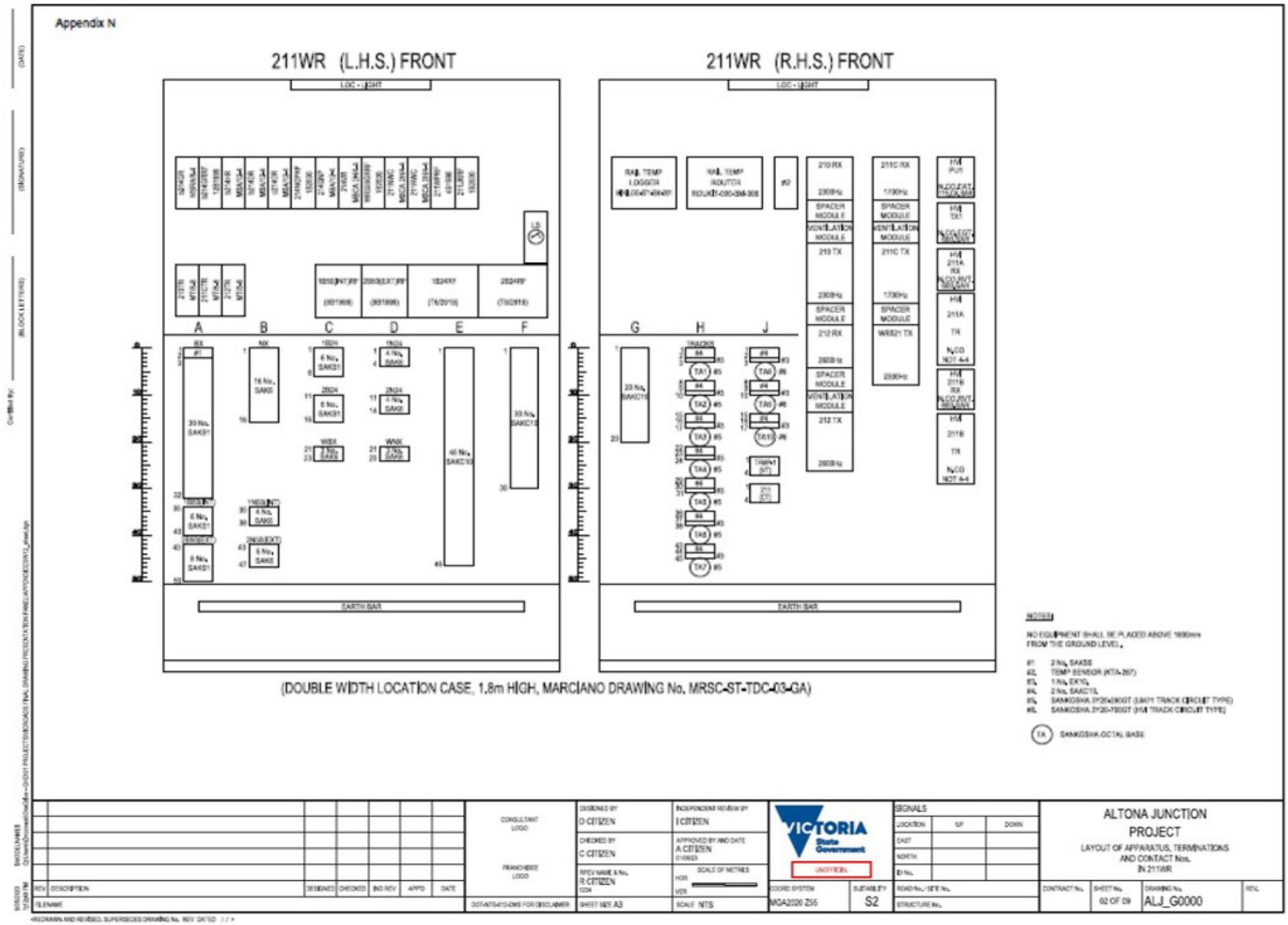


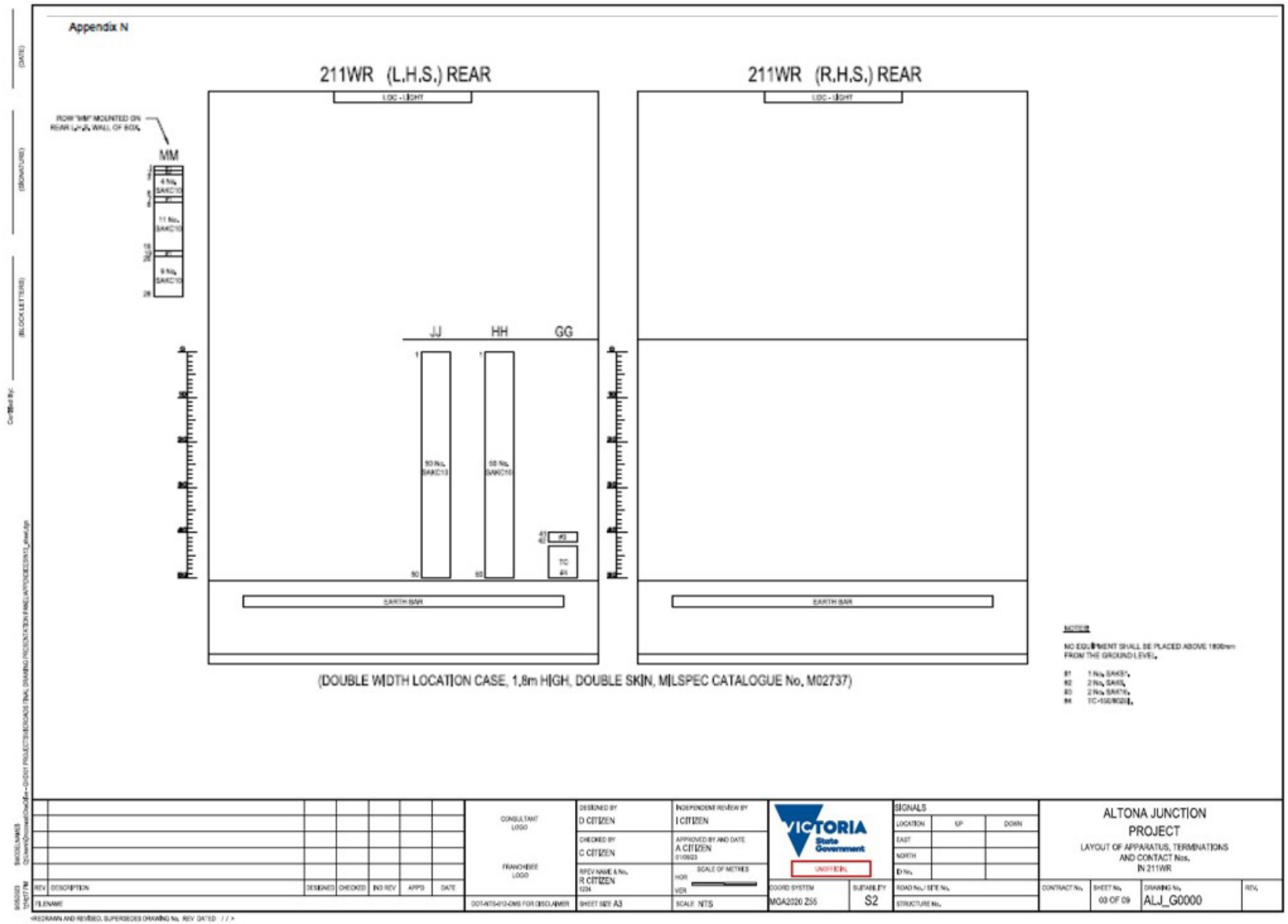




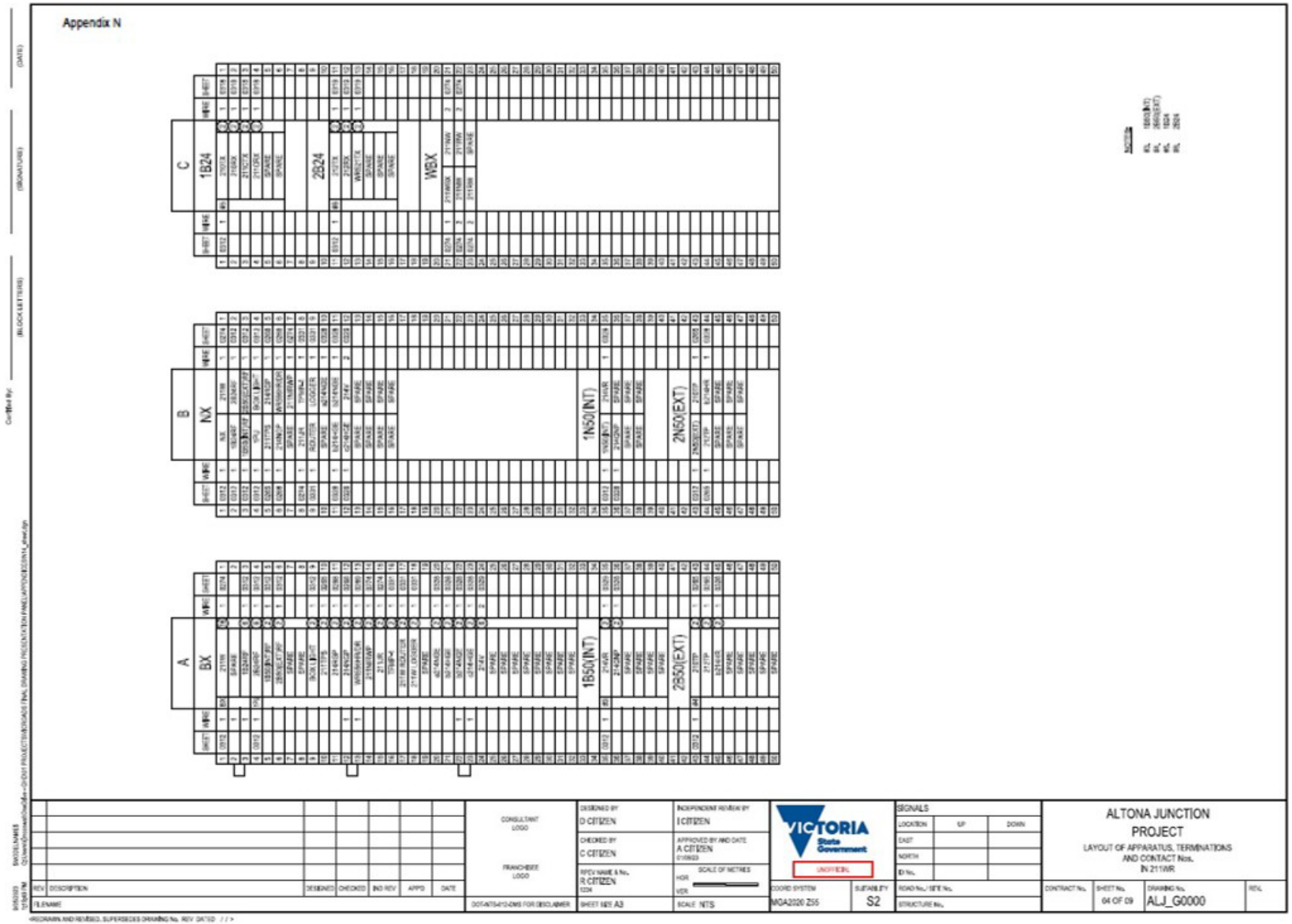


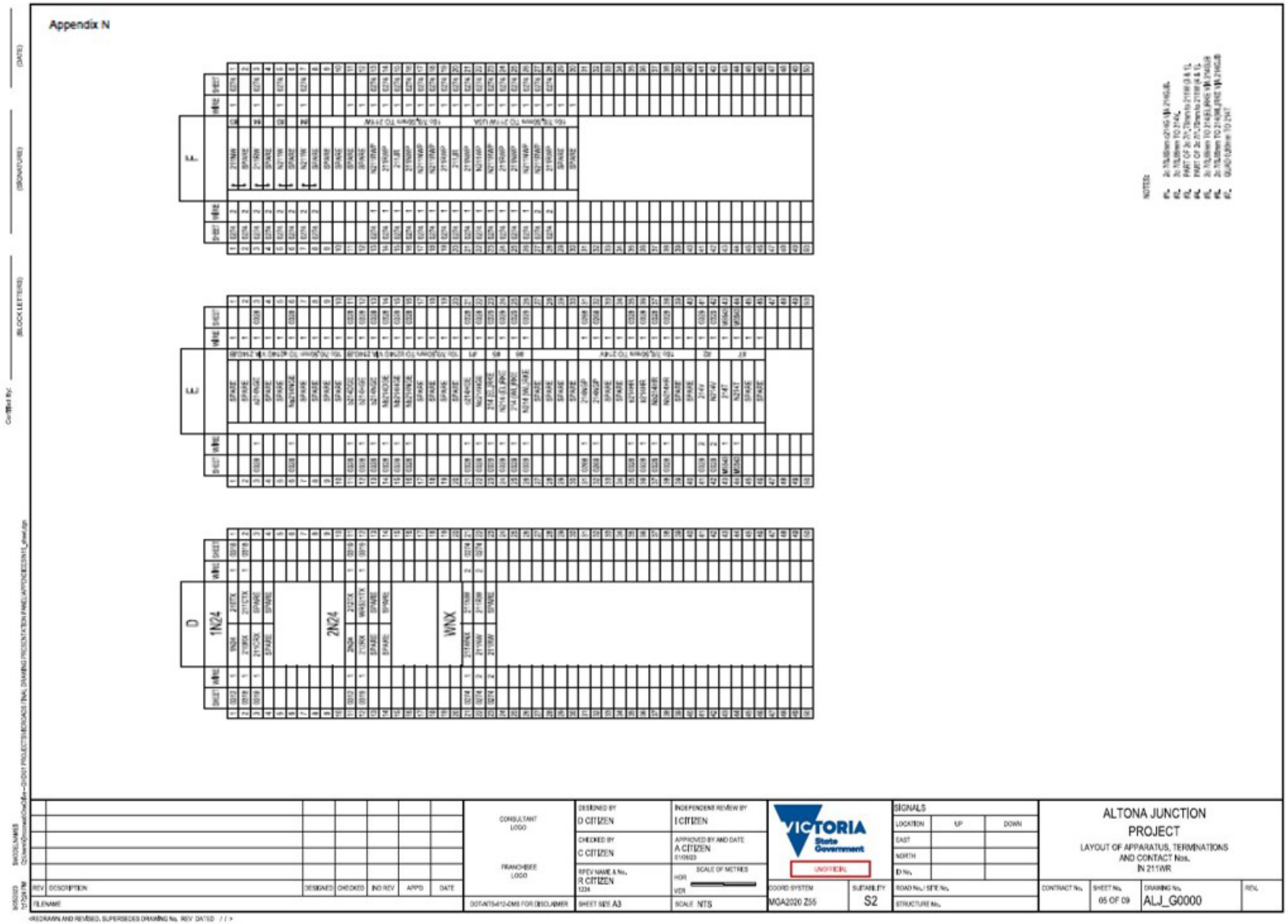






Appendix N





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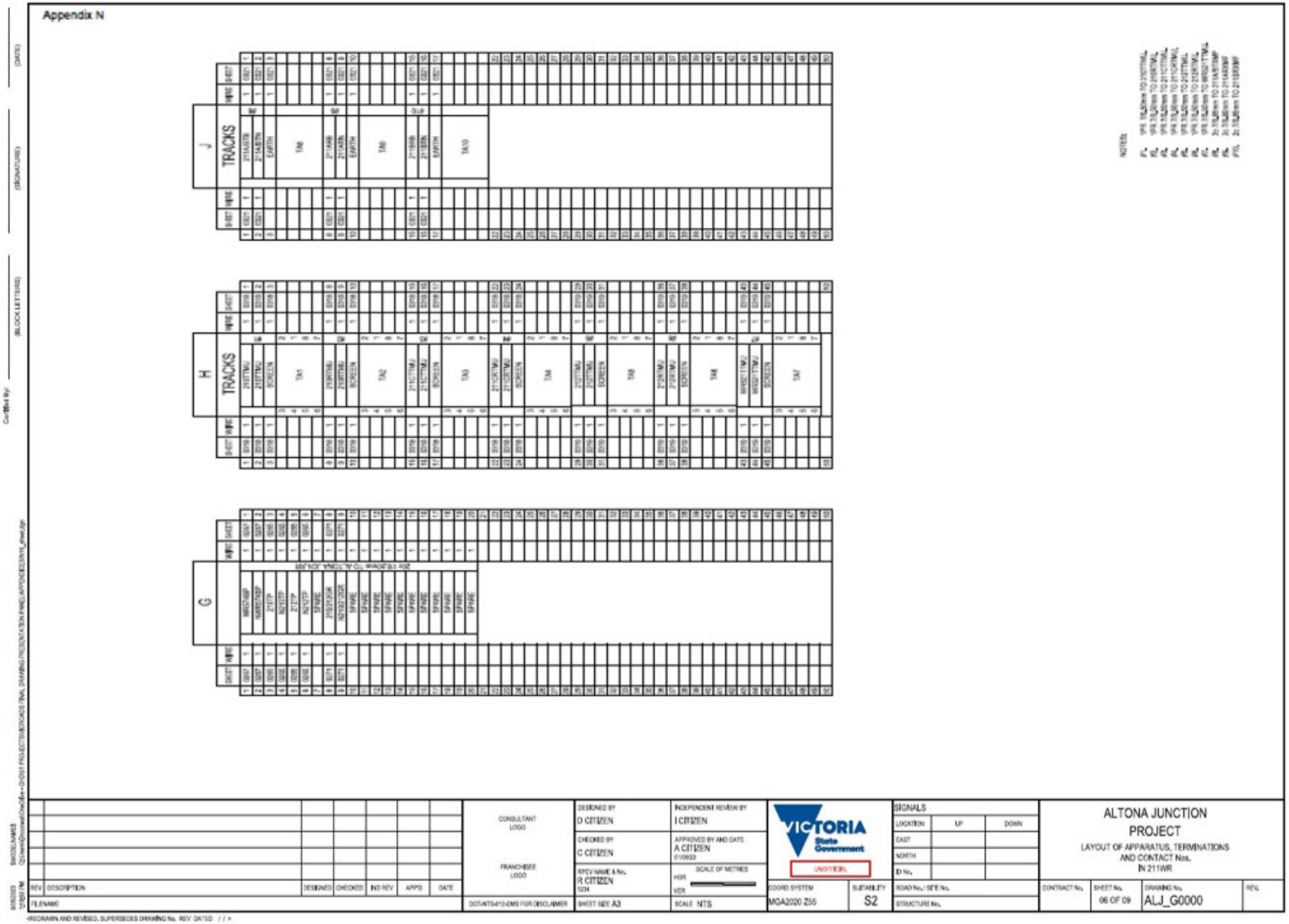
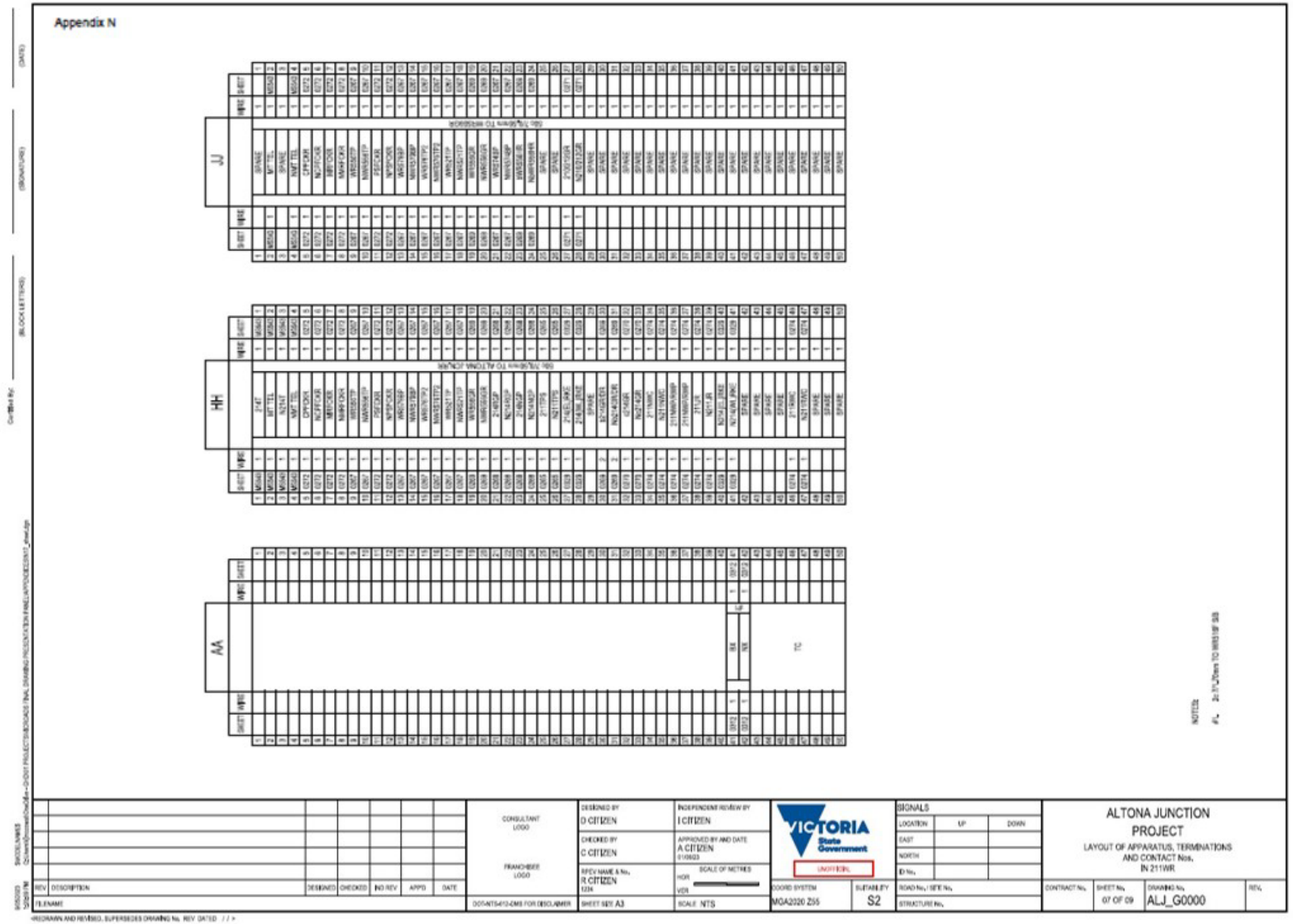




Appendix N

REV	DESCRIPTION		DESIGNED	CHECKED	IND REV	APPD	DATE	CONSULTANT LOGO	DESIGNED BY D CITIZEN	INDEPENDENT REVIEW BY I CITIZEN	VICTORIA State Government
									CHECKED BY C CITIZEN	APPROVED BY AND DATE A CITIZEN 01/08/23	UNOFFICIAL
								FRANCHISEE LOGO	RPDV NAME & No. R CITIZEN 1234	SCALE OF METRES HOR VER	COORD SYSTEM MGA2020 Z55
FILENAME								DOT-NTS-012-DMS FOR DISCLAIMER	SHEET SIZE A3	SCALE NTS	SUITABILITY S2

SIGNALS		
LOCATION	UP	DOWN
EAST		
NORTH		
ID No.		

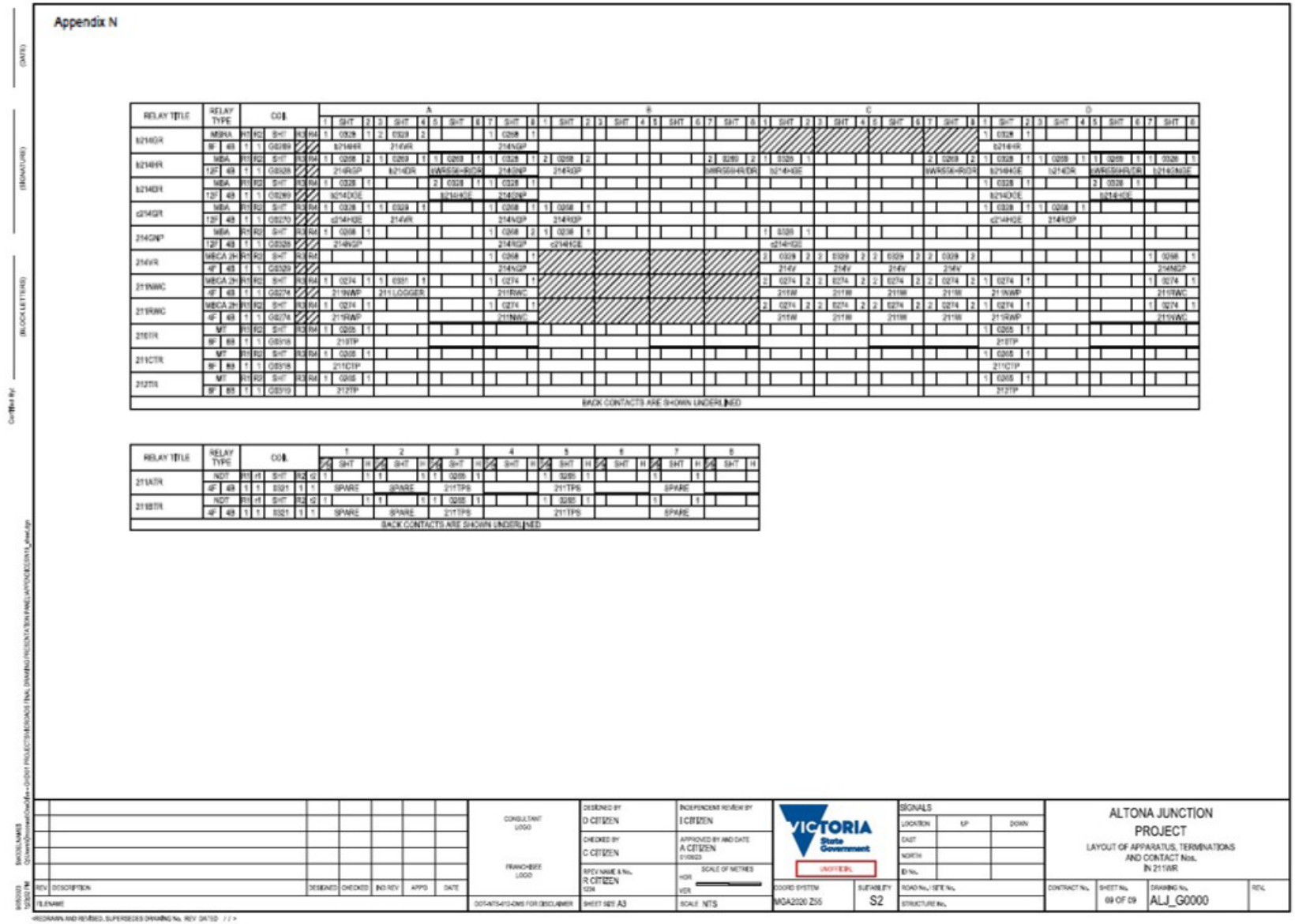
ROAD No. / SITE No.

STRUCTURE No.

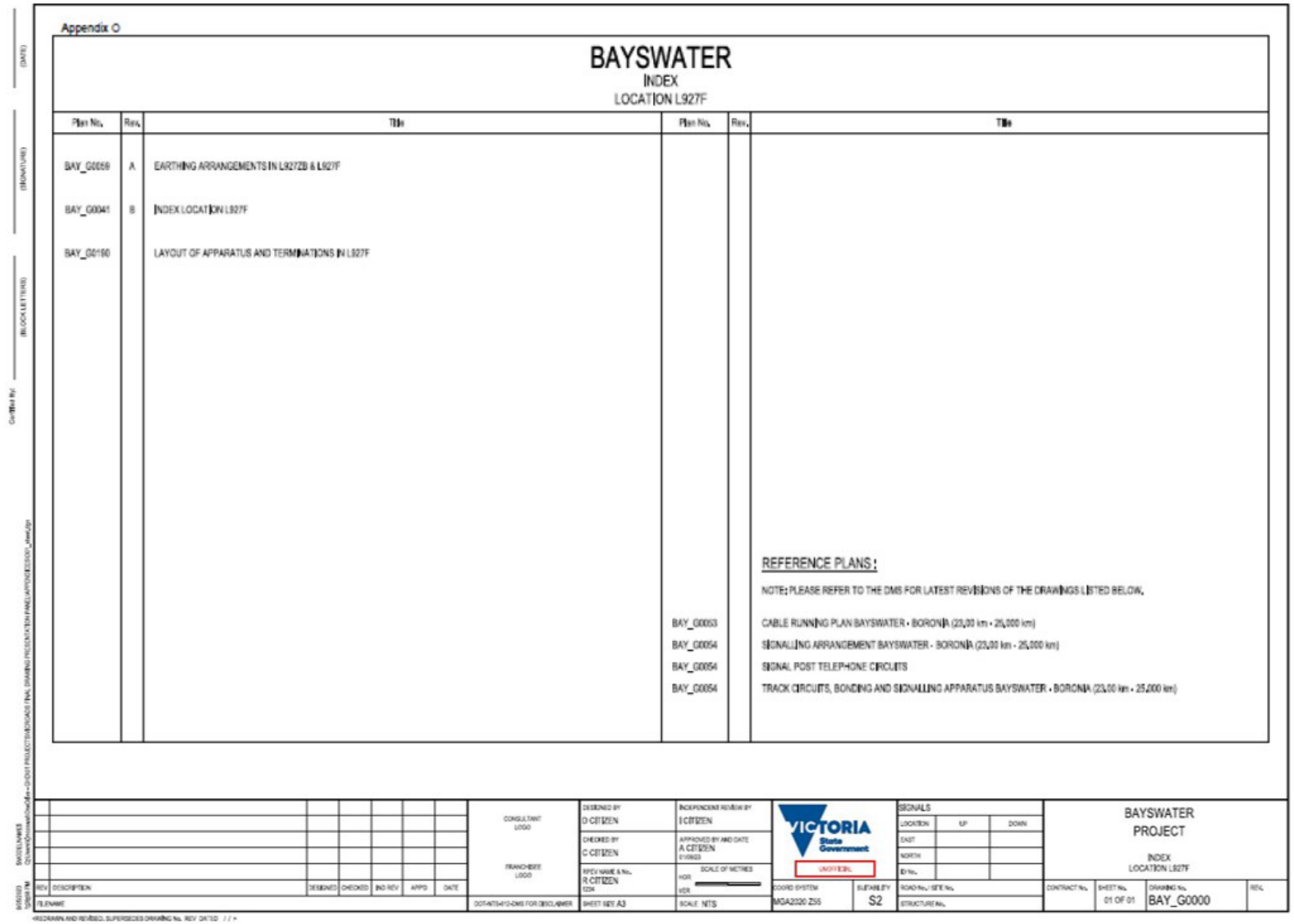
ALTONA JUNCTION PROJECT

LAYOUT OF APPARATUS, TERMINATIONS AND CONTACT Nos. IN 211WR

CONTRACT No.	SHEET No.	DRAWING No.	REV.
	08 OF 09	ALJ_G0000	



Appendix O – Signals Index Sheets



Appendix O

BAYSWATER
INDEX
LOCATION L927F

Plan No.	Rev.	Title
BAY_G0059	A	EARTHING ARRANGEMENTS IN L927ZB & L927F
BAY_G0041	B	INDEX LOCATION L927F
BAY_G0150		LAYOUT OF APPARATUS AND TERMINATIONS IN L927F

Plan No.	Rev.	Title
		REFERENCE PLANS :
		NOTE: PLEASE REFER TO THE DMS FOR LATEST REVISIONS OF THE DRAWINGS LISTED BELOW.
BAY_G0053		CABLE RUNNING PLAN BAYSWATER - BORONIA (23.00 km - 25.000 km)
BAY_G0054		SIGNALLING ARRANGEMENT BAYSWATER - BORONIA (23.00 km - 25.000 km)
BAY_G0054		SIGNAL POST TELEPHONE CIRCUITS
BAY_G0054		TRACK CIRCUITS, BONDING AND SIGNALLING APPARATUS BAYSWATER - BORONIA (23.00 km - 25.000 km)

REV	DESCRIPTION	DESIGNED	CHECKED	IND REV	APPD	DATE

FILENAME

CONSULTANT LOGO

FRANCHISEE LOGO

DESIGNED BY D CITIZEN
CHECKED BY C CITIZEN
RPEV NAME & No. R CITIZEN 1234
SHEET SIZE A3

INDEPENDENT REVIEW BY I CITIZEN
APPROVED BY AND DATE A CITIZEN 01/08/23
SCALE OF METRES
HOR.
VER.
SCALE NTS

VICTORIA State Government
UNOFFICIAL
COORD SYSTEM MGA2020 Z55
SUITABILITY S2

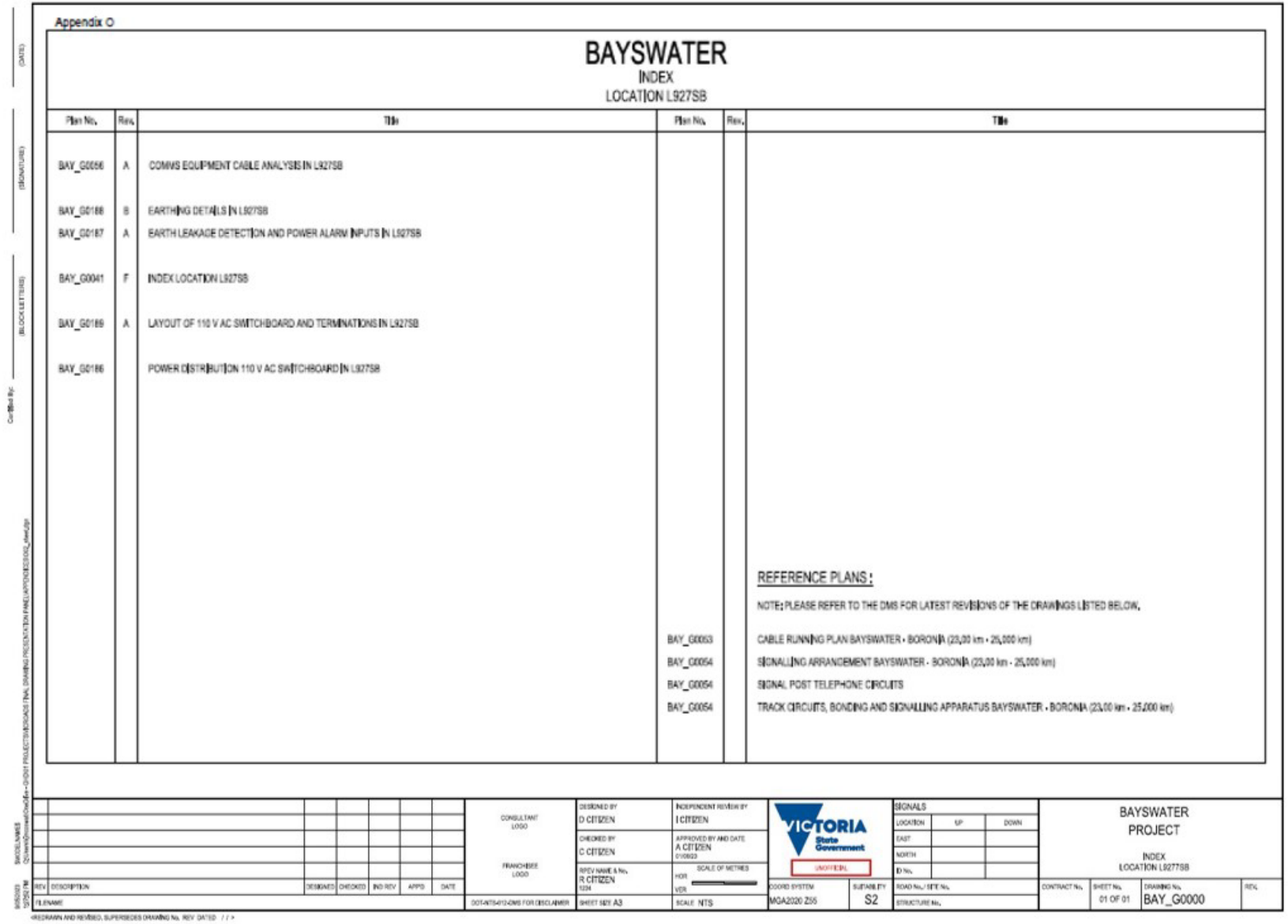
SIGNALS

LOCATION	UP	DOWN
EAST		
NORTH		
ID No.		

ROAD No. / SITE No.
STRUCTURE No.

BAYSWATER PROJECT
INDEX
LOCATION L927F

CONTRACT No.	SHEET No.	DRAWING No.	REV.
	01 OF 01	BAY_G0000	



Appendix O

BAYSWATER
INDEX
LOCATION L927SB

Plan No.	Rev.	Title
BAY_G0056	A	COMMS EQUIPMENT CABLE ANALYSIS IN L927SB
BAY_G0188	B	EARTHING DETAILS IN L927SB
BAY_G0187	A	EARTH LEAKAGE DETECTION AND POWER ALARM INPUTS IN L927SB
BAY_G0041	F	INDEX LOCATION L927SB
BAY_G0189	A	LAYOUT OF 110 V AC SWITCHBOARD AND TERMINATIONS IN L927SB
BAY_G0186		POWER DISTRIBUTION 110 V AC SWITCHBOARD IN L927SB

Plan No.	Rev.	Title
		REFERENCE PLANS :
		NOTE: PLEASE REFER TO THE DMS FOR LATEST REVISIONS OF THE DRAWINGS LISTED BELOW.
BAY_G0053		CABLE RUNNING PLAN BAYSWATER - BORONIA (23,00 km - 25,000 km)
BAY_G0054		SIGNALLING ARRANGEMENT BAYSWATER - BORONIA (23,00 km - 25,000 km)
BAY_G0054		SIGNAL POST TELEPHONE CIRCUITS
BAY_G0054		TRACK CIRCUITS, BONDING AND SIGNALLING APPARATUS BAYSWATER - BORONIA (23,00 km - 25,000 km)

CONSULTANT LOGO

FRANCHISEE LOGO

DESIGNED BY: D CITIZEN

CHECKED BY: C CITIZEN

REVD NAME & No.: R CITIZEN 1234

INDEPENDENT REVIEW BY: I CITIZEN

APPROVED BY AND DATE: A CITIZEN 01/08/23

SCALE OF METRES: HOR / VER

SCALE: NTS

SHEET SIZE: A3

DOT-NTS-012-DMS FOR DISCLAIMER

VICTORIA State Government

UNOFFICIAL

COORD SYSTEM: MGA2020 Z55

SUITABILITY: S2

SIGNALS

LOCATION	UP	DOWN
EAST		
NORTH		
ID No.		

ROAD No. / SITE No.:

STRUCTURE No.:

BAYSWATER PROJECT

INDEX LOCATION L927SB

CONTRACT No.:

SHEET No.: 01 OF 01

DRAWING No.: BAY_G0000

REV.

REV	DESCRIPTION	DESIGNED	CHECKED	IND REV	APPD	DATE

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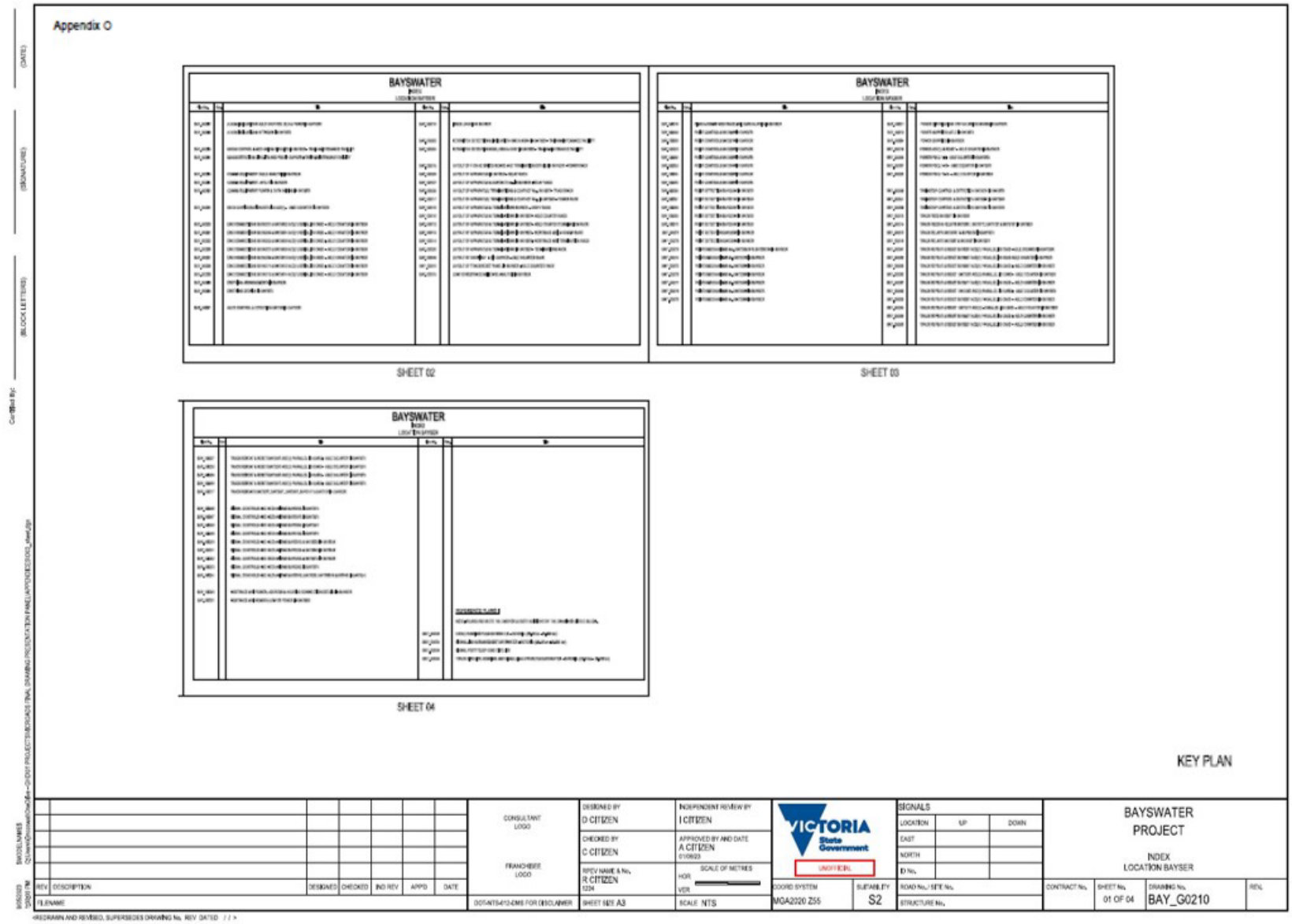

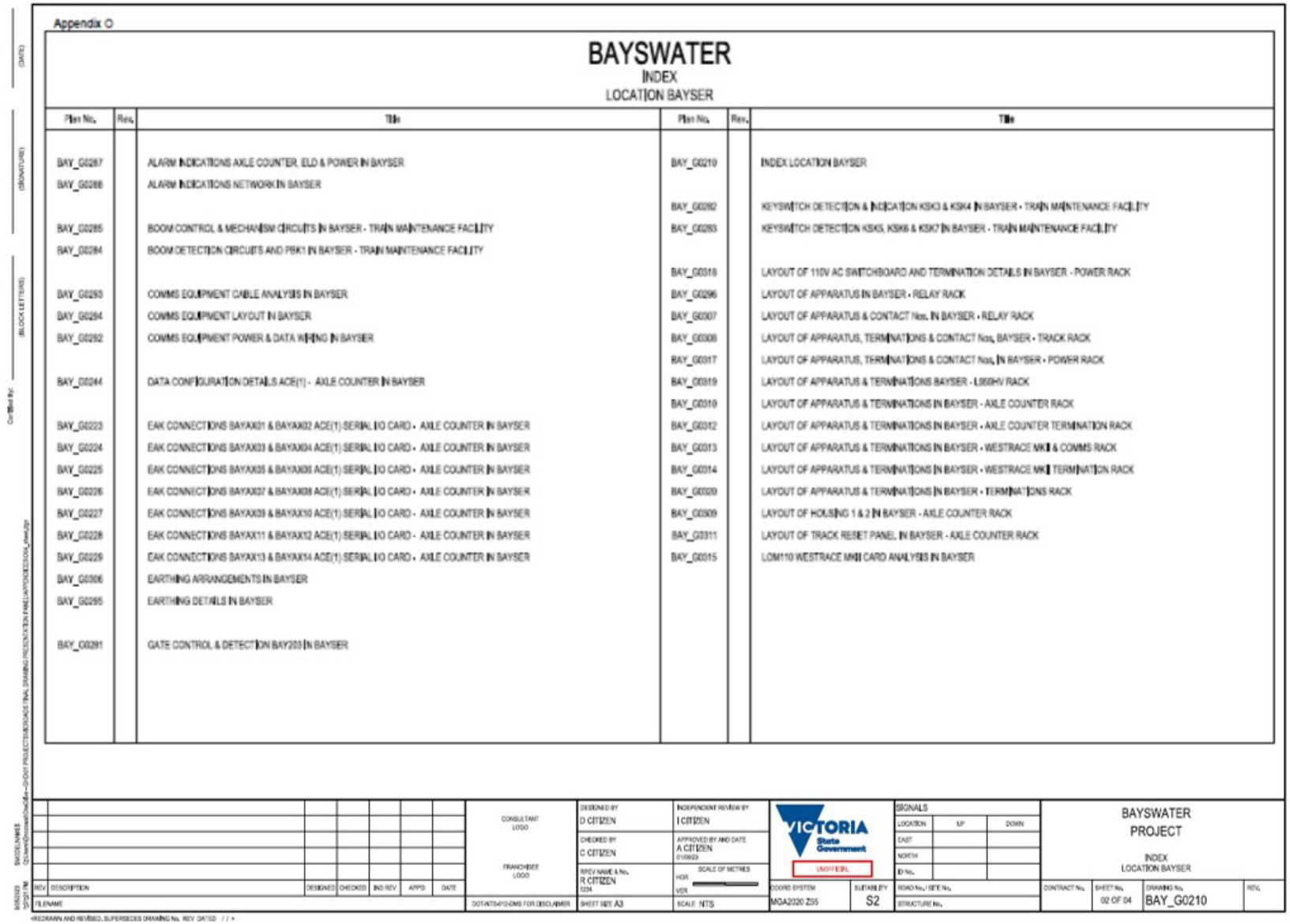

Appendix O

BAYSWATER

INDEX

LOCATION BAYSER

Plan No.	Rev.	Title	Plan No.	Rev.	Title
BAY_G0287		ALARM INDICATIONS AXLE COUNTER, ELD & POWER IN BAYSER	BAY_G0210		INDEX LOCATION BAYSER
BAY_G0288		ALARM INDICATIONS NETWORK IN BAYSER			
			BAY_G0282		KEYSWITCH DETECTION & INDICATION KSK3 & KSK4 IN BAYSER - TRAIN MAINTENANCE FACILITY
BAY_G0285		BOOM CONTROL & MECHANISM CIRCUITS IN BAYSER - TRAIN MAINTENANCE FACILITY	BAY_G0283		KEYSWITCH DETECTION KSK5, KSK6 & KSK7 IN BAYSER - TRAIN MAINTENANCE FACILITY
BAY_G0284		BOOM DETECTION CIRCUITS AND PSK1 IN BAYSER - TRAIN MAINTENANCE FACILITY			
			BAY_G0318		LAYOUT OF 110V AC SWITCHBOARD AND TERMINATION DETAILS IN BAYSER - POWER RACK
BAY_G0293		COMMS EQUIPMENT CABLE ANALYSIS IN BAYSER	BAY_G0296		LAYOUT OF APPARATUS IN BAYSER - RELAY RACK
BAY_G0294		COMMS EQUIPMENT LAYOUT IN BAYSER	BAY_G0307		LAYOUT OF APPARATUS & CONTACT Nos. IN BAYSER - RELAY RACK
BAY_G0292		COMMS EQUIPMENT POWER & DATA WIRING IN BAYSER	BAY_G0308		LAYOUT OF APPARATUS, TERMINATIONS & CONTACT Nos, BAYSER - TRACK RACK
			BAY_G0317		LAYOUT OF APPARATUS, TERMINATIONS & CONTACT Nos, IN BAYSER - POWER RACK
BAY_G0244		DATA CONFIGURATION DETAILS ACE[1] - AXLE COUNTER IN BAYSER	BAY_G0319		LAYOUT OF APPARATUS & TERMINATIONS BAYSER - L90/HV RACK
			BAY_G0310		LAYOUT OF APPARATUS & TERMINATIONS IN BAYSER - AXLE COUNTER RACK
BAY_G0223		EAK CONNECTIONS BAYAX01 & BAYAX02 ACE(1) SERIAL IO CARD - AXLE COUNTER IN BAYSER	BAY_G0312		LAYOUT OF APPARATUS & TERMINATIONS IN BAYSER - AXLE COUNTER TERMINATION RACK
BAY_G0224		EAK CONNECTIONS BAYAX03 & BAYAX04 ACE(1) SERIAL IO CARD - AXLE COUNTER IN BAYSER	BAY_G0313		LAYOUT OF APPARATUS & TERMINATIONS IN BAYSER - WESTRACE MKII & COMMS RACK
BAY_G0225		EAK CONNECTIONS BAYAX05 & BAYAX06 ACE(1) SERIAL IO CARD - AXLE COUNTER IN BAYSER	BAY_G0314		LAYOUT OF APPARATUS & TERMINATIONS IN BAYSER - WESTRACE MKII TERMINATION RACK
BAY_G0226		EAK CONNECTIONS BAYAX07 & BAYAX08 ACE(1) SERIAL IO CARD - AXLE COUNTER IN BAYSER	BAY_G0029		LAYOUT OF APPARATUS & TERMINATIONS IN BAYSER - TERMINATIONS RACK
BAY_G0227		EAK CONNECTIONS BAYAX09 & BAYAX10 ACE(1) SERIAL IO CARD - AXLE COUNTER IN BAYSER	BAY_G0309		LAYOUT OF HOUSING 1 & 2 IN BAYSER - AXLE COUNTER RACK
BAY_G0228		EAK CONNECTIONS BAYAX11 & BAYAX12 ACE(1) SERIAL IO CARD - AXLE COUNTER IN BAYSER	BAY_G0311		LAYOUT OF TRACK RESET PANEL IN BAYSER - AXLE COUNTER RACK
BAY_G0229		EAK CONNECTIONS BAYAX13 & BAYAX14 ACE(1) SERIAL IO CARD - AXLE COUNTER IN BAYSER	BAY_G0315		LOM110 WESTRACE MKII CARD ANALYSIS IN BAYSER
BAY_G0306		EARTHING ARRANGEMENTS IN BAYSER			
BAY_G0295		EARTHING DETAILS IN BAYSER			
BAY_G0291		GATE CONTROL & DETECTION BAY203 IN BAYSER			

REV	DESCRIPTION	DESIGNED	CHECKED	IND REV	APP'D	DATE

FILENAME

<REDRAWN AND REVISED, SUPERSEDES DRAWING No. REV DATED / / >

CONSULTANT LOGO

TRANSURBAN LOGO

DOT-NTS-012-DMS FOR DISCLAIMER

DESIGNED BY D CITIZEN

CHECKED BY C CITIZEN

REV'D NAME & No. R CITIZEN 1234

SHEET SIZE A3

INDEPENDENT REVIEW BY I CITIZEN

APPROVED BY AND DATE A CITIZEN 01/08/23

SCALE OF METRES HOR VER

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VICTORIA State Government

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SUITABILITY S2

SIGNALS

LOCATION	UP	DOWN
EAST		
NORTH		
ID No.		

ROAD No./ SITE No.

STRUCTURE No.

BAYSWATER PROJECT

INDEX LOCATION BAYSER

CONTRACT No.

SHEET No. 02 OF 04

DRAWING No. BAY_G0210

REV.

Appendix O

BAYSWATER

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LOCATION BAYSER

Plan No.	Rev.	Title	Plan No.	Rev.	Title
BAY_G0316		PIN50 & ROM60 WESTRACE MKII CARD ALAYSIS IN BAYSER	BAY_G0211		POWER DISTRIBUTION 110V AC SWITCHBOARD IN BAYSER
BAY_G0259		POINT CONTROLS BAY205W IN BAYSER	BAY_G0212		POWER SUPPLIES & ELD IN BAYSER
BAY_G0260		POINT CONTROLS BAY221W IN BAYSER	BAY_G0304		POWER SUPPLIES IN BAYSER
BAY_G0261		POINT CONTROLS BAY222W IN BAYSER	BAY_G0219		POWER ACE(1) & RESET - AXLE COUNTER IN BAYSER
BAY_G0262		POINT CONTROLS BAY223W IN BAYSER	BAY_G0220		POWER PDCU 1-6 - AXLE COUNTER IN BAYSER
BAY_G0263		POINT CONTROLS BAY224W IN BAYSER	BAY_G0221		POWER PDCU 7-12 - AXLE COUNTER IN BAYSER
BAY_G0264		POINT CONTROLS BAY225W IN BAYSER	BAY_G0222		POWER PDCU 13-14 - AXLE COUNTER IN BAYSER
BAY_G0265		POINT CONTROLS BAY229W IN BAYSER			
BAY_G0266		POINT DETECTION BAY205W IN BAYSER	BAY_G0256		TRAINSTOP CONTROL & DETECTION BAY307V IN BAYSER
BAY_G0267		POINT DETECTION BAY221W IN BAYSER	BAY_G0257		TRAINSTOP CONTROL & DETECTION BAY309V IN BAYSER
BAY_G0268		POINT DETECTION BAY222W IN BAYSER	BAY_G0258		TRAINSTOP CONTROL & DETECTION BAY310V IN BAYSER
BAY_G0269		POINT DETECTION BAY223W IN BAYSER	BAY_G0213		TRACK FEED BAY207T IN BAYSER
BAY_G0270		POINT DETECTION BAY224W IN BAYSER	BAY_G0214		TRACK FEEDS & RELAYS BAY308T, BAY311T, BAY312T & BAY313T IN BAYSER
BAY_G0271		POINT DETECTION BAY225W IN BAYSER	BAY_G0215		TRACK RELAYS BAY207AT & BAY207BT IN BAYSER
BAY_G0272		POINT DETECTION BAY229W IN BAYSER	BAY_G0216		TRACK RELAYS BAY309T & BAY310T IN BAYSER
BAY_G0273		POINTS MECHANISMS Nos. BAY205UW & BAY205DW IN BAYSER	BAY_G0241		TRACK REPEAT & RESET BAY328T ACE(1) PARALLEL I/O CARD - AXLE COUNTER IN BAYSER
BAY_G0274		POINTS MECHANISMS No. BAY221W IN BAYSER	BAY_G0242		TRACK REPEAT & RESET BAY329T ACE(1) PARALLEL I/O CARD AXLE COUNTER IN BAYSER
BAY_G0275		POINTS MECHANISMS No. BAY222W IN BAYSER	BAY_G0243		TRACK REPEAT & RESET BAY330T ACE(1) PARALLEL I/O CARD - AXLE COUNTER IN BAYSER
BAY_G0276		POINTS MECHANISMS No. BAY223W IN BAYSER	BAY_G0230		TRACK REPEAT & RESET BAY205T ACE(1) PARALLEL I/O CARD - AXLE COUNTER IN BAYSER
BAY_G0277		POINTS MECHANISMS No. BAY224W IN BAYSER	BAY_G0231		TRACK REPEAT & RESET BAY221T ACE(1) PARALLEL I/O CARD - AXLE COUNTER IN BAYSER
BAY_G0278		POINTS MECHANISMS No. BAY225W IN BAYSER	BAY_G0232		TRACK REPEAT & RESET BAY222T ACE(1) PARALLEL I/O CARD - AXLE COUNTER IN BAYSER
BAY_G0279		POINTS MECHANISMS No. BAY229W IN BAYSER	BAY_G0233		TRACK REPEAT & RESET BAY229T ACE(1) PARALLEL I/O CARD - AXLE COUNTER IN BAYSER
			BAY_G0234		TRACK REPEAT & RESET BAY321T ACE(1) - PARALLEL I/O CARD - AXLE COUNTER IN BAYSER
			BAY_G0235		TRACK REPEAT & RESET BAY322T ACE(1) PARALLEL I/O CARD - AXLE COUNTER IN BAYSER
			BAY_G0236		TRACK REPEAT & RESET BAY323T ACE(1) PARALLEL I/O CARD - AXLE COUNTER IN BAYSER

REV DESCRIPTION DESIGNED CHECKED IND REV APPD DATE

FILENAME

CONSULTANT LOGO

FRANCHISEE LOGO

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DESIGNED BY D CITIZEN

CHECKED BY C CITIZEN

RPEV NAME & No. R CITIZEN 1234

SHEET SIZE A3

INDEPENDENT REVIEW BY I CITIZEN

APPROVED BY AND DATE A CITIZEN 01/06/23

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SIGNALS

LOCATION	UP	DOWN
EAST		
NORTH		
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ROAD No. / SITE No.

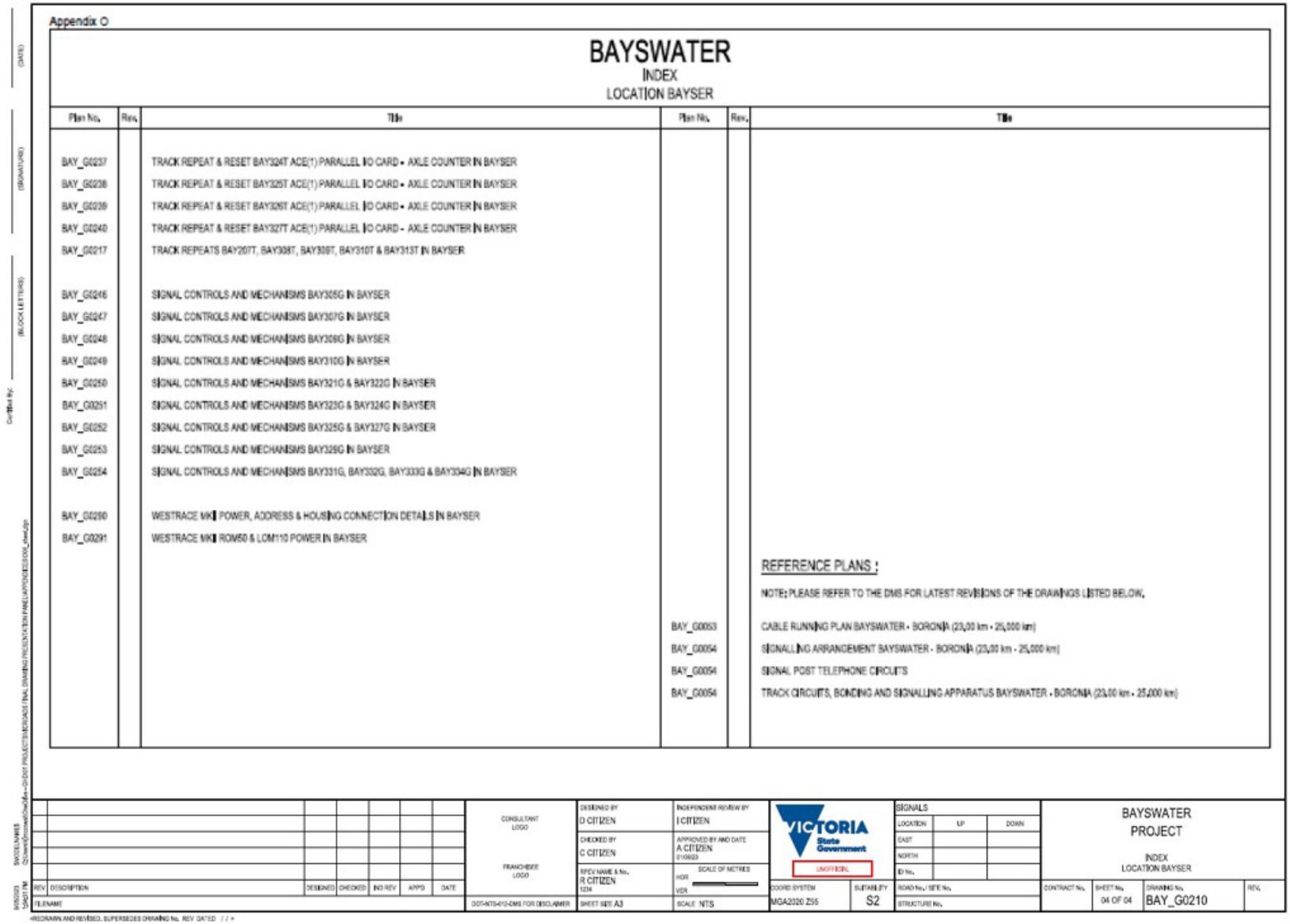
STRUCTURE No.

BAYSWATER PROJECT

INDEX LOCATION BAYSER

CONTRACT No. | SHEET No. 03 OF 04 | DRAWING No. BAY_G0210 | REV.

<REDRAWN AND REVISED, SUPERSEDES DRAWING No. REV DATED / / >



Appendix O

BAYSWATER
INDEX
LOCATION BAYSER

Plan No.	Rev.	Title
BAY_G0237		TRACK REPEAT & RESET BAY324T ACE(1) PARALLEL IO CARD - AXLE COUNTER IN BAYSER
BAY_G0238		TRACK REPEAT & RESET BAY325T ACE(1) PARALLEL IO CARD - AXLE COUNTER IN BAYSER
BAY_G0239		TRACK REPEAT & RESET BAY326T ACE(1) PARALLEL IO CARD - AXLE COUNTER IN BAYSER
BAY_G0240		TRACK REPEAT & RESET BAY327T ACE(1) PARALLEL IO CARD - AXLE COUNTER IN BAYSER
BAY_G0217		TRACK REPEATS BAY207T, BAY308T, BAY309T, BAY310T & BAY313T IN BAYSER
BAY_G0246		SIGNAL CONTROLS AND MECHANISMS BAY305G IN BAYSER
BAY_G0247		SIGNAL CONTROLS AND MECHANISMS BAY307G IN BAYSER
BAY_G0248		SIGNAL CONTROLS AND MECHANISMS BAY308G IN BAYSER
BAY_G0249		SIGNAL CONTROLS AND MECHANISMS BAY310G IN BAYSER
BAY_G0250		SIGNAL CONTROLS AND MECHANISMS BAY321G & BAY322G IN BAYSER
BAY_G0251		SIGNAL CONTROLS AND MECHANISMS BAY323G & BAY324G IN BAYSER
BAY_G0252		SIGNAL CONTROLS AND MECHANISMS BAY325G & BAY327G IN BAYSER
BAY_G0253		SIGNAL CONTROLS AND MECHANISMS BAY329G IN BAYSER
BAY_G0254		SIGNAL CONTROLS AND MECHANISMS BAY331G, BAY332G, BAY333G & BAY334G IN BAYSER
BAY_G0290		WESTRACE MKI POWER, ADDRESS & HOUSING CONNECTION DETAILS IN BAYSER
BAY_G0291		WESTRACE MKI ROM50 & LOM110 POWER IN BAYSER

Plan No.	Rev.	Title
		REFERENCE PLANS :
		NOTE: PLEASE REFER TO THE DMS FOR LATEST REVISIONS OF THE DRAWINGS LISTED BELOW.
BAY_G0053		CABLE RUNNING PLAN BAYSWATER - BORONIA (23.00 km - 25.000 km)
BAY_G0054		SIGNALLING ARRANGEMENT BAYSWATER - BORONIA (23.00 km - 25.000 km)
BAY_G0054		SIGNAL POST TELEPHONE CIRCUITS
BAY_G0054		TRACK CIRCUITS, BONDING AND SIGNALLING APPARATUS BAYSWATER - BORONIA (23.00 km - 25.000 km)

REV	DESCRIPTION	DESIGNED	CHECKED	IND REV	APPD	DATE

FILENAME

CONSULTANT LOGO

FRANCHISEE LOGO

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CHECKED BY: C CITIZEN
RPEV NAME & No.: R CITIZEN 1234
SHEET SIZE: A3

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APPROVED BY AND DATE: A CITIZEN 01/06/23
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SCALE: NTS

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SUITABILITY: S2

SIGNALS

LOCATION	UP	DOWN
EAST		
NORTH		
ID No.		

ROAD No. / SITE No.
STRUCTURE No.

BAYSWATER PROJECT

INDEX
LOCATION BAYSER

CONTRACT No. | SHEET No. 04 OF 04 | DRAWING No. BAY_G0210 | REV.

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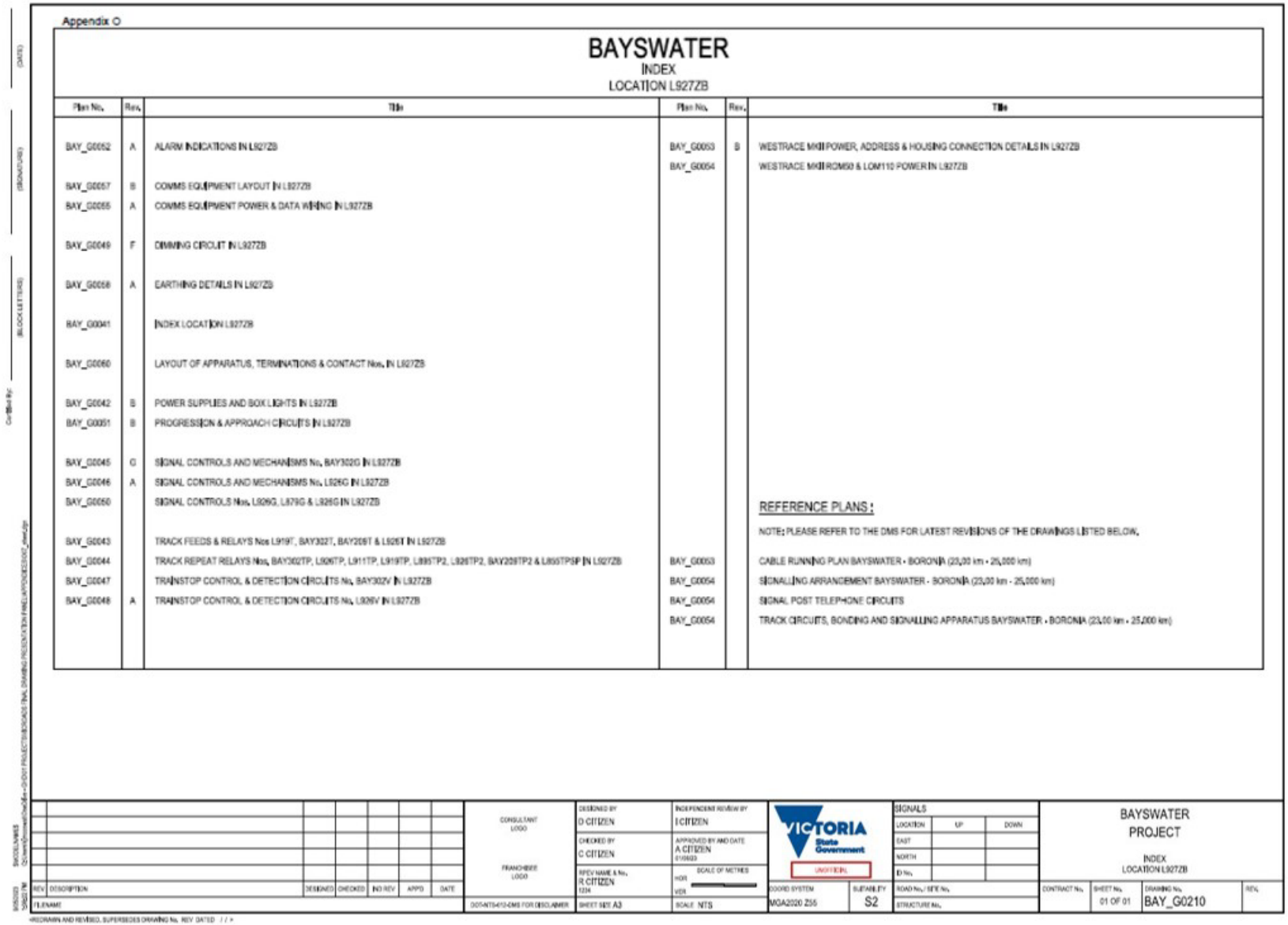

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BAYSWATER
INDEX
LOCATION L927ZB

Plan No.	Rev.	Title
BAY_G0052	A	ALARM INDICATIONS IN L927ZB
BAY_G0057	B	COMMS EQUIPMENT LAYOUT IN L927ZB
BAY_G0055	A	COMMS EQUIPMENT POWER & DATA WIRING IN L927ZB
BAY_G0049	F	DIMMING CIRCUIT IN L927ZB
BAY_G0058	A	EARTHING DETAILS IN L927ZB
BAY_G0041		INDEX LOCATION L927ZB
BAY_G0060		LAYOUT OF APPARATUS, TERMINATIONS & CONTACT Nos. IN L927ZB
BAY_G0042	B	POWER SUPPLIES AND BOX LIGHTS IN L927ZB
BAY_G0051	B	PROGRESSION & APPROACH CIRCUITS IN L927ZB
BAY_G0045	C	SIGNAL CONTROLS AND MECHANISMS No. BAY302G IN L927ZB
BAY_G0046	A	SIGNAL CONTROLS AND MECHANISMS No. L926G IN L927ZB
BAY_G0050		SIGNAL CONTROLS Nos. L926G, L879G & L926G IN L927ZB
BAY_G0043		TRACK FEEDS & RELAYS Nos L919T, BAY302T, BAY209T & L926T IN L927ZB
BAY_G0044		TRACK REPEAT RELAYS Nos, BAY302TP, L926TP, L911TP, L919TP, L886TP2, L926TP2, BAY209TP2 & L886TPSP IN L927ZB
BAY_G0047		TRAINSTOP CONTROL & DETECTION CIRCUITS No. BAY302V IN L927ZB
BAY_G0048	A	TRAINSTOP CONTROL & DETECTION CIRCUITS No. L926V IN L927ZB

Plan No.	Rev.	Title
BAY_G0053	B	WESTRACE MKII POWER, ADDRESS & HOUSING CONNECTION DETAILS IN L927ZB
BAY_G0054		WESTRACE MKII ROM60 & LOM110 POWER IN L927ZB

REFERENCE PLANS:

NOTE: PLEASE REFER TO THE DMS FOR LATEST REVISIONS OF THE DRAWINGS LISTED BELOW.

BAY_G0053	CABLE RUNNING PLAN BAYSWATER - BORONIA (23.00 km - 25.000 km)
BAY_G0054	SIGNALLING ARRANGEMENT BAYSWATER - BORONIA (23.00 km - 25.000 km)
BAY_G0054	SIGNAL POST TELEPHONE CIRCUITS
BAY_G0054	TRACK CIRCUITS, BONDING AND SIGNALLING APPARATUS BAYSWATER - BORONIA (23.00 km - 25.000 km)

REV	DESCRIPTION	DESIGNED	CHECKED	NO REV	APPD	DATE

FILENAME

CONSULTANT LOGO

FRANCHISEE LOGO

DESIGNED BY: D CITIZEN

CHECKED BY: C CITIZEN

REV NAME & No.: R CITIZEN 1234

INDEPENDENT REVIEW BY: I CITIZEN

APPROVED BY AND DATE: A CITIZEN 01/09/23

SCALE OF METRES: HOR / VER

SHEET SIZE: A3

SCALE: NTS

VICTORIA State Government

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SIGNALS		
LOCATION	UP	DOWN
EAST		
NORTH		
ID No.		

COORD SYSTEM: MGA2020 Z55

SUBABILITY: S2

ROAD No./ SEE No.

STRUCTURE No.

BAYSWATER PROJECT

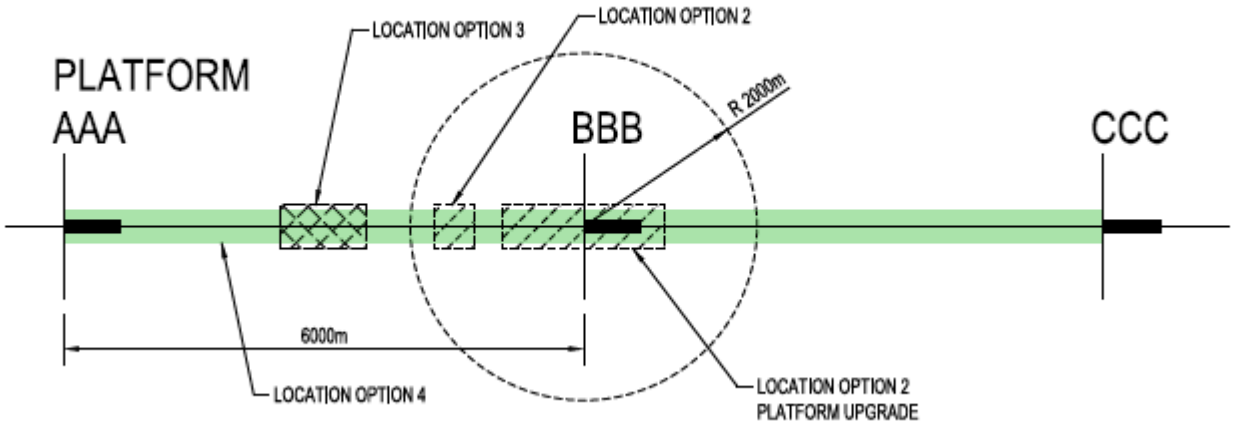
INDEX LOCATION L927ZB

CONTRACT No.	SHEET No.	DRAWING No.	REV.
	01 OF 01	BAY_G0210	

Appendix P – DMS Location Code Guidelines Diagram

Appendix P

DMS LOCATION CODE GUIDELINES DIAGRAM



LOCATION OPTION 2

I. If the information that is shown on the cad file is not part of an interlocking but is within 2km of a station or junction, the location name shall be the closest station or junction.

II. If the nature of any project is linked entirely to a Platform upgrade then all disciplines would be associated with a single location.

III. Projects consisting of details covering a large section of the line (eg OH alignment project) should consider option 4 for drawing coverage. Remaining disciplines associated with Platform upgrades (including but not limited to the following disciplines ie Civil structural, Architectural, Structural, Building services and Telecommunication) would still implement location option I.

Example 1:
Location Name: BBB
Title 1: BLOCK SHELF DIAGRAM
Example 2:
Location Name: BBB
Title 1: BBB STATION
Title 2: ROOF PLAN - PLATFORM 1

LOCATION OPTION 3

If the information shown on the cad file is not part of an interlocking or within 2 km from any station or junction, Title 1 of the title block shall have the two stations or junctions either side of the design listed (e.g. AAA – BBB) and the location will be the up end station or junction (ie. AAA).

Eg:
Location Name: AAA
Title 1: AAA – BBB
Title 2: SIGNALLING ARRANGEMENT

LOCATION OPTION 4

If the information shown on the CAD file covers a large section of line (e.g. rail signalling arrangements, cable running plans, cable route plans, bonding plans, civil track alignments, drainage, combined services route, maintenance path and OH alignments) and is not part of an interlocking, Title 1 of the title block shall have the two stations or junctions either side of the design listed (e.g. AAA – BBB or BBB - CCC) and the location shall be the up end station or junction (ie. AAA or BBB).

Example 1:
Location Name: AAA
Title 1: AAA – BBB
Title 2: CABLE RUNNING PLAN
Example 2:
Location Name: AAA
Title 1: AAA – BBB
Title 2: TRACK ALIGNMENT PLAN

FOR FURTHER INFORMATION REFER TO 'PTV LOCATION CODE GUIDELINES'

Appendix Q – Layers / Levels

Appendix Q1 – General Levels

Appendix Q2 – Signals Levels

Appendix Q3 – Railway Track and Civil Levels

Appendix Q4 – Civil Structural Levels

Appendix Q5 – Telecommunications Layers

Appendix Q6 – Train Electrical Network Levels

Appendix Q7 – Architectural Layers

Appendix Q8 – Building Services Layers

Appendix Q9 – Structural Layers

Appendix Q10 – Tram Infrastructure Levels

Appendix Q11 – Road Levels

Appendix Q12 – Road Drainage Levels

Appendix Q13 – Intelligent Transport Systems Levels

Appendix Q14 – Geotechnical Levels

Appendix Q15 – Survey Levels

Appendix Q1 – General Levels

Level	Colour	Line Style	Line Weight	Description
X-D-SECTION-MISC	0	0	0	Sections - Miscellaneous
X-D-SECTION-ORDINATES	14	0	0	Sections - Ordinate Lines
X-D-SECTION	0	0	1	Sections - Section components
X-D-SECTION-TEXT	0	0	0	Sections - Text
X-D-SECTION-POINTS	0	0	1	Sections - Salient Points
X-D-BOUNDARY-NO-GO-ZONE	5	0	2	Boundary - No go zone
X-E-BOUNDARY-XXX	6	0	2	Boundary - Existing [Insert Boundary Type]
X-D-BOUNDARY-XXX	10	4	2	Boundary- Proposed [Insert Boundary Type]
X-E-SECTION-BOUNDARY	1	0	1	Sections - Existing Boundaries
X-E-SECTION-BOUNDARY-ROW	1	0	1	Sections - Existing ROW Boundaries
X-D-SECTION-BOUNDARY	10	0	1	Sections - Proposed Boundaries
X-D-SECTION-BOUNDARY-ROW	10	0	1	Sections - Proposed ROW Boundaries
X-X-TEXT	0	0	1	Text and Dimensions general
X-E-TRACE	0	0	1	General - traced elements - Existing
X-D-TEXT-18	0	0	0	Text and Dimensions 1.8mm
X-D-TEXT-25	0	0	1	Text and Dimensions 2.5mm
X-D-TEXT-35	0	0	2	Text and Dimensions 3.5mm
X-D-TEXT-50	0	0	3	Text and Dimensions 5.0mm
X-D-TEXT-70	0	0	4	Text and Dimensions 7.0mm
X-E-TEXT-18	0	0	0	Text and Dimensions 1.8mm - Existing
X-E-TEXT-25	0	0	1	Text and Dimensions 2.5mm - Existing
X-E-TEXT-35	0	0	2	Text and Dimensions 3.5mm - Existing
X-E-TEXT-50	0	0	3	Text and Dimensions 5.0mm - Existing
X-E-TEXT-70	0	0	4	Text and Dimensions 7.0mm - Existing
X-X-GEN-IMAGES	0	0	0	Images attached
X-X-TEXT-LIMIT	0	0	2	Text - Limit of Works / Match Lines
X-X-TEXT-MASKING	0	0	2	Masking shapes using MicroStation background colour
X-X-PLOT-CONTROL-SHAPE	0	1	0	Plotting Border - batch printing from model space
X-X-TEXT-RAILWAY-NAMES	0	0	0	Text - Various Railway Names
X-X-TEXT-RIVERNAMES	0	0	0	Text - Various River / Creek Names
X-X-TEXT-ROADNAMES	0	0	0	Text - Various Road Names
X-X-TEXT-SETOUT-DETAIL	0	0	0	Set out points - Various
X-X-SENSITIVITY-LABEL	3	0	3	Titleblock - Sensitivity label
X-X-TITLE-TEXT-ATTRIBUTES	0	0	0	Titleblock - Tags / Attributes
X-X-TITLE-FRAME	0	0	1	Titleblock - Frame

Level	Colour	Line Style	Line Weight	Description
X-X-NON-PLOTTING-CHECKS	13	0	0	Titleblock - Non plotting various checks
X-X-NON-PLOTTING-CLIP	5	2	0	Titleblock - Clip masks / boundaries
X-X-NON-PLOTTING	4	0	0	Titleblock - Non plotting general
X-VIEWPORT-HIDDEN	4	0	0	Titleblock - Non plotting sheet
X-VIEWPORT-HIDDEN-LONG PLOT	4	0	0	Titleblock - Non plotting long plot sheet
X-X-TITLE-TEXT	0	0	0	Titleblock - Text
X-X-LOGO	0	0	0	Titleblock - Vic logo
X-X-LOGO-CONSULTANT	0	0	0	Titleblock - Consultant logo
X-X-LOGO-FRANCHISEE	0	0	0	Titleblock - Franchisee logo
X-X-PLOT-INFO	0	0	0	Titleblock - Date and time stamps
X-D-SECTION-HGL	1	4	1	Drainage - Sections - Hydralic Grade Line
X-E-SECTION-PIPE	16	0	2	Drainage - Sections - Existing Pipes/Culverts - Various
X-D-SECTION-PIPE	0	0	2	Drainage - Sections - Pipes/Culverts - Various
X-D-SECTION-PIT	0	0	2	Drainage - Sections - Various
X-E-SECTION-PIT	16	0	2	Drainage - Sections - Existing Various
X-D-SECTION-STRUC-NUM	0	0	1	Drainage - Sections - Pit and Endwall structure numbers
X-D-SECTION-TWL	0	4	1	Drainage - Sections - Top Water Level
X-X-NORTH-POINT	0	0	1	North Point
X-X-NAMED-BOUNDARY	14	0	1	Named Boundary

Appendix Q2 – Signals Levels

Level Name	Colour	Works	Stage
G-IN SERVICE	White - Colour # 0	Works that shall be as In service in the field	In service stage
G-NEW WORK	Red – Colour # 81	Works that shall be installed	Design and construct stage
G-REMOVAL WORK	Yellow - Colour # 4	Works that shall be removed	Design and construct stage
G-FUTURE WORK	Green – Colour #2	New circuits future stage	Design and construct stage
G-ALTERATION TO RED OR GREEN CIRCUITS	Blue – Colour #24	Alterations to Red or Green circuits	Design and construct Stage
G-EXISTING CIRCUITS	Brown – Colour #43	Present circuits in service to be retained	Design and construct Stage
G – TEMP NEW WORKS	Purple – Colour #157	Temporary new works	Design and construct stage

Appendix Q3 – Railway Track and Civil Levels

Level	Colour	Line Style	Line Weight	Description
C-D-DRAIN-UG	8	VT-DRAN-UG	2	Design Levels
C-D-DRAIN-PIPE	0	VT-300mmPIPE	2	Design Levels
C-D-DRAIN-PIT	8	0	1	Design Levels
C-D-DRAIN-PIT-GP	8	0	1	Design Levels
C-D-DRAIN-PIT-JP	8	0	1	Design Levels
C-D-DRAIN-PIT-SEP	8	0	1	Design Levels
C-D-DRAIN-CULVERT	8	0	2	Design Levels
C-D-DRAIN-EDGE	8	0	1	Design Levels
C-D-DRAIN-EWALL	3	0	1	Design Levels
C-D-DRAIN-INVERT	0	VT-DRAN-UG	1	Design Levels
C-D-DRAIN-ROCK-BEACHING	0	0	1	Design Levels
C-D-DRAIN-SSD-PIPE	0	VT-DRAIN-SSD	1	Design Levels
C-D-DRAIN-V-DRAIN	1	VT-DRAN-CL	2	Design Levels
C-D-DRAIN-X				Design Levels
C-D-FEAT-EARTHWORKS	13	0	2	Design Levels
C-D-FEAT-EMBKT-TOE	6	2	2	Design Levels
C-D-FEAT-EMBKT-TOP	6	3	2	Design Levels
C-D-FEAT-EWK-CUT	2	7	2	Design Levels
C-D-FEAT-EWK-FILL	3	7	2	Design Levels
C-D-FEAT-PATH	16	5	2	Design Levels
C-D-FEAT-X	0	0	0	Design Levels
C-D-FEAT-X	0	0	0	Design Levels
C-D-FEAT-XXX	0	0	0	Design Levels
C-D-FEAT-XXXX	0	0	0	Design Levels
C-D-FEAT-XXXXX	0	0	0	Design Levels
C-D-FENCE-FENCELINE	0	VT-FENC-LN	2	Design Levels
C-D-FENCE-GATE	0	0	2	Design Levels
C-D-FENCE-POST	0	0	2	Design Levels
C-D-RAIL-BALLAST-TOE	14	0	2	Design Levels
C-D-RAIL-BALLAST-TOP	14	0	2	Design Levels
C-D-RAIL-BAULK	0	0	3	Design Levels
C-D-RAIL-BNDY	1	4	3	Design Levels
C-D-RAIL-CTRL-XXX	0	4	1	Design Levels
C-D-RAIL-IP	0	0	1	Design Levels
C-D-RAIL-PATHWAY	29	0	2	Design Levels
C-D-RAIL-PLATFORM	1	0	2	Design Levels

Level	Colour	Line Style	Line Weight	Description
C-D-RAIL-SLEEPER-CONCRETE	14	0	2	Design Levels
C-D-RAIL-SLEEPER-TIMBER	43	0	2	Design Levels
C-D-RAIL-SLUED-BG	3	3	2	Design Levels
C-D-RAIL-SLUED-SG	5	3	2	Design Levels
C-D-RAIL-TRACK TO BE REMOVED	2	1	3	Design Levels
C-D-RAIL-TRACK TO BE SLEWED	2	3	1	Design Levels
C-D-RAIL-TRACK-BG	3	0	2	Design Levels
C-D-RAIL-TRACK-BG-2	13	0	2	Design Levels
C-D-RAIL-TRACK-BG-3	77	0	2	Design Levels
C-D-RAIL-TRACK-BG-4	98	0	2	Design Levels
C-D-RAIL-TRACK-BG-5	92	0	2	Design Levels
C-D-RAIL-TRACK-BG-6	141	0	2	Design Levels
C-D-RAIL-TRACK-BG-7	2	0	2	Design Levels
C-D-RAIL-TRACK-DG	8	0	2	Design Levels
C-D-RAIL-TRACK-SG	5	0	3	Design Levels
C-D-RAIL-TRACK-TRAM	3	0	3	Design Levels
C-D-RAIL-TURNOUT-BG	3	0	3	Design Levels
C-D-RAIL-TURNOUT-CTRL	0	4	1	Design Levels
C-D-RAIL-TURNOUT-DG	8	0	3	Design Levels
C-D-RAIL-TURNOUT-LIMITS	0	0	1	Design Levels
C-D-RAIL-TURNOUT-SG	5	0	2	Design Levels
C-D-RAIL-X	0	0	0	Design Levels
C-D-RAIL-XX	0	0	0	Design Levels
C-D-RAIL-XXX	0	0	0	Design Levels
C-D-RAIL-XXXX	0	0	0	Design Levels
C-D-RAIL-XXXXX	0	0	0	Design Levels
C-D-UTIL-FIRE-SERVICE-UG	19	VT-FIRE-HYD- UG	1	Utilities Level
C-D-UTIL-FIRE-HYDRANT	19	0	1	Utilities Level
C-D-UTIL-FIRE-PLUG	19	0	1	Utilities Level
C-D-UTIL-SEWER-UG	3	VT-SEWR-UG	1	Utilities Level
C-D-UTIL-SEWER-PIT	3	0	1	Utilities Level
C-D-UTIL-SEWER-VENT	3	0	1	Utilities Level
C-D-UTIL-WATER-UG	17	VT-WATR-UG	3	Utilities Level
C-D-UTIL-WATER-METER	17	0	3	Utilities Level
C-D-UTIL-WATER-STOP-VALVE	17	0	3	Utilities Level
C-D-UTIL-STAY	0	0	2	Utilities Level
C-D-UTIL-UG-X	0	0	0	Utilities Level
C-D-UTIL-UG-XX	0	0	0	Utilities Level
C-D-TEXT-18	0	0	0	Miscellaneous Design Levels

Level	Colour	Line Style	Line Weight	Description
C-D-TEXT-25	0	0	1	Miscellaneous Design Levels
C-D-TEXT-35	0	0	2	Miscellaneous Design Levels
C-D-TEXT-50	0	0	3	Miscellaneous Design Levels
C-D-TEXT-70	0	0	4	Miscellaneous Design Levels
C-D-MODEL-BOUNDARY	10	0	1	Miscellaneous Design Levels
C-D-MODEL-CONTOUR-LABEL	14	0	1	Miscellaneous Design Levels
C-D-MODEL-CONTOUR-MAJOR	14	0	1	Miscellaneous Design Levels
C-D-MODEL-CONTOUR-MINOR	14	0	0	Miscellaneous Design Levels
C-D-MODEL-TRIANGLES	2	0	0	Miscellaneous Design Levels
C-E-DRAIN-UG	250	VT-DRAN-UG	0	Existing Design Levels
C-E-DRAIN-PIPE-QL-	250	VT-300mmPIPE	0	Existing Design Levels
C-E-DRAIN-PIT	24	0	0	Existing Design Levels
C-E-DRAIN-PIT-GP	24	0	2	Existing Design Levels
C-E-DRAIN-PIT-JP	24	0	2	Existing Design Levels
C-E-DRAIN-PIT-SEP	24	0	2	Existing Design Levels
C-E-DRAIN-CULVERT	24	0	0	Existing Design Levels
C-E-DRAIN-EDGE	24	0	2	Existing Design Levels
C-E-DRAIN-EWALL	19	0	1	Existing Design Levels
C-E-DRAIN-INVERT	250	VT-DRAN-CL	1	Existing Design Levels
C-E-DRAIN-ROCK-BEACHING	250	0	0	Existing Design Levels
C-E-DRAIN-SSE-PIPE	250	VT-DRAIN-CESS	0	Existing Design Levels
C-E-DRAIN-V-DRAIN	17	0	0	Existing Design Levels
C-E-FEAT-BATTER	29	0	2	Existing Design Levels
C-E-FEAT-EMBKT-TOE	29	3	0	Existing Design Levels
C-E-FEAT-EMBKT-TOP	29	0	2	Existing Design Levels
C-E-FEAT-PATH	14	0	2	Existing Design Levels
C-E-FEAT-TREE	133	0	0	Existing Design Levels
C-E-FEAT-VEG	133	0	0	Existing Design Levels
C-E-FEAT-WATER-EDGE	8	2	0	Existing Design Levels
C-E-FEAT-X	0	0	0	Existing Design Levels
C-E-FEAT-XX	0	0	0	Existing Design Levels
C-E-FEAT-XXX	0	0	0	Existing Design Levels
C-E-FEAT-XXXX	0	0	0	Existing Design Levels
C-E-FEAT-XXXXX	0	0	0	Existing Design Levels
C-E-FENCE-FENCELINE	0	VT-FENC-LN	1	Existing Design Levels
C-E-FENCE-GATE	0	0	1	Existing Design Levels
C-E-FENCE-POST	0	0	1	Existing Design Levels
C-E-RAIL-BALLAST-TOE	6	5	0	Existing Design Levels
C-E-RAIL-BALLAST-TOP	6	0	0	Existing Design Levels

Level	Colour	Line Style	Line Weight	Description
C-E-RAIL-BAULK	0	0	1	Existing Design Levels
C-E-RAIL-BNDY	0	3	3	Existing Design Levels
C-E-RAIL-CTRL	0	4	0	Existing Design Levels
C-E-RAIL-IP	0	0	1	Existing Design Levels
C-E-RAIL-PATHWAY	29	0	2	Existing Design Levels
C-E-RAIL-PLATFORM	0	0	1	Existing Design Levels
C-E-RAIL-SLEEPER-CONCRETE	14	0	1	Existing Design Levels
C-E-RAIL-SLEEPER-TIMER	43	0	1	Existing Design Levels
C-E-RAIL-SLUED-BG	0	3	1	Existing Design Levels
C-E-RAIL-SLUED-DG	0	3	1	Existing Design Levels
C-E-RAIL-SLUED-SG	0	3	1	Existing Design Levels
C-E-RAIL-TRACK	0	0	1	Existing Design Levels
C-E-RAIL-TRACK-BG	0	0	1	Existing Design Levels
C-E-RAIL-TRACK-DG	0	0	1	Existing Design Levels
C-E-RAIL-TRACK-SG	0	0	1	Existing Design Levels
C-E-RAIL-TRACK-TRAM	0	0	1	Existing Design Levels
C-E-RAIL-TRACK-TURNOUT	0	0	0	Existing Design Levels
C-E-RAIL-TURNOUT-CTRL	0	4	1	Existing Design Levels
C-E-RAIL-TURNOUT-LIMITS	0	0	1	Existing Design Levels
C-E-RAIL-X	0	0	0	Existing Design Levels
C-E-RAIL-XX	0	0	0	Existing Design Levels
C-E-RAIL-XXX	0	0	0	Existing Design Levels
C-E-RAIL-XXXX	0	0	0	Existing Design Levels
C-E-RAIL-XXXXX	0	0	0	Existing Design Levels
C-E-TEXT-18	0	0	0	Existing Miscellaneous Levels
C-E-TEXT-25	0	0	1	Existing Miscellaneous Levels
C-E-TEXT-35	0	0	2	Existing Miscellaneous Levels
C-E-TEXT-50	0	0	3	Existing Miscellaneous Levels
C-E-TEXT-70	0	0	4	Existing Miscellaneous Levels
C-E-MODEL-BOUNDARY	10	0	0	Existing Miscellaneous Levels
C-E-MODEL-CONTOUR-LABEL	43	0	1	Existing Miscellaneous Levels
C-E-MODEL-CONTOUR-MAJOR	43	0	1	Existing Miscellaneous Levels
C-E-MODEL-CONTOUR-MINOR	43	0	0	Existing Miscellaneous Levels
C-E-MODEL-TRIANGLES	2	0	0	Existing Miscellaneous Levels
C-LS-D-FEAT-EARTHWORKS	13	0	1	Longitudinal Sections Levels
C-LS-D-GEOM	14	0	0	Longitudinal Sections Levels
C-LS-D-HORZ	0	0	1	Longitudinal Sections Levels
C-LS-D-SURFACE	1	0	2	Longitudinal Sections Levels
C-LS-D-TRACK	0	0	1	Longitudinal Sections Levels

Level	Colour	Line Style	Line Weight	Description
C-LS-D-SURFACE-VERT	0	0	1	Longitudinal Sections Levels
C-LS-E-SURFACE	2	2	0	Longitudinal Sections Levels
C-LS-E-TRACK	0	0	0	Longitudinal Sections Levels
C-XS-D-BALLAST-TOE	14	0	0	Cross Sections Levels
C-XS-D-BALLAST-TOP	14	0	0	Cross Sections Levels
C-XS-D-SLEEPER-CONCRETE	14	0	0	Cross Sections Levels
C-XS-D-SLEEPER-TIMBER	43	0	0	Cross Sections Levels
C-XS-D-SURFACE	1	0	1	Cross Sections Levels
C-XS-D-TRACK	0	0	1	Cross Sections Levels
C-XS-E-SURFACE	2	2	0	Cross Sections Levels
C-XS-E-TRACK	0	0	0	Cross Sections Levels
C-X-CELLS	0	0	1	Cross Sections Levels
C-X-DRGSHEET	0	0	1	Cross Sections Levels
C-X-GRID	26	0	0	Cross Sections Levels
C-X-NON-PLOTTING	4	0	0	Cross Sections Levels
C-X-NORTH	0	0	1	Cross Sections Levels
C-X-REVISION-CLOUD	3	0	1	Cross Sections Levels
C-X-SCALEBAR	0	0	1	Cross Sections Levels

Appendix Q4 – Civil Structural Levels

Level	Colour	Line Style	Line Weight	Description
C-D-STRUCT-BARRIER	0	0	2	Design Levels
C-D-STRUCT-BEAM	2	0	1	Design Levels
C-D-STRUCT-BLDG-OUTLINE	29	0	2	Design Levels
C-D-STRUCT-BLDG-ROOF- OVERHANG	29	0	2	Design Levels
C-D-STRUCT-BRIDGE	29	0	2	Design Levels
C-D-STRUCT-BARRIER	0	0	2	Design Levels
C-D-STRUCT-BLDG-OUTLINE	29	0	2	Design Levels
C-D-STRUCT-BLDG-ROOF- OVERHANG	29	0	2	Design Levels
C-D-STRUCT-BRIDGE	29	0	2	Design Levels
C-D-STRUCT-BRIDGE-DECK	12	0	0	Design Levels
C-D-STRUCT-BRIDGE-SOFFIT	0	1	1	Design Levels
C-D-STRUCT-CTRL	0	4	0	Design Levels
C-D-STRUCT-FOOTBRIDGE	29	0	2	Design Levels
C-D-STRUCT-FOOTPATH	29	0	1	Design Levels
C-D-STRUCT-HANDRAIL	0	0	0	Design Levels
C-D-STRUCT-HATCH	7	0	0	Design Levels
C-D-STRUCT-MISC	29	0	2	Design Levels
C-D-STRUCT-PIER	16	0	2	Design Levels
C-D-STRUCT-PILE	0	0	2	Design Levels
C-D-STRUCT-PILE-CAP	0	0	2	Design Levels
C-D-STRUCT-RAMP	29	0	2	Design Levels
C-D-STRUCT-REO	0	0	2	Design Levels
C-D-STRUCT-RETAININGWALL	14	0	2	Design Levels
C-D-STRUCT-SLAB	14	0	2	Design Levels
C-D-STRUCT-SLAB-FOOTING	14	0	2	Design Levels
C-D-STRUCT-SOIL-NAIL	0	0	1	Design Levels
C-D-STRUCT-STAIRS	3	0	1	Design Levels
C-D-STRUCT-SUBWAY	29	0	2	Design Levels
C-D-STRUCT-TUNNEL	29	0	2	Design Levels
C-D-STRUCT-X	0	0	0	Design Levels
C-D-STRUCT-XX	0	0	0	Design Levels
C-D-STRUCT-XXX	0	0	0	Design Levels
C-D-STRUCT-XXXX	0	0	0	Design Levels
C-D-STRUCT-XXXXX	0	0	0	Design Levels
C-D-STRUCT-ABUT-ANTI-SLIDING-BLOCK	3	0	0	Design Levels
C-D-STRUCT-ABUT-CL	3	4	0	Design Levels

Level	Colour	Line Style	Line Weight	Description
C-D-STRUCT-ABUT-FENDERWALL-HIDDEN	3	2	0	Design Levels
C-D-STRUCT-ABUT-FENDERWALL-OUTLINE 1	4	0	3	Design Levels
C-D-STRUCT-ABUT-HIDDEN	0	2	1	Design Levels
C-D-STRUCT-ABUT-OUTLINE 1	4	0	3	Design Levels
C-D-STRUCT-ABUT-OUTLINE 2	0	0	1	Design Levels
C-D-STRUCT-ABUT-PEDESTAL	3	0	0	Design Levels
C-D-STRUCT-ABUT-PEDESTAL-CL	3	4	0	Design Levels
C-D-STRUCT-ABUT-WINGWALL-HIDDEN	0	2	1	Design Levels
C-D-STRUCT-ABUT-WINGWALL-OUTLINE 1	4	0	3	Design Levels
C-D-STRUCT-ABUT-WINGWALL-OUTLINE 2	0	0	1	Design Levels
C-D-STRUCT-APP_SLAB-CL	3	4	0	Design Levels
C-D-STRUCT-APP_SLAB-HIDDEN	0	2	1	Design Levels
C-D-STRUCT-APP_SLAB-OUTLINE 1	4	0	3	Design Levels
C-D-STRUCT-APP_SLAB-OUTLINE 2	0	0	1	Design Levels
C-D-STRUCT-APP_SLAB-SHADING	253	0	0	Design Levels
C-D-STRUCT-BARRIER-CL	3	4	0	Design Levels
C-D-STRUCT-BARRIER-OFFSTRUCT-CL	3	4	0	Design Levels
C-D-STRUCT-BARRIER-OFFSTRUCT-FOOTING	3	2	0	Design Levels
C-D-STRUCT-BARRIER-OFFSTRUCT-OUTLINE 1	4	0	3	Design Levels
C-D-STRUCT-BARRIER-OFFSTRUCT-OUTLINE 2	0	0	1	Design Levels
C-D-STRUCT-BARRIER-OUTLINE 1	4	0	3	Design Levels
C-D-STRUCT-BARRIER-OUTLINE 2	0	0	1	Design Levels
C-D-STRUCT-BARRIERS-HIDDEN	0	2	1	Design Levels
C-D-STRUCT-BARRIERS-OFFSTRUCT-HIDDEN	3	2	0	Design Levels
C-D-STRUCT-BARRIERS-OFFSTRUCT-SHADING	253	0	0	Design Levels
C-D-STRUCT-BARRIERS-SHADING	253	0	0	Design Levels
C-D-STRUCT-BEAMS-BEARING PLATE	0	0	1	Design Levels
C-D-STRUCT-BEAMS-CL COG	3	4	0	Design Levels
C-D-STRUCT-BEAMS-CL FLANGE	3	4	0	Design Levels
C-D-STRUCT-BEAMS-CL SOFFIT	3	4	0	Design Levels
C-D-STRUCT-BEAMS-CL SPLICE	3	4	0	Design Levels
C-D-STRUCT-BEAMS-CL TOP	3	4	0	Design Levels
C-D-STRUCT-BEAMS-CL WEB	3	4	0	Design Levels
C-D-STRUCT-BEAMS-HIDDEN	0	2	1	Design Levels
C-D-STRUCT-BEAMS-OUTLINE 1	4	0	3	Design Levels
C-D-STRUCT-BEAMS-OUTLINE 2	0	0	1	Design Levels
C-D-STRUCT-BEAMS-SOFFIT	4	0	3	Design Levels
C-D-STRUCT-BEAMS-TOP FLANGE	4	0	3	Design Levels
C-D-STRUCT-BEAMS-WEB	4	0	3	Design Levels

Level	Colour	Line Style	Line Weight	Description
C-D-STRUCT-BEARINGS-CL 1	3	4	0	Design Levels
C-D-STRUCT-BEARINGS-CL 2	3	4	0	Design Levels
C-D-STRUCT-BEARINGS-HIDDEN	0	2	1	Design Levels
C-D-STRUCT-BEARINGS-OUTLINE 1	4	0	3	Design Levels
C-D-STRUCT-BEARINGS-OUTLINE 2	0	0	1	Design Levels
C-D-STRUCT-CONC-CJ	0	2	1	Design Levels
C-D-STRUCT-CONC-CL	3	4	0	Design Levels
C-D-STRUCT-CONC-HIDDEN	0	2	1	Design Levels
C-D-STRUCT-CONC-OUTLINE 1	4	0	3	Design Levels
C-D-STRUCT-DECK-OUTLINE 1	4	0	3	Design Levels
C-D-STRUCT-DECK-OUTLINE 2	0	0	1	Design Levels
C-D-STRUCT-EJ-CL	3	4	0	Design Levels
C-D-STRUCT-EJ-HIDDEN	0	2	1	Design Levels
C-D-STRUCT-EJ-OUTLINE 1	4	0	3	Design Levels
C-D-STRUCT-EJ-OUTLINE 2	0	0	1	Design Levels
C-D-STRUCT-FIXING-CL	3	4	0	Design Levels
C-D-STRUCT-FIXING-HIDDEN	0	2	1	Design Levels
C-D-STRUCT-FIXING-OUTLINE 1	4	0	3	Design Levels
C-D-STRUCT-FIXING-OUTLINE 2	0	0	1	Design Levels
C-D-STRUCT-GEN-ADJACENTITEMS	0	0	1	Design Levels
C-D-STRUCT-GEN-CONSTRUCTION	3	0	0	Design Levels
C-D-STRUCT-GEN-HATCH 1	3	0	0	Design Levels
C-D-STRUCT-GEN-HATCH 2	3	0	0	Design Levels
C-D-STRUCT-GEN-PATTERN	3	0	0	Design Levels
C-D-STRUCT-GEN-SURFACE-EXISTING	3	2	0	Design Levels
C-D-STRUCT-GEN-SURFACE-FINISHED	4	0	3	Design Levels
C-D-STRUCT-GEN-WORKING 1	3	0	0	Design Levels
C-D-STRUCT-GEN-WORKING 2	3	0	0	Design Levels
C-E-STRUCT-ABUTMENT	29	0	2	Existing Levels
C-E-STRUCT-BARRIER	0	0	2	Existing Levels
C-E-STRUCT-BEAM	2	0	1	Existing Levels
C-E-STRUCT-BLDG-OUTLINE	29	0	2	Existing Levels
C-E-STRUCT-BLDG-ROOF- OVERHANG	29	0	2	Existing Levels
C-E-STRUCT-BRIDGE	29	0	0	Existing Levels
C-E-STRUCT-BRIDGE-DECK	12	0	0	Existing Levels
C-E-STRUCT-BRIDGE-SOFFIT	0	1	1	Existing Levels
C-E-STRUCT-CTRL	0	4	0	Existing Levels
C-E-STRUCT-FOOTBRIDGE	29	0	2	Existing Levels
C-E-STRUCT-FOOTPATH	29	0	1	Existing Levels

Level	Colour	Line Style	Line Weight	Description
C-E-STRUCT-HANDRAIL	0	0	0	Existing Levels
C-E-STRUCT-HATCH	7	0	0	Existing Levels
C-E-STRUCT-MISC	29	0	2	Existing Levels
C-E-STRUCT-PIER	16	0	2	Existing Levels
C-E-STRUCT-PILE	0	0	2	Existing Levels
C-E-STRUCT-PILE-CAP	0	0	2	Existing Levels
C-E-STRUCT-RAMP	29	0	2	Existing Levels
C-E-STRUCT-REO	0	0	2	Existing Levels
C-E-STRUCT-RETAININGWALL	14	0	2	Existing Levels
C-E-STRUCT-SLAB	14	0	2	Existing Levels
C-E-STRUCT-SLAB-FOOTING	14	0	2	Existing Levels
C-E-STRUCT-SOIL-NAIL	0	0	1	Existing Levels
C-E-STRUCT-STAIRS	3	0	1	Existing Levels
C-E-STRUCT-SUBWAY	29	0	2	Existing Levels
C-E-STRUCT-TUNNEL	29	0	2	Existing Levels
C-E-STRUCT-WALL	29	0	2	Existing Levels
C-E-STRUCT-X	0	0	0	Existing Levels
C-E-STRUCT-XX	0	0	0	Existing Levels
C-E-STRUCT-XXX	0	0	0	Existing Levels
C-E-STRUCT-XXXX	0	0	0	Existing Levels
C-E-STRUCT-XXXXX	0	0	0	Existing Levels

Appendix Q5 – Telecommunications Layers

Layer	Colour	Line Type	Block Name/Entity	Description
0	7	Continuous		General - Plan Drawings
Defpoints/NPLT	7	Continuous		General - Plan Drawings
L-Cable-Hut	20	Continuous		General - Plan Drawings
L-Cable-Pit	7	Continuous	Cable Pit	General - Plan Drawings
L-Cable-Data_Cu	7	Continuous	Polyline	General - Plan Drawings
L-Cable-Data_FO	7	L-Cable-FO_Data	Polyline	General - Plan Drawings
L- Conduit	7	L-Cable-FO_Data	Polyline	General - Plan Drawings
L-Property-Reserve	31	Divide2	Polyline	General - Plan Drawings
L-Survey-Boundary-Title	141	Continuous	Polyline	General - Plan Drawings
X-North Arrow	7	Continuous	North Arrow	General - Plan Drawings
X-Panel	7	Continuous		General - Plan Drawings
X-PTV Disclaimer	7	Continuous		General - Plan Drawings
X-PTV Logo	77	Continuous		General - Plan Drawings
X-Sheet-Outline	7	Acad_ISO2W100	Map_Sheet_Outline	General - Plan Drawings
X-Sheet-Outline- Frame_2000	5	Dashed	Polyline	General - Plan Drawings
X-Sheet-Text-25_0001	1	Continuous	Multiline text	General - Plan Drawings
X-Sheet-Text-50_0001	7	Continuous	Multiline text	General - Plan Drawings
X-Tblock-Line-25	7	Continuous		General - Plan Drawings
X-Tblock-Text-25_0001	7	Continuous	Multiline text	General - Plan Drawings
X-Tblock-Text-35_0001	7	Continuous	Multiline text	General - Plan Drawings
X-Tblock-Text-50_0001	3	Continuous	Multiline text	General - Plan Drawings
X-Titleblock	7	Continuous	Titleblock	General - Plan Drawings
X-Titleblock Text	7	Continuous	Multiline text	General - Plan Drawings
X-XREF Layer	252	Continuous	Xref information	General - Plan Drawings
L-Cable-Trays	1	Continuous	Cable Tray MLines	General - Plan Drawings
L-Circuit-General	2	Continuous	Lines	General - Plan Drawings
L-Racks	2	Continuous	Comms Rack	General - Plan Drawings
L-Text	7	Continuous	Multiline text	General - Plan Drawings
L-Security-Device	3	Continuous	Reed switch, Sec-panel, Motion sensor, Duress button,	General - Plan Drawings
			Cameras, Break glass switch, Sec-Workstation,	General - Plan Drawings
L-Equipment	1	Continuous	Junction Box, Distributors, clocks, WAP, Decoder Summary Board, Platform Display, Field Switch, Platform Entry	General - Plan Drawings

Layer	Colour	Line Type	Block Name/Entity	Description
			Display, Computer, UPS, Customer Help points	
L-Power-Outlets	3	Continuous	Power Outlets	General - Plan Drawings
L-Power Equipment	3	Continuous	DB's	General - Plan Drawings
L-Conduct	30	VT-TELCO-CONDUIT-P050B	Polyline/Line with Text	VT Comms - Plan Drawings
L-Conduct	30	VT-TELCO-CONDUIT-P100B	Polyline/Line with Text	VT Comms - Plan Drawings
L-Cable	10	L-FO-Cable-CS_Asbestos Conduit	Polyline/Line with Text	VT Comms - Plan Drawings
L- Trench	10	VT-TELCO-CONDUIT-P050T	Polyline/Line with Text	VT Comms - Plan Drawings
L- Trench	10	VT-TELCO-CONDUIT-P100T	Polyline/Line with Text	VT Comms - Plan Drawings
L- Trunking	5	VT-TELCO-TRUNKING-150	Polyline/Line with Text	VT Comms - Plan Drawings
L- Trunking	5	VT-TELCO-TRUNKING-250	Polyline /Line with Text	VT Comms - Plan Drawings
L- Trunking	5	VT-TELCO-TRUNKING-350	Polyline /Line with Text	VT Comms - Plan Drawings
L- Trunking	5	VT-TELCO-TRUNKING-SF-150	Polyline/Line with Text	VT Comms - Plan Drawings
L- Trunking	5	VT-TELCO-TRUNKING-SF-250	Polyline/Line with Text	VT Comms - Plan Drawings
L- Trunking	5	VT-TELCO-TRUNKING-SF-350	Polyline /Line with Text	VT Comms - Plan Drawings
L-Cable_Overhead	3	VT-TELCO-OH	Polyline /Line with Text	VT Comms - Plan Drawings
L-Cable	6	VT-TELCO-PIPE-GALV-50	Polyline/Line with Text	VT Comms - Plan Drawings
L-Cable	6	VT-TELCO-PIPE-GALV-100	Polyline/Line with Text	VT Comms - Plan Drawings
L _Duct	150	VT-Telstra-Duct	Polyline/Line with Text	VT Comms - Plan Drawings
L-Track-Rail	1	Continuous	Polyline/Line with Text	VT Comms - Plan Drawings
L-Track-Tram	11	Continuous	Polyline/Line with Text	VT Comms - Plan Drawings
L-Survey-Embankment	66	Continuous	Polyline	VT Comms - Plan Drawings
L-Survey-Km_Post	7	Continuous		VT Comms - Plan Drawings
L-Survey-Km_Post-Point	9	Continuous	LN-Track-KM-Label	VT Comms - Plan Drawings
L-Cable-Existing-Conduit- Buffer	1	DashDot		VT Comms - Plan Drawings

Layer	Colour	Line Type	Block Name/Entity	Description
L-Cable-Existing-Trunking- Buffer	30	Phantom		VT Comms - Plan Drawings
L-Cable-New-Conduit-Buffer	200	BorderX2		VT Comms - Plan Drawings
L-Cable-New-GI-Pipe-Buffer	5	DashedX2		VT Comms - Plan Drawings
L-Cable-New-Trunking-Buffer	37	PhantomX2		VT Comms - Plan Drawings
L-Cable-Waypoints	9	Continuous		VT Comms - Plan Drawings
L-VIC Track Comms	2	VT-Tele-VIC Track	Polyline	VT Comms - Plan Drawings
L-Data-Outlet	3	Continuous	Data Outlets	Ticketing Systems - Plan Drawings
L-Power-Outlet	3	Continuous	Power Outlets	Telecommunications - Schematic Drawings
L -Equipment	3	Continuous	Speakers, Microphone Outlet, Amplifier	Telecommunications - Schematic Drawings
L-Fire-Detr-Bel-Cel	3	Continuous	Smoke Detector	Telecommunications - Schematic Drawings
L-Fire-Detr-Concealed	3	Continuous	Concealed Smoke Detector	Telecommunications - Schematic Drawings
L-Equipment	1	Continuous	Access Panel	Telecommunications - Schematic Drawings
L-Hearing Loop	1	Phantom	Polyline	Telecommunications - Schematic Drawings
L-Telstra-Services -UG	2	VT-Tele-Telstra-UG	Polyline	Telecommunications - Schematic Drawings
L-Telstra-Services -AG	2	VT-Tele-Telstra-CL	Polyline	Telecommunications - Schematic Drawings
L-Ticketing-Conduit	2	Vt-Tele-Ticketing	Polyline	Telecommunications - Schematic Drawings
L-Schematic-Stm -1	2	Vt-Telco-Smt-1	Lines	Telecommunications - Schematic Drawings
L-Schematic-Stm-1 Decommissioned	2	Vt-Telco-Smt-1d	Lines	Telecommunications - Schematic Drawings
L-Schematic-Stm-1 Future	2	Vt-Telco-Smt-1f	Lines	Telecommunications - Schematic Drawings
L-Schematic-Stm -4	2	Vt-Telco-Smt-4	Lines	Telecommunications - Schematic Drawings
L-Schematic-Stm-4 Decommissioned	2	Vt-Telco-Smt-4d	Lines	Telecommunications - Schematic Drawings
L-Schematic-Stm-4 Future	2	Vt-Telco-Smt-4f	Lines	Telecommunications - Schematic Drawings
L-Schematic-Stm -16	2	Vt-Telco-Smt-16	Lines	Telecommunications - Schematic Drawings
L-Schematic-Stm-16 Decommissioned	2	Vt-Telco-Smt-16d	Lines	Telecommunications - Schematic Drawings

Layer	Colour	Line Type	Block Name/Entity	Description
L-Schematic-Stm-16 Future	2	Vt-Telco-Smt-16f	Lines	Telecommunications - Schematic Drawings
L-Schematic-Eth1	2	Vt-Telco-Eth1	Lines	Telecommunications - Schematic Drawings
L-Schematic-Eth2	2	Vt-Telco-Eth2	Lines	Telecommunications - Schematic Drawings
L-Schematic-Eth3	2	Vt-Telco-Eth3	Lines	Telecommunications - Schematic Drawings
L-Schematic-Eth4	2	Vt-Telco-Eth4	Lines	Telecommunications - Schematic Drawings
L-Racks	2	Continuous	Comms Rack	Telecommunications - Schematic Drawings
L-Sch-Cable-Types	1	Continuous	Optical Fiber, Cat, Twinax	Telecommunications - Schematic Drawings
L-Sch-Enclosure	1	Phantom	Polyline	Telecommunications - Schematic Drawings
L-Shem-Switchgear	3	Continuous	Fuse, Cb, Convertors, Ups, Switches	Telecommunications - Schematic Drawings

Appendix Q6 – Train Electrical Network Levels

Level	Colour	Line Style	Line Weight	Description
E-EXISTING OHW	0	0	1	Train Overheads
E-NEW TRACK	0	0	1	Train Overheads
E-NEW STRUCTURES	0	0	1	Train Overheads
E-MAST CO-ORDINATES	0	0	1	Train Overheads
E-NEW OHW WIRING	0	0	1	Train Overheads
E-STAGGER	0	0	1	Train Overheads
E-TRACK VERSINE	0	0	1	Train Overheads
E-TRACK RADIUS	0	0	1	Train Overheads
E-WIRE TABLES	0	0	1	Train Overheads
E-NOTES	0	0	1	Train Overheads
E-ELECTROLYSIS	0	0	1	Train Overheads
E-FITTINGS	0	0	1	Train Overheads
E-FEEDER/22/1500	0	0	1	Train Overheads
E-DATABOXES	0	0	1	Train Overheads
E-TEXTDB	0	0	1	Train Overheads
E-TEXTOHW	0	0	1	Train Overheads
E-TEXTNOTES	0	0	1	Train Overheads
E-BUILDING	0	0	1	Train Traction Substations
E-TEXT	0	0	1	Train Traction Substations
E-EARTHING	0	0	1	Train Traction Substations
E-CONDUITS	0	0	1	Train Traction Substations
E-CABLES	0	0	1	Train Traction Substations
E-EQUIPMENT	0	0	1	Train Traction Substations
E-CABLE TRAYS	0	0	1	Train Traction Substations
E-DIMENSIONS	0	0	1	Train Traction Substations
E-LIGHT	0	0	1	Train Traction Substations
E-POWER	0	0	1	Train Traction Substations
E-STRUCTURAL	0	0	1	Train Traction Substations
E-REV CLOUD	0	0	1	Train Traction Substations
E-BUILDING	0	0	1	Train Industrial Networks
E-TEXT	0	0	1	Train Industrial Networks
E-EARTHING	0	0	1	Train Industrial Networks
E-CONDUITS	0	0	1	Train Industrial Networks
E-CABLES	0	0	1	Train Industrial Networks
E-EQUIPMENT	0	0	1	Train Industrial Networks
E-CABLE TRAYS	0	0	1	Train Industrial Networks

Level	Colour	Line Style	Line Weight	Description
E-DIMENSIONS	0	0	1	Train Industrial Networks
E-LIGHT	0	0	1	Train Industrial Networks
E-POWER	0	0	1	Train Industrial Networks
E-STRUCTURAL	0	0	1	Train Industrial Networks
E-REV CLOUD	0	0	1	Train Industrial Networks
E-LINES/SWITCHING	0	3	1	Train System Diagrams
E-TEXT	0	0	1	Train System Diagrams
E-REVISION NOTES	0	0	1	Train System Diagrams

Appendix Q7 – Architectural Layers

Layer	Colour	Line Style	Description
A-A-ANNO-DIMS	8 (Grey)	Continuous	Dimensions
A-A-ANNO-GEN	8 (Grey)	Continuous	General annotation
A-A-ANNO-GRID	8 (Grey)	Grid Line	Grid
A-A-ANNO-LEVEL	8 (Grey)	Grid Line	Level
A-A-ANNO-NPLT	250	Dash 3mm	Annotation No Plot Ref Planes
A-A-ANNO-REVS	1 (Red)	Continuous	Annotation Rev Clouds & Tags
A-A-ANNO-SYMB	8 (Grey)	Continuous	Section, Elevations etc. Symbols
A-A-ANNO-TEXT	8 (Grey)	Continuous	MText
A-A-ANNO-TTLB	8 (Grey)	Continuous	Annotation Titleblock
A-A-ANNO-TAG	8 (Grey)	Continuous	General Annotation Tag
A-P-ANNO-TAG	8 (Grey)	Continuous	Plumbing Tag
A-A-AREA-TAG	8 (Grey)	Continuous	Area & Room Tags
A-A-CASEWORK-TAG	8 (Grey)	Continuous	Casework Tag
A-A-CLNG-TAG	8 (Grey)	Continuous	Ceiling Tag
A-A-CWPANEL-TAG	8 (Grey)	Continuous	Curtain Wall Tag
A-A-DOOR-TAG	8 (Grey)	Continuous	Door Tag
A-A-FLOOR-TAG	8 (Grey)	Continuous	Floor Tag
A-I-FURN-TAG	8 (Grey)	Continuous	Furniture Tag
A-A-GEN-TAG	8 (Grey)	Continuous	Generic Tag
A-E-LIGHT-TAG	8 (Grey)	Continuous	Electrical Lighting Tag
A-M-EQPT-TAG	8 (Grey)	Continuous	Mechanical Equipment Tag
A-A-MAT-TAG	8 (Grey)	Continuous	Materials Tag
A-A-RAMPS-TAG	8 (Grey)	Continuous	Ramp Tag
A-A-RAMPS-TEXT	8 (Grey)	Continuous	Ramp Text
A-A-HDRAIL-TAGS	8 (Grey)	Continuous	Railings Tag
A-A-ROOF-TAG	8 (Grey)	Continuous	Roof Tag
A-A-STAIR-TAG	8 (Grey)	Continuous	Stair Tag
A-A-STAIR-TEXT	8 (Grey)	Continuous	Stair Text
A-A-WALL-TAG	8 (Grey)	Continuous	Wall Tag
A-A-WIND-TAG	8 (Grey)	Continuous	Window Tag
A-S-BEAM-TAG	8 (Grey)	Continuous	Arch Structural Beam Tag
A-S-COLS-TAG	8 (Grey)	Continuous	Arch Structural Column Tag
A-A-AREA-BDRY	1 (Red)	Continuous	Area Boundary
A-A-CASEWORK	1 (Red)	Continuous	Joinery
A-A-CLNG	1 (Red)	Continuous	Ceiling
A-A-CLNG-PAT	250	Continuous	Ceiling Pattern/Hatch

Layer	Colour	Line Style	Description
A-A-CWFRAME	7 (White)	Continuous	Curtain Wall Frame
A-A-CWPANEL	1 (Red)	Continuous	Curtain Wall Panel
A-A-DETAIL	1 (Red)	Continuous	Detail Line
A-A-DETAIL-BEYD	1 (Red)	Continuous	Detail Line-Beyond
A-A-DETAIL-GEN	1 (Red)	Continuous	Detail Line-Generic
A-A-DETAIL-HID	1 (Red)	Hidden	Detail Line-Hidden
A-A-DETAIL-OVHD	1 (Red)	Overhead	Detail Line-Overhead
A-A-DETAIL-INSL	8 (Grey)	Continuous	Detail Line-Insulation
A-A-DETAIL-LLIN	1 (Red)	Continuous	Detail Line-Thin/Light
A-A-DETAIL-MLIN	7 (White)	Continuous	Detail Line-Medium
A-A-DETAIL-HLIN	2 (Yellow)	Continuous	Detail Line-Heavy
A-A-DOOR	1 (Red)	Continuous	Door
A-A-DOOR-FRAM	2 (Yellow)	Continuous	Door Frame
A-A-DOOR-GL	1 (Red)	Continuous	Door Glazing
A-A-EQPM	1 (Red)	Continuous	Architectural Equipment
A-A-FLOOR	2 (Yellow)	Continuous	Floor
A-A-FLOOR-PAT	250	Continuous	Floor Pattern/Hatch
A-A-GEN-MOD	1 (Red)	Continuous	Generic Model/Block
A-A-HDRAIL	7 (White)	Continuous	Handrail
A-A-RAMPS	7 (White)	Continuous	Ramp
A-A-ROOFS	2 (Yellow)	Continuous	Roofs
A-A-ROOF-PAT	250	Continuous	Roof Patterns/Hatch
A-A-STAIRS	7 (White)	Continuous	Stair
A-A-WALL	2 (Yellow)	Continuous	Wall Framing
A-A-WALL-PAT	250	Continuous	Wall Pattern/Hatch
A-A-INT-WALL	8 (Grey)	Continuous	Wall Lining Interior
A-A-EXT-WALL	8 (Grey)	Continuous	Wall Lining Exterior
A-A-WIND	8 (Grey)	Continuous	Window
A-A-WIND-FRAM	8 (Grey)	Continuous	Window Frame
A-A-WIND-GL	8 (Grey)	Continuous	Window Glazing
A-A-WIND-SILL	8 (Grey)	Continuous	Window Sill / Head
A-E-EQPM	1 (Red)	Continuous	Arch Electrical Equipment
A-E-LIGHT-FIX	1 (Red)	Continuous	Arch Electrical Light Fixture
A-I-FURN	1 (Red)	Continuous	Arch Interior Furniture
A-L-PLANT	1 (Red)	Continuous	Arch Landscape Planting
A-L-SITE	1 (Red)	Continuous	Arch Landscape Site
A-C-ROAD	1 (Red)	Continuous	Arch Civil Roads
A-P-PLUM-FIX	1 (Red)	Continuous	Arch Plumbing Fixture

Layer	Colour	Line Style	Description
A-S-BEAM-FRAMING	7 (White)	Continuous	Arch Structure Beams & Framing
A-S-COLUMNS	7 (White)	Continuous	Arch Structure Columns
A-S-FNDN	1 (Red)	Continuous	Arch Structure Foundations

Appendix Q8 – Building Services Layers

Layer	Colour	Line Type	Description / Entity Type
X-North Arrow	7	Continuous	North Arrow
X-Panel	7	Continuous	
X-Sheet-Outline	7	Acad_ISO2W100	LN-Map_Sheet_Outline
X-Sheet-Outline-Frame_2000	5	Dashed	Polyline
X-Sheet-Text-25_0001	1	Continuous	Multiline text
X-Sheet-Text-50_0001	7	Continuous	Multiline text
X-Tblock-Line-25	7	Continuous	
X-Tblock-Text-25_0001	7	Continuous	Multiline text
X-Tblock-Text-35_0001	7	Continuous	Multiline text
X-Tblock-Text-50_0001	3	Continuous	Multiline text
X-Titleblock	7	Continuous	Titleblock
X-Titleblock Text	7	Continuous	Multiline text
X-VicTrack Disclaimer	7	Continuous	
X-VicTrack Logo	7	Continuous	
X-XREF Layer	252	Continuous	Xref information
B-E-Cabletray	8	Continuous	Multiline
B-E- Cabletray	8	Continuous	Multiline
B-E-Cabletray-Existing	1	VT_S-B-Existing	Multiline
B-E-Comms-Equipment	3	Continuous	Communication Blocks
B-E-Comms-Intercom	3	Continuous	Communication Blocks
B-E-Comms-Nursecall	3	Continuous	Nurse Call Blocks
B-E-Comms-Outlet	3	Continuous	Communication Blocks
B-E-Conduit	7	Continuous	Line or Polyline
B-E-Equipment	3	Continuous	General Blocks
B-E-Ewis	3	Continuous	EWIS Blocks
B-E-Ewis-PA	3	Continuous	EWIS Blocks
B-E-Existing	7	VT_S-B-Existing	Lines, Polylines or Blocks
B-E-Fan	3	Continuous	General Blocks
B-E-Light-Circuit *	3	Continuous	Lines, Polylines, Arcs and Blocks *After exporting this layer needs manually changed.
B-E-Light-Deleted	7	VT_S-B-Existing	Deleted Block
B-E-Light-Emergency	3	Continuous	Emergency Lighting Blocks
B-E-Light-New	3	Continuous	New Lighting Blocks
B-E-Light-Switch	3	Continuous	Light Switch Block
B-E-Light-SWWire*	2	VT_S-B-Switchwire	Line or Arc
B-E-Lightning	3	Continuous	Lightning Protection Blocks

Layer	Colour	Line Type	Description / Entity Type
B-E-Matv	3	Continuous	MATV Blocks
B-E-Medical	3	Continuous	Medical Electrical Blocks
B-E-Power-Circuit*	3	Continuous	Line or Arc
B-E-Power-Equipment	3	Continuous	Power Blocks
B-E-Power-Outlet	3	Continuous	Power Blocks
B-E-Schem-Cable	3	Continuous	Schematic Lines
B-E-Schem-CtrlCable	2	CW_S-B-SWITCHWIRE	Schematic Lines
B-E-Schem-Enclosure	1	CW_S-B-ENCLOSURE	Schematic Lines
B-E-Schem-Phases	7	Continuous	Schematic Blocks
B-E-Schem-Switchgear	3	Continuous	Schematic Blocks
B-E-Security-Device	3	Continuous	Security Blocks
B-E-Duct-Service	1	VT_S-B-Skirting	Polyline
Text	7	Continuous	MText, Leader
B-E-Zone	252	VT_S-B-Building	DB Zone Polyline and Block
B-F-Aspiration	3	Continuous	Aspirated Detection Block, Line Or Polyline
B-F-Cable	3	Continuous	Line, Polyline Or Arc
B-F-Conduit	7	Vt_S-B-Conduit	Line Or Polyline
B-F-Deleted	7	Vt_S-B-Existing	Equipment No Longer Required
B-F-Detr-Bel-Cel	3	Continuous	Below Ceiling Smoke Detector, Smoke Alarm, Heat Detector, Beam Type Detector, Heat Alarm Blocks
B-F-Detr-Concealed	3	Continuous	Concealed Smoke Detector, Smoke Alarm, Heat Detector, Beam Type Detector, Heat Alarm Blocks
B-F-Enclosure	7	Vt_S-B-Enclosure	Line Or Polyline
B-F-Equipment	3	Continuous	Fire Panel Blocks
B-F-Ewis	3	Continuous	Ewis Blocks
B-F-Existing	7	Vt_S-B-Existing	Existing Fire Services To Remain, Blocks, Lines Or Polylines
B-F-Extinguisher	3	Continuous	Fire Extinguisher Blocks
B-F-Gas-Equipment	3	Continuous	Gas Suppression Blocks
B-F -Pipe-Gas	7	Continuous	Gas Suppression Lines Or Polylines
B-F-New	3	Continuous	New Equipment, Lines Or Polylines
B-F-Pipe	3	Continuous	Lines
B-F-Pipe-Existing	2	Vt_S-B-Existing	Lines
B-F-Pipe-Existing-Deleted	7	Vt_S-B-Removed	Lines
B-F-Sprinklers	3	Continuous	Below Ceiling Sprinkler And, Exposed Sprinkler Blocks
B-H-Chamber-Vent	7	Vt_S-B-Chv	Lines Or Polyline

Layer	Colour	Line Type	Description / Entity Type
B-H-Pipe-Coldwater	3	Vt_S-B-Coldw	Lines Or Polyline
B-H- Pipe-Coldwater-Rsm	7	Vt_S-B-Vtrm	Lines Or Polyline
B-H- Pipe-Coldwater-Drain	7	Vt_S-B-Cd	Lines Or Polyline
B-H- Pipe-Drain	2	Continuous	Lines Or Polyline
B-H-Equipment	2	Continuous	Blocks
B-H- Pipe-Filtered-Water	7	Vt_S-B-Fw	Lines Or Polyline
B-H- Pipe-Fire-Hosereel	3	Vt_S-B-Firehose	Lines Or Polyline
B-H-Fire-Hydrant	7	Vt_S-B-Actewfirser	Lines Or Polyline
B-H- Pipe-Gas	7	Vt_S-B-Actewgasser	Lines Or Polyline
B-H- Pipe-Grease-Pumpout	7	Vt_S-B-Gpo	Lines Or Polyline
B-H- Pipe-Grease-Waste	7	Vt_S-B-Gw	Lines Or Polyline
B-H- Pipe-Grease-Waste-Vent	7	Vt_S-B-Gwv	Lines Or Polyline
B-H- Pipe-Hotwater	3	Vt_S-B-Hotw	Lines Or Polyline
B-H- Pipe-Hotwater-Return	3	Vt_S-B-Hotwret	Lines Or Polyline
B-H- Pipe-Irrigation-Water	7	Vt_S-B-Iw	Lines Or Polyline
B-H- Pipe-Overflow	7	Vt_S-B-Overflow	Lines Or Polyline
B-H-Pipe-Existing	1	Vt_S-B-Ex-Warmw	Lines Or Polyline
B-H-Pipe-Deleted	1	Vt_S-B-Ex-Fhr-Tbr	Lines Or Polyline
B-H-Pit	2	Continuous	Blocks
B-H- Pipe-Recycled-Water	7	Vt_S-B-Rw	Lines Or Polyline
B-H- Pipe-Ref-Symbol	3	Continuous	Blocks
B-H- Pipe-Rising-Main	7	Vt_S-B-Rm	Lines Or Polyline
B-H- Pipe-Sewer-Drainage	3	Vt_S-B-Sprink	Lines Or Polyline
B-H- Pipe-Sewer-Rsm	7	Vt_S-B-Srm	Lines Or Polyline
B-H- Pipe-Soft-Coldwater	7	Vt_S-B-Scoldw	Lines Or Polyline
B-H- Pipe-Stormwater-Drainage	5	Vt_S-B-Stormw	Lines Or Polyline
B-H- Pipe-Stormwater-Rsm	7	Vt_S-B-Swrm	Lines Or Polyline
B-H- Pipe-Subsoil-Drainage	7	Vt_S-B-Subsoil	Lines Or Polyline
B-H- Pipe-Tempered-Water	7	Vt_S-B-Tpw	Lines Or Polyline
Text	7	Continuous	Mtext
B-H-Trade-Waste	7	Vt_S-B-Tw	Lines Or Polyline
B-H-Trade-Waste-Vent	7	Vt_S-B-Twv	Lines Or Polyline
B-H-Valve-Equipment	2	Continuous	Blocks
B-H-Vent-Pipe	3	Continuous	Lines Or Polyline
B-H-Warmwater	7	Vt_S-B-Warmw	Lines Or Polyline
B-H-Water-Reclaimation	7	Vt_S-B-Wrams	Lines Or Polyline
B-H_Swd7st	5	Vt_S-B-Stormw	Blocks
B-H_Sym1co	1	Continuous	Blocks

Layer	Colour	Line Type	Description / Entity Type
B-H_Sym3co	2	Continuous	Blocks
B-H_Sym5co	3	Continuous	Blocks
B-H_Txt3co	2	Continuous	Blocks
B-M-Existing-Deleted	7	Cw_S-B-Redundant	Demolish Lines
B-M-Existing	2	Continuous	Existing Lines
B-M-Access-Panel	1	Continuous	Access Panel Blocks
B-M-Ctrl	2	Continuous	Lines And Blocks
B-M-Ctrl-Sb	3	Continuous	Switchboard Blocks
B-M-Ctrl-Vsd	7	Continuous	Sensor Blocks
B-M-Damp-Md	7	Continuous	Vsd Blocks
B-M-Draingage-Fw	1	Continuous	Damper Blocks
B-M-Drainage-Td	1	Continuous	Blocks And Lines
B-M-Duct-Supply Air	3	Continuous	Lines
B-M-Duct-Return Air	3	Continuous	Lines
B-M-Duct-Exhaust Air	3	Continuous	Lines
	2	Continuous	Blocks
	7	Continuous	Lines
	7	Continuous	Duct Heater Lines
	1	Continuous	Blocks
	2	Continuous	Hatch Pattern
	2	Hidden2	Lines
	1	Center4	Lines Or Blocks
	7	Continuous	Lines
B-M-Fan	3	Continuous	Blocks
B-M-Flex	2	Center4	Lines Or Blocks
B-M-Flow-Ra	7	Continuous	Blocks
B-M-Flow-Sa	7	Continuous	Blocks
B-M-Grill	2	Continuous	Blocks
B-M-Notation	7	Continuous	Mtext
B-M-Pipe-Cd	2	Cw_S-Cd	Lines Or Polyline
B-M-Pipe-Cdw	2	Cw_S-Cdw	Lines Or Polyline
B-M-Pipe-Chw	4	Cw_S-Chw	Lines Or Polyline
B-M-Pipe-Hhw	3	Cw_S-Hhw	Lines Or Polyline
B-M-Pipe-Ref	2	Cw_S-Ref	Lines Or Polyline
B-M-Pipscheb-M-Equipment	2	Continuous	Blocks
B-M-Sandwich	2	Hidden	Lines Or Polyline
B-M-Sensor-Equipment	2	Continuous	Blocks
Text	7	Continuous	Mtext, Leader
B-M-Valve-Equipment	2	Continuous	Blocks, Lines Or Polyline

Layer	Colour	Line Type	Description / Entity Type
B-M-Vanes	7	Continuous	Lines Or Arc
B-M-Pipenval3co	2	Continuous	Blocks
B-M-Schmn__2co	7	Continuous	Blocks
B-M-Schmn__3co	2	Continuous	Blocks
B-M-Schmn__5co	4	Continuous	Blocks

Appendix Q9 – Structural Layers

Layer	Colour	Line Type	Description / Remarks
0	0.12/White	Continuous	AutoCAD layer All xref's shall be attached to this layer
Defpoints	0.12/White	Continuous	AutoCAD layer All viewports shall be drawn on this layer
S-BEAM	0.25/Cyan	Continuous	Steel beams, fly bracing Beams under should be shown dashed & labelled below/under. Timber beams on plan Steel bracing (horizontal & vertical/wall) Change vertical/wall bracing linework to suit drawing manual requirements Concrete beams / girders
S-COL	0.25/Green	Continuous	Concrete column outlines
S-COL-HIDDEN	0.25/Red	Continuous	Column outlines shall be changed to hidden2 when column/floor xref is shown under
S-DETL	0.05/Grey	Continuous	Concrete column hatch Layer shall be turned ON/THAW when xref is shown under. Turned OFF/FREEZE when shown over.
S-DETL-GLAZ	0.12/White	Continuous	Structural glass sections and details Sections and details shall be drawn on this layer by entity to suit drawing manual requirements.
S-BARR-CONC	0.25/Green	Continuous	Concrete barriers / parapets
S-ABUT-CONC	0.25/Green	Continuous	Abutment concrete
S-PIER-CONC	0.25/Green	Continuous	Pier concrete
S-APPS-CONC	0.25/Green	Continuous	Approach slab concrete
S-BRNG-ELAS	0.25/Green	Continuous	Elastomeric bearings
S-COLS	0.18/Cyan	Continuous	Steel columns on plan
S-COLS-HIDN	0.25/Green	Hidden2	Concrete column outlines under
S-EXTG-DMLS	0.05/Grey	Dashed	Existing to be demolished
S-EXTG-OTLN	0.09/Red	Continuous	Existing outlines on plan
S-FOOT-OTLN	0.35/Cyan	Continuous	Footing outlines on plan
S-FOOT-UNDR	0.18/ White	Hidden	Footing outlines under
S-GLAZ-OTLN	0.12/White	Continuous	Structural glass outlines on plan
S-DETL	0.05/Grey	Continuous	For general hatching
S-GRID	0.05/Grey	Centre	Grid lines, bubbles & text
S-TEXT	0.12/White	Continuous	General text
S-DIMS	0.12/White	Continuous	General dimensioning
S-BEAM	0.25/Green	Continuous	Timber joists on plan
S-MSN-HATC	0.09/Red	Continuous	Masonry wall hatch for wall over
S-WALL	0.12/White	Continuous	Masonry wall outlines on plan Masonry outlines shall be changed to dashed when wall is shown under
S-DETL	0.09/Red	Continuous	Masonry wall hatch for wall under

Layer	Colour	Line Type	Description / Remarks
S-FNDN-FTNG	0.18/Green	Hidden2	Pile outlines on plan When piles are not hidden change linetype to continuous
S-PLAN-TEXT	0.12/White	Continuous	Text & dimensions on plan
S-DETL	0.12/White	Continuous	Crossing lines to represent penetration & setdown location/extent
S-BEAM	0.12/White	Continuous	Steel purlins on plan
S-REIN-BOT	0.35/Cyan	Continuous	Bottom reinforcement All bottom reinforcement lines, text, etc. to be drawn on this layer. Bars shall be shown dashed if combined with top reinforcement
S-DETL	0.35/White	Continuous	Post-tensioning Column and middle strip lines for reinforcement setout on suspended slabs All Post-tensioning text tags, ducts, live & dead ends, etc. to be drawn on this layer Top reinforcement All top reinforcement lines, text, etc. to be drawn on this layer.
S-BEAM	0.25/Green	Continuous	Timber rafters on plan
S-DETL	0.09/Red	Continuous	Roof outlines, gutters, penetration, etc. on plan
S-SITE-OTLN	0.09/Red	Phantom	Site boundary outline on plan
S-GENM	0.18/Yellow	Divide	Joint linework on plan Joint type shall be labelled on plan with a tag i.e. KJ
S-SLAB-OTLN	0.25/Green	Continuous	Floor slab perimeter & penetration outlines on plan
S-STAIR	0.18/Red	Continuous	Stairs
S-RAMP	0.18/Yellow	Continuous	Ramps
S-SLAB-SFFT	0.18/Yellow	Hidden	Floor slab soffit linework
S-SHRG-OTLN	0.18/Yellow	Continuous	Shoring/retention linework on plan
S-STRS-PLAN	0.12/White	Continuous	Stairs on plan
S-TRUS	0.35/Cyan	Centre	Steel trusses on plan
S-TRUS	0.25/Green	Divide	Timber trusses on plan
S-WALL	0.05/Grey	Continuous	Concrete wall hatch
S-WALL	0.25/Green	Continuous	Concrete wall outlines on plan, to be changed to hidden when wall / floor xref is shown under

Appendix Q10 – Tram Infrastructure Levels

Name	Colour	Line Style	Line Weight	Description
T-Autopoints-Conduit	0	0	0	Tram Autopoints Conduits
T-Autopoints-Loop	0	0	0	Tram Autopoints Detector Loop
T-Autopoints- Metal_Detection	0	0	0	Tram Autopoints Metal Detection
T-Bonding	0	0	0	Tram Track Bonding
T-Conduits-Feeder	3	3	2	Tram Feeder Conduits
T-Conduits-Feeder- Detail	0	3	2	Tram Feeder Conduits Details
T-Conduits-Pit	3	0	3	Tram Feeder Conduits Pit
T-Drainage-AG	0	0	0	Tram Drainage Pipe Above Ground
T-Drainage-Pit	10	0	0	Tram Drainage Pit
T-Drainage-Strip	0	0	0	Tram Strip Drain
T-Drainage- SubSurface	10	0	0	Tram Sub Surface Drainage
T-Drainage-UG	10	(115b)	0	Tram Drainage Pipe Under Ground
T-Fence	0	0	0	Tram Fencing
T-Handrail	0	0	2	Tram Handrail
T-Misc-Batik	0	0	0	Tram Batter ticks
T-Misc-Bollars	0	0	0	Tram Bollards
T-Misc-Centres	0	0	0	Tram Hole centre
T-Misc-Coord	0	0	0	Tram Coordinates
T-Misc-Diagram- BendingCell	0	0	0	Tram diagram design rail bending cell
T-Misc-Diagram- BendingLine	0	0	1	Tram diagram design bending line
T-Misc-Diagram- BendingText	0	0	1	Tram diagram design bending text
T-Misc-Diagram- XingCell	0	0	0	Tram diagram design crossing cell
T-Misc-Diagram- XingLine	0	0	1	Tram diagram design crossing cell
T-Misc-Diagram- XingText	0	0	0	Tram diagram design crossing text
T-Misc-Dims	0	0	0	Tram Dimensions
T-Misc-Dims-2	0	0	0	Tram Dimensions 2
T-Misc-Dims-3	0	0	0	Tram Dimensions 3
T-Misc-Elevation	0	0	0	Tram Elevation
T-Misc-Fence	0	0	0	Tram Fence general
T-Misc-Fence_Ref	0	0	0	Tram Reference Border
T-Misc-Grid	7	1	2	Tram Grid Lines
T-Misc-NorthPoint	0	0	1	Tram North point
T-Misc-Pavement	0	0	0	Tram Pavement
T-Misc-Pits	0	0	0	Tram pits general
T-Misc-Revision	7	0	1	Tram drawing revision
T-Misc-Road- Funitures	0	0	0	Tram Road furnitures

Name	Colour	Line Style	Line Weight	Description
T-Misc-Section	0	0	0	Tram section elements
T-Misc-Shelter	0	0	0	Tram shelter
T-Misc-Stamp	3	0	1	Tram stamp text
T-Misc-StreetNames- 100	0	0	1	Tram street name 1:100 text
T-Misc-StreetNames- 1000	0	0	1	Tram street name 1:1000 text
T-Misc-StreetNames- 250	0	0	1	Tram street name 1:250 text
T-Misc-StreetNames- 500	0	0	1	Tram street name 1:500 text
T-Misc-Temp	0	0	0	Tram Temporary elements
T-Misc-Text	0	0	1	Tram Text
T-Misc-WorksLimit	4	0	2	Tram Works Limit
T-OH-BullRing	0	0	2	Tram OH design bullring
T-OH-Coord	0	0	1	Tram OH design co- ordinates
T-OH-Fittings	0	0	0	Tram OH design fittings
T-OH-Forces	0	0	3	Tram OH design forces on pole arrow
T-OH-Forces-Text	0	0	1	Tram OH design text for forces
T-OH-HangerEar	1	0	0	Tram OH design hanger and ear
T-OH-Insulator	5	0	0	Tram OH design insulator
T-OH-Pole	3	0	2	Tram OH design pole
T-OH-Pole- Foundation	0	2	0	Tram OH design pole foundation
T-OH-Pole-Text-100	0	0	1	Tram OH design pole text scale 1:100
T-OH-Pole-Text-1000	0	0	1	Tram OH design pole text scale 1:1000
T-OH-Pole-Text-250	0	0	1	Tram OH design pole text scale 1:250
T-OH-Pole-Text-500	0	0	1	Tram OH design pole text scale 1:500
T-OH-Pole-Type	0	0	0	Tram OH design pole type
T-OH-Span-Cross	4	3	0	Tram OH design span cross
T-OH-Span-Diag	0	0	0	Tram OH design span diagram
T-OH-Span-TextNo	0	0	1	Tram OH design text number
T-OH-Span-Wire	6	0	2	Tram OH design span wire
T-OH-Stagger	4	2	1	Tram OH design stagger
T-OH-Text	0	0	1	Tram OH design text
T-OH-TrolleyWire	3	0	3	Tram OH design trolleywire
T-OH-TW-Ang	0	0	1	Tram OH Trolley Wire Angle
T-Pit-Comm	0	0	0	Tram Communication Pit
T-Pit-Elec	0	0	0	Tram Electrical Pit
T-Platform-Fence	0	0	0	Tram Platform Fence
T-Platform-Furniture	0	0	0	Tram Platform Furniture
T-Platform-Furniture- Footing	0	0	0	Tram Platform Furniture Footing
T-Platform Shelter- Frame	0	0	0	Tram Shelter Frame
T-Platform Shelter- Myki	0	0	0	Tram Shelter Myki

Name	Colour	Line Style	Line Weight	Description
T-Platform Shelter- Seat	0	0	0	Tram Shelter seat
T-Platform-Mirror	0	0	0	Tram Platform Mirror
T-Platform-Shelter- Footing	0	0	0	Tram Shelter Footing
T-Platform-Shelter- Footing Base	0	0	0	Tram Shelter Footing Base
T-Swept-L	53	3	1	Tram swept path design L
T-Swept-CL	64	6	0	Tram swept path design centre line
T-Swept-Dims	0	0	0	Tram swept path design dimensions
T-Swept-L200	53	0	5	Tram swept path design L200
T-Swept-LineMarking	0	0	3	Tram swept path design linemarking
T-Swept-Max	2	0	0	Tram swept path design max
T-Swept-Points	0	0	10	Tram swept path design points
T-Swept-R	45	3	1	Tram swept path design r
T-Swept-R200	46	0	5	Tram swept path design r200
T-Swept-Symbol	0	0	0	Tram swept path design symbol
T-Swept-Text	0	0	1	Tram swept path design text
T-Swept-Vehicle	0	0	0	Tram swept path design vehicle
T-Track_Rail-CutText	21	0	0	Tram track design cut text
T-Track-Bonding	0	0	0	Tram track design bonding
T-Track-CL	6	4	0	Tram track design centerline
T-Track-CL-IP	6	0	0	Tram track design centre line ip
T-Track-CL-Symbols	3	0	0	Tram track design centre line symbols
T-Track-CL-Tangent	5	0	0	Tram track design centre line tangent
T-Track-CL-Tracks	6	4	1	Tram track design centre line tracks
T-Track- CurveDetails-Line	0	1	0	Tram track design curve details line
T-Track- CurveDetails-Text	0	0	1	Tram track design curve details text
T-Track-Drain-Details	0	0	0	Tram track design drain details
T-Track-Drain-Line	0	0	0	Tram track design drain line
T-Track-Drain-Text	0	0	0	Tram track design drain text
T-Track-Ex	0	0	0	Tram track exist
T-Track-LineMarking	0	0	0	Tram track design line marking
T-Track-Materials	3	0	2	Tram track design materials
T-Track-Platform- Edge	8	0	3	Tram track design platform edge
T-Track-Platform- Furniture	0	0	0	Tram track design platform furniture
T-Track-Points- Diagram	0	0	0	Tram track design points diagram
T-Track-Points-Dim	0	0	0	Tram track design points dim
T-Track-Points- EdgeLines	4	0	0	Tram track design point edgelines
T-Track-Points-RE	12	0	2	Tram track design points running edge
T-Track-Points-Text	0	0	0	Tram track design points text
T-Track-Rail-CutText	21	0	1	Tram track design points cut text

Name	Colour	Line Style	Line Weight	Description
T-Track-Rail- EdgeLines	4	0	0	Tram track design rail edgelines
T-Track-Rail- Elevation	0	0	2	Tram track design rail elevation
T-Track-Rail-Joints	3	0	0	Tram track design rail joints
T-Track-Rail-Number	0	0	1	Tram track design rail number
T-Track-Rail-RE	2	0	3	Tram track design rail running edge
T-Track-Stud Marking	0	0	0	Tram Stud Marking
T-Track-Text	0	0	0	Tram track design text
T-Track-Xing- Diagram	0	0	0	Tram track design crossing diagram
T-Track-Xing-Dims	0	0	0	Tram track design crossing dimensions
T-Track-Xing- EdgeLines	0	0	0	Tram track design crossing edgelines
T-Track-Xing-RE	1	0	3	Tram track design crossing running edge
T-Track-Xing-Text	0	0	0	Tram track design crossing text

Appendix Q11 – Road Levels

Name	Colour	Line Style	Line Weight	Description
R-D-BARRIER	1	0	2	Barrier Various
R-D-BARRIER-BOLLARD	44	0	0	Bollard
R-D-BARRIER-CONC	0	0	2	Barrier Concrete
R-D-BARRIER-CONC-BASE	1	0	2	Barrier Concrete Base
R-D-BARRIER-CONC-EB3	1	0	2	Barrier Concrete EB3
R-D-BARRIER-CONC-HINGE	1	0	2	Barrier Concrete Hinge
R-D-BARRIER-CONC-INTERFACE	1	0	2	Barrier Concrete Interface
R-D-BARRIER-CONC-TOE	1	0	2	Barrier Concrete Top
R-D-BARRIER-CONC-TOP	1	0	2	Barrier Concrete Toe
R-D-BARRIER-CRASH-ATTEN	3	0	1	Barrier Crash Attenuator
R-D-BARRIER-FENCE	0	fence	2	Fence - Various
R-D-BARRIER-FLEXIBLE-W BEAM	1	0	2	Barrier Flexible W Beam
R-D-BARRIER-GUARD-FENCE	0	guard fence	1	Barrier Guard Fence
R-D-BARRIER-GUARD-FENCE-LHS	0	Guard Fence Left	1	Barrier Guard Fence
R-D-BARRIER-GUARD-FENCE-RHS	0	Guard Fence Right	1	Barrier Guard Fence
R-D-BARRIER-HANDRAIL	0	0	1	Handrail
R-D-BARRIER-OUTLINE	5	0	0	Barrier Outline
R-D-BARRIER-PED-FENCE	0	fence	2	Fence - Pedestrian
R-D-BARRIER-WIRE-ROPE	0	Wire Rope Safety Barrier	1	Barrier Wire Rope Safety
R-D-BOUNDARY	6	4	2	Boundarie - Proposed
R-D-CHECK-AQUA-FL	21	0	0	Check - Aquaplaning
R-D-CHECK-AQUA-FL-ACCEPTABLE	2	0	0	Check - Aquaplaning Acceptable
R-D-CHECK-AQUA-FL-HIGH-RISK	4	0	0	Check - Aquaplaning High Risk
R-D-CHECK-AQUA-FL-LOW-RISK	24	0	0	Check - Aquaplaning Low Risk
R-D-CHECK-AQUA-FLOW-PATH	0	0	0	Check - Aquaplaning Flow Path
R-D-CHECK-AQUA-FL-UNACCEPTABLE	3	0	0	Check - Aquaplaning Unacceptable
R-D-CHECK-AQUA-LOW-POINT	10	0	0	Check - Aquaplaning Low Point
R-D-CHECK-AQUA-POND	6	0	0	Check - Aquaplaning Ponding
R-D-CHECK-AQUA-SURFACE	0	0	0	Check - Aquaplaning Surface
R-D-CHECK-CLEARZONE	53	0	2	Sight Line - Clearzone Limits
R-D-CHECK-ROUNDABOUT-DEFLECTION	3	3	1	Sight Line - Roundabout deflection
R-D-CHECK-SIGHT-ACHIEVED	2	0	2	Sight Line - Achieved

Name	Colour	Line Style	Line Weight	Description
R-D-CHECK-SIGHTLINE	0	0	1	Sight Line - Various
R-D-CHECK-SIGHTLINE-100	10	0	1	Sight Line - 100km/hr
R-D-CHECK-SIGHTLINE-110	11	0	1	Sight Line - 110km/hr
R-D-CHECK-SIGHTLINE-120	12	0	1	Sight Line - 120km/hr
R-D-CHECK-SIGHTLINE-20	2	0	1	Sight Line - 50km/hr
R-D-CHECK-SIGHTLINE-30	3	0	1	Sight Line - 50km/hr
R-D-CHECK-SIGHTLINE-40	4	0	1	Sight Line - 50km/hr
R-D-CHECK-SIGHTLINE-50	5	0	1	Sight Line - 50km/hr
R-D-CHECK-SIGHTLINE-60	6	0	1	Sight Line - 60km/hr
R-D-CHECK-SIGHTLINE-70	7	0	1	Sight Line - 70km/hr
R-D-CHECK-SIGHTLINE-80	8	0	1	Sight Line - 80km/hr
R-D-CHECK-SIGHTLINE-90	9	0	1	Sight Line - 90km/hr
R-D-CHECK-SIGHTLINE-ASD-1	17	0	0	Sight Line - Approach sight distance 1
R-D-CHECK-SIGHTLINE-ASD-2	18	0	0	Sight Line - Approach sight distance 2
R-D-CHECK-SIGHTLINE-ASD-3	19	0	0	Sight Line - Approach sight distance 3
R-D-CHECK-SIGHTLINE-ASD-4	21	0	0	Sight Line - Approach sight distance 4
R-D-CHECK-SIGHTLINE-ASD-5	22	0	0	Sight Line - Approach sight distance 5
R-D-CHECK-SIGHTLINE-CAR-SSD	8	0	0	Sight Line - Approach sight distance car
R-D-CHECK-SIGHTLINE-OTHER-1	17	0	0	Sight Line - Other 1
R-D-CHECK-SIGHTLINE-OTHER-2	18	0	0	Sight Line - Other 2
R-D-CHECK-SIGHTLINE-OTHER-3	19	0	0	Sight Line - Other 3
R-D-CHECK-SIGHTLINE-OTHER-4	21	0	0	Sight Line - Other 4
R-D-CHECK-SIGHTLINE-OTHER-5	22	0	0	Sight Line - Other 5
R-D-CHECK-SIGHTLINE-SISD-1	17	0	0	Sight Line - Safety intersection sigh distance 1
R-D-CHECK-SIGHTLINE-SISD-2	18	0	0	Sight Line - Safety intersection sigh distance 2
R-D-CHECK-SIGHTLINE-SISD-3	19	0	0	Sight Line - Safety intersection sigh distance 3
R-D-CHECK-SIGHTLINE-SISD-4	21	0	0	Sight Line - Safety intersection sigh distance 4
R-D-CHECK-SIGHTLINE-SISD-5	22	0	0	Sight Line - Safety intersection sigh distance 5
R-D-CHECK-SIGHTLINE-TEXT	0	0	0	Sight Line - Text various
R-D-CHECK-SIGHTLINE-TRUCK-SSD	11	0	0	Sight Line - Approach sight distance truck
R-D-CHECK-SIGHT-NOT-ACHIEVED	3	0	2	Sight Line - Not achieved

Name	Colour	Line Style	Line Weight	Description
R-D-CHECK-SIGHT-RELAXED	4	0	2	Sight Line - Relaxed
R-D-CHECK-TURNING-PATH	0	0	1	Turn - Swept Path
R-D-CHECK-TURNING-PATH-1	1	0	1	Turn - Swept Path 1
R-D-CHECK-TURNING-PATH-10	10	0	1	Turn - Swept Path 10
R-D-CHECK-TURNING-PATH-2	2	0	1	Turn - Swept Path 2
R-D-CHECK-TURNING-PATH-3	3	0	1	Turn - Swept Path 3
R-D-CHECK-TURNING-PATH-4	4	0	1	Turn - Swept Path 4
R-D-CHECK-TURNING-PATH-5	5	0	1	Turn - Swept Path 5
R-D-CHECK-TURNING-PATH-6	6	0	1	Turn - Swept Path 6
R-D-CHECK-TURNING-PATH-7	7	0	1	Turn - Swept Path 7
R-D-CHECK-TURNING-PATH-8	8	0	1	Turn - Swept Path 8
R-D-CHECK-TURNING-PATH-9	9	0	1	Turn - Swept Path 9
R-D-CHECK-TURNING-PATH-BDOUBLE	19	0	1	Turn - Vehicle B-Double
R-D-CHECK-TURNING-PATH-BDOUBLE-1	19	0	1	Turn - Vehicle B-Double
R-D-CHECK-TURNING-PATH-BDOUBLE-2	19	0	1	Turn - Vehicle B-Double
R-D-CHECK-TURNING-PATH-BDOUBLE-3	19	0	1	Turn - Vehicle B-Double
R-D-CHECK-TURNING-PATH-BDOUBLE-4	19	0	1	Turn - Vehicle B-Double
R-D-CHECK-TURNING-PATH-BDOUBLE-5	19	0	1	Turn - Vehicle B-Double
R-D-CHECK-TURNING-PATH-BDOUBLE-QUAD-QUAD	19	0	1	Turn - Vehicle B-Double - Quad - Quad
R-D-CHECK-TURNING-PATH-BUS	12	0	1	Turn - Vehicle Single Bus
R-D-CHECK-TURNING-PATH-BUS-1	12	0	1	Turn - Vehicle Single Bus
R-D-CHECK-TURNING-PATH-BUS-2	12	0	1	Turn - Vehicle Single Bus
R-D-CHECK-TURNING-PATH-BUS-3	12	0	1	Turn - Vehicle Single Bus
R-D-CHECK-TURNING-PATH-BUS-4	12	0	1	Turn - Vehicle Single Bus
R-D-CHECK-TURNING-PATH-BUS-5	12	0	1	Turn - Vehicle Single Bus
R-D-CHECK-TURNING-PATH-BUS-ARTICULATED	12	0	1	Turn - Vehicle Articulated Bus
R-D-CHECK-TURNING-PATH-BUS-LONG-RIGID	12	0	1	Turn - Vehicle Long rigid Bus
R-D-CHECK-TURNING-PATH-CAR	3	0	1	Turn - Vehicle Car
R-D-CHECK-TURNING-PATH-CAR-01	3	0	1	Turn - Vehicle Car
R-D-CHECK-TURNING-PATH-CAR-02	3	0	1	Turn - Vehicle Car
R-D-CHECK-TURNING-PATH-CAR-03	3	0	1	Turn - Vehicle Car
R-D-CHECK-TURNING-PATH-CAR-04	3	0	1	Turn - Vehicle Car
R-D-CHECK-TURNING-PATH-CAR-05	3	0	1	Turn - Vehicle Car
R-D-CHECK-TURNING-PATH-SEMI-19	1	0	1	Turn - Vehicle Semi 19.5m
R-D-CHECK-TURNING-PATH-SEMI-19-1	1	0	1	Turn - Vehicle Semi 19.5m
R-D-CHECK-TURNING-PATH-SEMI-19-2	1	0	1	Turn - Vehicle Semi 19.5m
R-D-CHECK-TURNING-PATH-SEMI-19-3	1	0	1	Turn - Vehicle Semi 19.5m

Name	Colour	Line Style	Line Weight	Description
R-D-CHECK-TURNING-PATH-SEMI-19-4	1	0	1	Turn - Vehicle Semi 19.5m
R-D-CHECK-TURNING-PATH-SEMI-19-5	1	0	1	Turn - Vehicle Semi 19.5m
R-D-CHECK-TURNING-PATH-SEMI-25	3	0	1	Turn - Vehicle Semi 25m
R-D-CHECK-TURNING-PATH-TEXT	0	0	0	Turn - Swept Path Text
R-D-CHECK-TURNING-PATH-TRUCK-12	6	0	1	Turn - Vehicle 12.5m Truck
R-D-CHECK-TURNING-PATH-TRUCK-12-1	6	0	1	Turn - Vehicle 12.5m Truck
R-D-CHECK-TURNING-PATH-TRUCK-12-2	6	0	1	Turn - Vehicle 12.5m Truck
R-D-CHECK-TURNING-PATH-TRUCK-12-3	6	0	1	Turn - Vehicle 12.5m Truck
R-D-CHECK-TURNING-PATH-TRUCK-12-4	6	0	1	Turn - Vehicle 12.5m Truck
R-D-CHECK-TURNING-PATH-TRUCK-12-5	6	0	1	Turn - Vehicle 12.5m Truck
R-D-CHECK-TURNING-PATH-TRUCK-8	5	0	1	Turn - Vehicle 8.8m Truck
R-D-CHECK-TURNING-PATH-TRUCK-8-1	5	0	1	Turn - Vehicle 8.8m Truck
R-D-CHECK-TURNING-PATH-TRUCK-8-2	5	0	1	Turn - Vehicle 8.8m Truck
R-D-CHECK-TURNING-PATH-TRUCK-8-3	5	0	1	Turn - Vehicle 8.8m Truck
R-D-CHECK-TURNING-PATH-TRUCK-8-4	5	0	1	Turn - Vehicle 8.8m Truck
R-D-CHECK-TURNING-PATH-TRUCK-8-5	5	0	1	Turn - Vehicle 8.8m Truck
R-D-COMP-BARRIER-CONCRETE	7	0	0	Component - Barrier Concrete
R-D-COMP-BARRIER-EB3	52	0	0	Component - Barrier EB3
R-D-COMP-BARRIER-EB4	52	0	0	Component - Barrier EB4
R-D-COMP-BARRIER-HPL	1	0	1	Component - Barrier High Performance Level
R-D-COMP-BARRIER-HPL-POST	1	0	1	Component - Barrier High Performance Level Post
R-D-COMP-BARRIER-HPL-RAIL	1	0	1	Component - Barrier High Performance Level Rail
R-D-COMP-BARRIER-MPL	1	0	1	Component - Barrier Medium Performance Level
R-D-COMP-BARRIER-MPL-POST	1	0	1	Component - Barrier Medium Performance Level Post
R-D-COMP-BARRIER-MPL-RAIL	1	0	1	Component - Barrier Medium Performance Level Rail
R-D-COMP-BARRIER-OUTLINE	21	0	0	Component - Barrier Outline
R-D-COMP-BARRIER-PARAPET	1	0	1	Component - Barrier Parapet
R-D-COMP-BARRIER-RPL	1	0	1	Component - Barrier RPL
R-D-COMP-BARRIER-TL3	52	0	0	Component - Barrier TL3
R-D-COMP-BARRIER-TL4	52	0	0	Component - Barrier TL4
R-D-COMP-BARRIER-TL5	52	0	0	Component - Barrier TL5
R-D-COMP-BRIDGE-DECK	0	0	1	Component - Bridge Deck
R-D-COMP-DRIVEWAY	4	0	0	Component - Driveway
R-D-COMP-EARTHWORK-CUT	3	0	0	Component - Earthworks Cut

Name	Colour	Line Style	Line Weight	Description
R-D-COMP-EARTHWORK-DRAIN	4	0	0	Component - Earthworks Drain
R-D-COMP-EARTHWORK-FILL	2	0	0	Component - Earthworks Fill
R-D-COMP-EARTHWORK-TOPSOIL	52	0	0	Component - Earthworks Topsoil
R-D-COMP-EARTHWORK-TYPE-A	50	0	0	Component - Earthworks Type A
R-D-COMP-EARTHWORK-TYPE-B	54	0	0	Component - Earthworks Type B
R-D-COMP-EARTHWORK-TYPE-C	17	0	0	Component - Earthworks Type C
R-D-COMP-EARTHWORK-VERGE	52	0	0	Component - Earthworks Verge
R-D-COMP-GEOTEXTILE	0	0	0	Component - Geotextile
R-D-COMP-KERB	8	0	0	Component - Kerb
R-D-COMP-KERB-B1	8	0	0	Component - Kerb B1
R-D-COMP-KERB-B2	8	0	0	Component - Kerb B2
R-D-COMP-KERB-B3	8	0	0	Component - Kerb B3
R-D-COMP-KERB-CD2	8	0	0	Component - Kerb CD2
R-D-COMP-KERB-CD3	8	0	0	Component - Kerb CD3
R-D-COMP-KERB-CD4	8	0	0	Component - Kerb CD4
R-D-COMP-KERB-M1	8	0	0	Component - Kerb M1
R-D-COMP-KERB-M2	8	0	0	Component - Kerb M2
R-D-COMP-KERB-M3	8	0	0	Component - Kerb M3
R-D-COMP-KERB-M4	8	0	0	Component - Kerb M4
R-D-COMP-KERB-M5	8	0	0	Component - Kerb M5
R-D-COMP-KERB-M6	8	0	0	Component - Kerb M6
R-D-COMP-KERB-SM1	8	0	0	Component - Kerb SM1
R-D-COMP-KERB-SM2	8	0	0	Component - Kerb SM2
R-D-COMP-KERB-SM3	8	0	0	Component - Kerb SM3
R-D-COMP-KERB-SPOON-DRAIN	8	0	0	Component - Kerb Spoon Drain
R-D-COMP-KERB-TRANSITION	8	0	0	Component - Kerb Transition
R-D-COMP-LANE	4	0	0	Component - Lane
R-D-COMP-PATH	3	0	0	Component - Path
R-D-COMP-PAVE-AC1	208	0	0	Component - Pavement AC1
R-D-COMP-PAVE-AC2	160	0	0	Component - Pavement AC2
R-D-COMP-PAVE-AC3	112	0	0	Component - Pavement AC3
R-D-COMP-PAVE-AC4	80	0	0	Component - Pavement AC4
R-D-COMP-PAVE-AC5	48	0	0	Component - Pavement AC5
R-D-COMP-PAVE-CAPPING	60	0	0	Component - Pavement Capping

Name	Colour	Line Style	Line Weight	Description
R-D-COMP-PAVE-CONC1	7	0	0	Component - Pavement Concrete 1
R-D-COMP-PAVE-CONC2	144	0	0	Component - Pavement Concrete 2
R-D-COMP-PAVE-CONC3	18	0	0	Component - Pavement Concrete 3
R-D-COMP-PAVE-CONC4	18	0	0	Component - Pavement Concrete 4
R-D-COMP-PAVE-CONC5	18	0	0	Component - Pavement Concrete 5
R-D-COMP-PAVE-DGA	37	0	1	Component - Pavement DGA
R-D-COMP-PAVE-GRAVEL	48	0	0	Component - Pavement Gravel
R-D-COMP-PAVE-MILLING	40	0	0	Component - Pavement Milling
R-D-COMP-PAVE-OGA	33	0	0	Component - Pavement OGA
R-D-COMP-PAVE-OVERLAY	41	0	0	Component - Pavement Overlay
R-D-COMP-PAVE-PV1	208	0	0	Component - Pavement PV1
R-D-COMP-PAVE-PV2	70	0	0	Component - Pavement PV2
R-D-COMP-PAVE-PV3	98	0	0	Component - Pavement PV3
R-D-COMP-PAVE-PV4	146	0	0	Component - Pavement PV4
R-D-COMP-PAVE-PV5	115	0	0	Component - Pavement PV5
R-D-COMP-PAVE-SURFACE1	176	0	0	Component - Pavement Surface 1
R-D-COMP-PAVE-SURFACE2	58	0	0	Component - Pavement Surface 2
R-D-COMP-PAVE-SURFACE3	40	0	0	Component - Pavement Surface 3
R-D-COMP-PAVE-SURFACE4	44	0	0	Component - Pavement Surface 4
R-D-COMP-PAVE-SURFACE5	50	0	0	Component - Pavement Surface 5
R-D-COMP-PRAM-RAMP	4	0	0	Component - Pram Ramp
R-D-COMP-ROAD	0	0	1	Component - Road
R-D-COMP-SHOULDER	4	0	0	Component - Road Shoulder
R-D-COMP-SOFFIT	38	0	1	Component - Soffit
R-D-COMP-STRUCTURE	3	0	0	Component - Structure
R-D-COMP-STRUCTURE-BARRIER	1	0	0	Component - Structure Barrier
R-D-COMP-STRUCTURE-N-WALL	21	0	0	Component - Structure Noise Wall
R-D-COMP-STRUCTURE-PILE	21	0	0	Component - Structure Pile
R-D-COMP-STRUCTURE-PILE-CAP	21	0	0	Component - Structure Cap
R-D-COMP-TOPSOIL-STRIP	118	0	0	Component - Topsoil Strip
R-D-COMP-VOLUME-CUT	2	0	0	Component - Volume Cut

Name	Colour	Line Style	Line Weight	Description
R-D-COMP-VOLUME-FILL	3	0	0	Component - Volume Fill
R-D-COMP-VOLUME-TOPSOIL-CUT	2	0	0	Component - Volume Topsoil Cut
R-D-COMP-VOLUME-TOPSOIL-FILL	3	0	0	Component - Volume Topsoil Fill
R-D-COMP-WALL-CONCRETE-1	4	0	0	Component - Concrete Wall 1
R-D-COMP-WALL-CONCRETE-2	4	0	0	Component - Concrete Wall 2
R-D-COMP-WALL-GABION	4	0	0	Component - Gabion Wall
R-D-COMP-WALL-MSE	4	0	0	Component - Concrete Wall MSE
R-D-COMP-WALL-OTHER	4	0	0	Component - Concrete Wall Other
R-D-COMP-WALL-TIMBER1	4	0	0	Component - Timber Wall 1
R-D-COMP-WALL-TIMBER2	4	0	0	Component - Timber Wall 2
R-D-CONSTRUCT-CIVIL-CELL	0	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-CLIP	0	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-COMP-CLEARANCE	0	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-COMP-MISC	0	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-COMP-SUPERELEVATION	16	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-CROSSFALL-CTRL	0	7	0	Miscellaneous construction lines
R-D-CONSTRUCT-CROSSFALL-LHS	0	3	0	Miscellaneous construction lines
R-D-CONSTRUCT-CROSSFALL-RHS	0	3	0	Miscellaneous construction lines
R-D-CONSTRUCT-DISPLAY-RULE	22	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-DISPLAY-RULE-PAVE	26	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-DNC	0	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-DO-NOT-CONSTRUCT	0	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-END-CONDITION-TRIGGER	89	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-INFORMATION	21	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-KEY-STATION	13	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-LINE	0	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-LINE-1	1	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-LINE-2	2	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-LINE-3	3	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-LINE-4	4	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-LINE-5	5	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-NOISE-WALL-TRIGGER	82	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-PARAMETRIC	4	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-PC-CURVE-WIDENING	110	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-PC-PAVEMENT-BOXING	82	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-POINT-CONTROL	164	0	0	Miscellaneous construction lines

Name	Colour	Line Style	Line Weight	Description
R-D-CONSTRUCT-REFERENCE-CLIPS	0	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-REMOVE-COMPONENT	16	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-R-WALL-TRIGGER	78	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-SETOUT-POINT	5	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-SP-N-WALL	5	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-SP-R-WALL	5	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-SP-STRUCTURAL	5	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-STRUCTURE	0	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-SURFACE-BREAKLINE	0	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-SURFACE-TEMPLATE-BOUND	13	2	1	Miscellaneous construction lines
R-D-CONSTRUCT-TEMPLATE-CONTROL	5	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-TEMPORARY-STRING	0	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-TERRAIN-BOUNDARY	0	0	0	Miscellaneous construction lines
R-D-CONSTRUCT-TRIGGER	0	0	0	Miscellaneous construction lines
R-D-CORR	6	0	0	ORD Corridor
R-D-CORR-CONTOURS-MAJOR	0	0	0	ORD Corridor - Contours Major
R-D-CORR-CONTOURS-MINOR	7	0	0	ORD Corridor - Contours Minor
R-D-CORR-END-CONDITION-EXCEPTION	0	0	0	ORD Corridor - End Condition Exception
R-D-CORR-KEY-STATION	110	0	0	ORD Corridor - Key Station
R-D-CORR-LINEAR	180	0	0	ORD Corridor - Linear
R-D-CORR-POINT-CONTROL	8	0	0	ORD Corridor - Point Control
R-D-CORR-SECONDARY-ALIGNMNET	0	0	0	ORD Corridor - Secondary Alignmnet
R-D-CORR-SUPER-LEFT	0	0	0	ORD Corridor - Super Left
R-D-CORR-SUPER-RIGHT	0	0	0	ORD Corridor - Super Right
R-D-CORR-SUPER-SECTION	6	0	0	ORD Corridor - Super Section
R-D-CORR-TEMPLATE	6	0	0	ORD Corridor - Template
R-D-CORR-TEMPLATE-LINEAR	6	0	0	ORD Corridor - Template Linear
R-D-EARTHWORK	9	0	1	Earthworks - General
R-D-EARTHWORK-BATTER-TICKS	9	0	1	Earthworks - Batter Ticks
R-D-EARTHWORK-BATTER-TOE	9	0	1	Earthworks - Interface Cut
R-D-EARTHWORK-BATTER-TOP	9	0	1	Earthworks - Interface Fill
R-D-EARTHWORK-BENCH	9	0	1	Earthworks - Bench
R-D-EARTHWORK-BOREHOLE	9	0	1	Earthworks - Bore Holes
R-D-EARTHWORK-BOXING	9	0	1	Earthworks - Boxing
R-D-EARTHWORK-CHANNEL	9	0	1	Earthworks - Channel
R-D-EARTHWORK-HINGE	9	0	1	Earthworks - Hinge

Name	Colour	Line Style	Line Weight	Description
R-D-EARTHWORK-MEDIAN	9	0	1	Earthworks - Median Drain
R-D-EARTHWORK-MOUND	9	0	1	Earthworks - Mound / Bund
R-D-EARTHWORK-MOUND-TOE	9	0	1	Earthworks - Toe of Mound
R-D-EARTHWORK-MOUND-TOP	9	0	1	Earthworks - Top of Mound
R-D-EARTHWORK-TYPE-A	9	0	1	Earthworks - Structural Fill - Type A
R-D-EARTHWORK-TYPE-B	9	0	1	Earthworks - General Fill - Type B
R-D-EARTHWORK-TYPE-C	9	0	1	Earthworks - Type C
R-D-EARTHWORK-VERGE1	9	0	1	Earthworks - Edge of Verge (less than/equal to 1.0m wide)
R-D-EARTHWORK-VERGE2	9	0	1	Earthworks - Edge of Verge (greater than 1.0m wide)
R-D-GEOM-HORZ-ALG-1	0	7	2	Geometry - Horizontal Alignment 1
R-D-GEOM-HORZ-ALG-1-CHAINAGE	0	0	1	Geometry - Horizontal Alignment 1 Chainage
R-D-GEOM-HORZ-ALG-1-TEXT	0	0	1	Geometry - Horizontal Alignment 1 Text
R-D-GEOM-HORZ-ALG-2	0	7	2	Geometry - Horizontal Alignment 2
R-D-GEOM-HORZ-ALG-2-CHAINAGE	0	0	1	Geometry - Horizontal Alignment 2 Chainage
R-D-GEOM-HORZ-ALG-2-TEXT	0	0	1	Geometry - Horizontal Alignment 2 Text
R-D-GEOM-HORZ-ALG-3	0	7	2	Geometry - Horizontal Alignment 3
R-D-GEOM-HORZ-ALG-3-CHAINAGE	0	0	1	Geometry - Horizontal Alignment 3 Chainage
R-D-GEOM-HORZ-ALG-3-TEXT	0	0	1	Geometry - Horizontal Alignment 3 Text
R-D-GEOM-HORZ-ALG-4	0	7	2	Geometry - Horizontal Alignment 4
R-D-GEOM-HORZ-ALG-4-CHAINAGE	0	0	1	Geometry - Horizontal Alignment 4 Chainage
R-D-GEOM-HORZ-ALG-4-TEXT	0	0	1	Geometry - Horizontal Alignment 4 Text
R-D-GEOM-HORZ-ALG-5	0	7	2	Geometry - Horizontal Alignment 5
R-D-GEOM-HORZ-ALG-5-CHAINAGE	0	0	1	Geometry - Horizontal Alignment 5 Chainage
R-D-GEOM-HORZ-ALG-5-TEXT	0	0	1	Geometry - Horizontal Alignment 5 Text
R-D-GEOM-HORZ-ALG-6	0	7	2	Geometry - Horizontal Alignment 6

Name	Colour	Line Style	Line Weight	Description
R-D-GEOM-HORZ-ALG-6-CHAINAGE	0	0	1	Geometry - Horizontal Alignment 6 Chainage
R-D-GEOM-HORZ-ALG-6-TEXT	0	0	1	Geometry - Horizontal Alignment 6 Text
R-D-GEOM-HORZ-ALG-TEMP	16	7	2	Geometry - Temporary Horizontal Alignment
R-D-GEOM-HORZ-ALG-TEMP-CHAINAGE	0	0	1	Geometry - Temporary Horizontal Alignment Chainage
R-D-GEOM-HORZ-ALG-TEMP-TEXT	0	0	1	Geometry - Temporary Horizontal Alignment Text
R-D-GEOM-VERT-ALG-1	0	7	2	Geometry - Vertical Alignment 1
R-D-GEOM-VERT-ALG-1-TEXT	0	0	1	Geometry - Vertical Alignment 1 Text
R-D-GEOM-VERT-ALG-2	0	7	2	Geometry - Vertical Alignment2
R-D-GEOM-VERT-ALG-2-TEXT	0	0	1	Geometry - Vertical Alignment 2 Text
R-D-GEOM-VERT-ALG-3	0	7	2	Geometry - Vertical Alignment3
R-D-GEOM-VERT-ALG-3-TEXT	0	0	1	Geometry - Vertical Alignment 3 Text
R-D-GEOM-VERT-ALG-4	0	7	2	Geometry - Vertical Alignment4
R-D-GEOM-VERT-ALG-4-TEXT	0	0	1	Geometry - Vertical Alignment 4 Text
R-D-KERB	8	0	2	Kerb - Various detail
R-D-KERB-BACK	8	0	2	Kerb - Back / channel
R-D-KERB-BASE	8	0	2	Kerb - Base
R-D-KERB-EDGE	7	0	0	Kerb - Edge strip
R-D-KERB-LINE	7	0	0	Kerb - Line / Invert / channel
R-D-KERB-LIP	8	0	2	Kerb - Lip / channel
R-D-KERB-TEMPORARY	8	0	2	Kerb - Temporary
R-D-KERB-TEXT	8	0	2	Kerb - Text setout
R-D-KERB-TOP	8	0	2	Kerb - Top
R-D-PAVE-BOXING	0	0	2	Pavement - Boxing
R-D-PAVE-DRIVEWAY	26	0	1	Pavement - Driveway
R-D-PAVE-LAYERS	0	0	2	Pavement - Layers various
R-D-PAVE-MEDIAN	24	0	1	Pavement - Median
R-D-PAVE-OVERLAY	20	0	1	Pavement - Overlay
R-D-PAVE-PATCH	0	0	1	Pavement - Patching
R-D-PAVE-PATH	52	0	1	Pavement - Path
R-D-PAVE-RAISED	0	0	1	Pavement - Raised
R-D-PAVE-REMOVE	44	0	1	Pavement - To be removed
R-D-PAVE-TEMPORARY	38	0	1	Pavement - Temporary

Name	Colour	Line Style	Line Weight	Description
R-D-PAVE-TYPE1	28	0	1	Pavement - Type 1
R-D-PAVE-TYPE10	43	0	1	Pavement - Type 10
R-D-PAVE-TYPE2	29	0	1	Pavement - Type 2
R-D-PAVE-TYPE3	38	0	1	Pavement - Type 3
R-D-PAVE-TYPE4	33	0	1	Pavement - Type 4
R-D-PAVE-TYPE5	34	0	1	Pavement - Type 5
R-D-PAVE-TYPE6	35	0	1	Pavement - Type 6
R-D-PAVE-TYPE7	36	0	1	Pavement - Type 7
R-D-PAVE-TYPE8	37	0	1	Pavement - Type 8
R-D-PAVE-TYPE9	41	0	1	Pavement - Type 9
R-D-PAVE-WIDENING	44	0	0	Pavement - Widening
R-D-PEOPLE	0	0	0	Road - People Outlines / Figures
R-D-PMARK	0	0	1	Pavement Marking - Various
R-D-PMARK-BAR-1WAY	0	Barrier-One Way	0	Pavement Marking - Barrier One Way
R-D-PMARK-BAR-1WAY-12-RRPM	0	Barrier-One Way 12m RRPM	0	Pavement Marking - Barrier One Way 12m RRPM
R-D-PMARK-BAR-1WAY-24-RRPM	0	Barrier-One Way 24m RRPM	0	Pavement Marking - Barrier One Way 24m RRPM
R-D-PMARK-BAR-2WAY	0	Barrier-Two Way	0	Pavement Marking - Barrier Two Way
R-D-PMARK-BAR-2WAY-12-RRPM	0	Barrier-Two Way 12m RRPM	0	Pavement Marking - Barrier Two Way 12m RRPM
R-D-PMARK-BAR-2WAY-24-RRPM	0	Barrier-Two Way 24m RRPM	0	Pavement Marking - Barrier Two Way 24m RRPM
R-D-PMARK-BAR-SEP-12-RRPM	0	Barrier-Single Separation 12m Twoway RRPM	0	Pavement Marking - Barrier Single Separation 12m RRPM
R-D-PMARK-BAR-SEP-24-RRPM	0	Barrier-Single Separation 24m Twoway RRPM	0	Pavement Marking - Barrier Single Separation 24m RRPM
R-D-PMARK-BAR-SEP-6-RRPM	0	Barrier-Single Separation 6m Twoway RRPM	0	Pavement Marking - Barrier Single Separation 6m RRPM
R-D-PMARK-BAR-SINGLE-SEP-100	0	Barrier-Single Separation-100	0	Pavement Marking - Barrier Single Separation 100mm wide
R-D-PMARK-BAR-SINGLE-SEP-150	0	Barrier-Single Separation-150	0	Pavement Marking - Barrier Single Separation 150mm wide

Name	Colour	Line Style	Line Weight	Description
R-D-PMARK-BAR-SINGLE-SEP-80	0	Barrier-Single Separation-80	0	Pavement Marking - Barrier Single Separation 80mm wide
R-D-PMARK-CHEVRON	0	0	1	Pavement Marking - Chevron
R-D-PMARK-COLOUR-FILL-BICYCLE	34	0	1	Coloured pavement - bicycle lanes
R-D-PMARK-COLOUR-FILL-BUS	26	0	1	Coloured pavement - bus lanes
R-D-PMARK-COLOUR-FILL-PEDXING	38	0	1	Coloured pavement - pedestrian crossing
R-D-PMARK-CON-FWY-SPECIAL	0	Continuity-Freeway and Special	0	Pavement Marking - 150mm wide, 1.0m/3.0m
R-D-PMARK-CON-STATCON	0	Continuity-Statcon	0	Pavement Marking - 150mm wide, 0.6m/0.6m
R-D-PMARK-CON-STD	0	Continuity-Standard	0	Pavement Marking - 100mm wide, 1.0m/3.0m
R-D-PMARK-CONSTRUCTION	1	0	0	Pavement Marking - Construction
R-D-PMARK-EDGE-100	0	Edge-Normal/Parking Control	0	Pavement Marking - 100 wide - Normal/Parking Control
R-D-PMARK-EDGE-12-RRPM	0	Edge-One Way 12m RRPM	0	Pavement Marking - Edge One Way 12m RRPM
R-D-PMARK-EDGE-12-RRPM-RHS	0	Edge-One Way 12m RRPM (RHS)	0	Pavement Marking - Edge One Way 12m RRPM - Right Hand Side
R-D-PMARK-EDGE-150	0	Edge-150 Wide	0	Pavement Marking - 150 wide
R-D-PMARK-EDGE-20-RRPM	0	Edge-One Way 20m RRPM	0	Pavement Marking - Edge One Way 20m RRPM
R-D-PMARK-EDGE-20-RRPM-RHS	0	Edge-One Way 20m RRPM (RHS)	0	Pavement Marking - Edge One Way 20m RRPM - Right Hand Side
R-D-PMARK-EDGE-24-RRPM	0	Edge-One Way 24m RRPM	0	Pavement Marking - Edge One Way 24m RRPM
R-D-PMARK-EDGE-24-RRPM-RHS	0	Edge-One Way 24m RRPM (RHS)	0	Pavement Marking - Edge One Way 24m RRPM - Right Hand Side
R-D-PMARK-EDGE-40-RRPM	0	Edge-One Way 40m RRPM	0	Pavement Marking - Edge One Way 40m RRPM
R-D-PMARK-EDGE-40-RRPM-RHS	0	Edge-One Way 40m RRPM (RHS)	0	Pavement Marking - Edge One Way 40m RRPM - Right Hand Side
R-D-PMARK-EDGE-48-RRPM	0	Edge-One Way 48m RRPM	0	Pavement Marking - Edge One Way 48m RRPM
R-D-PMARK-EDGE-48-RRPM-RHS	0	Edge-One Way 48m RRPM (RHS)	0	Pavement Marking - Edge One Way 48m RRPM - Right Hand Side
R-D-PMARK-EDGE-6-RRPM	0	Edge-One Way 6m RRPM	0	Pavement Marking - Edge One Way 6m RRPM

Name	Colour	Line Style	Line Weight	Description
R-D-PMARK-EDGE-6-RRPM-RHS	0	Edge-One Way 6m RRPM (RHS)	0	Pavement Marking - Edge One Way 6m RRPM - Right Hand Side
R-D-PMARK-EDGE-7-RRPM	0	Edge-One Way 7m RRPM	0	Pavement Marking - Edge One Way 7m RRPM
R-D-PMARK-EDGE-7-RRPM-RHS	0	Edge-One Way 7m RRPM (RHS)	0	Pavement Marking - Edge One Way 7m RRPM - Right Hand Side
R-D-PMARK-EDGE-PROFILED	0	Edge-Profiled	0	Pavement Marking - 150mm wide profiled edge line
R-D-PMARK-INT-GIVEWAY	0	Controlled Intersect-Give Way	0	Pavement Marking - Intersection Giveway
R-D-PMARK-INT-RABOUT	0	Controlled Intersect-R'about	0	Pavement Marking - Intersection Roundabout Giveway
R-D-PMARK-INT-STOP	0	Controlled Intersection-Stop	0	Pavement Marking - Intersection Stop
R-D-PMARK-LANE-12-RRPM-ENTRY	0	Lane-OneWay 12m RRPM-Entry/Exit	0	Pavement Marking - Lane entry/exit ramp
R-D-PMARK-LANE-12-RRPM-MEDIAN	0	Lane-OneWay 12m RRPM-MedianTurn	0	Pavement Marking - Lane median turn lane
R-D-PMARK-LANE-12-RRPM-RURAL-RAMP	0	Lane-OneWay 12m RRPM-Rural Ramp	0	Pavement Marking - Lane rural ramp
R-D-PMARK-LANE-12-RRPM-TURN	0	Lane-OneWay 12m RRPM-Turn	0	Pavement Marking - Lane turn lane
R-D-PMARK-LANE-12-RRPM-URBAN-RAMP	0	Lane-OneWay 12m RRPM-Urban Ramp	0	Pavement Marking - Lane urban ramp
R-D-PMARK-LANE-20-RRPM	0	Lane-OneWay 20m RRPM	0	Pavement Marking - Lane
R-D-PMARK-LANE-24-RRPM	0	Lane-OneWay 24m RRPM	0	Pavement Marking - Lane
R-D-PMARK-LANE-6-RRPM	0	Lane-OneWay 6m RRPM	0	Pavement Marking - Lane
R-D-PMARK-LANE-6-RRPM-RHS	0	Lane-OneWay 6m RRPM (RHS)	0	Pavement Marking - Lane - Right Hand Side
R-D-PMARK-LANE-ARTERIAL-LOCAL	0	Lane-Continuous-Arterial/Local	0	Pavement Marking - Continuous Arterial/Local
R-D-PMARK-LANE-FWY	0	Lane-Continuous-Fwy/Commuter	0	Pavement Marking - Freeway Commuter

Name	Colour	Line Style	Line Weight	Description
R-D-PMARK-LANE-SPEC-100-BICYCLE	0	Lane-Special-100 Bicycle	0	Pavement Marking - 100mm wide, 1.0m/2.0m
R-D-PMARK-LANE-SPEC-100-RBOUT	0	Lane-Special-100 Roundabout	0	Pavement Marking - 100mm wide, 9.0m/3.0m
R-D-PMARK-LANE-SPEC-150-RBOUT	0	Lane-Special-150 Roundabout	0	Pavement Marking - 150mm wide, 9.0m/3.0m
R-D-PMARK-LANE-STD	0	Lane-Standard	0	Pavement Marking - 100mm wide, 3.0m/9.0m
R-D-PMARK-PED-CROSSING	0	Pedestrian Crosswalk	0	Pavement Marking - 150mm Pedestrian Crossing
R-D-PMARK-PED-CROSSING-BROKEN	0	Pedestrian Crosswalk broken	0	Pavement Marking - 150mm Pedestrian Crossing broken - for all new works
R-D-PMARK-RAIL-CROSSING-GIVEWAY	0	Rail Crossing-Give Way	1	Pavement Marking - Rail Crossing Giveway
R-D-PMARK-SEP-2WAY	0	Separation-Two Lane Two Way	0	Pavement Marking - 100mm wide, 3.0m/9.0m. 2 way, 2 lane
R-D-PMARK-SEP-2WAY-12-RRPM	0	Separation-2Way 12m RRPM	0	Pavement Marking - 100mm wide, 3.0m/9.0m
R-D-PMARK-SEP-2WAY-12-RRPM-SOLID	0	Separation-2Way 12m RRPM-Solid	0	Pavement Marking - 100mm wide, solid
R-D-PMARK-SEP-2WAY-24-RRPM	0	Separation-2Way 24m RRPM	0	Pavement Marking - 100mm wide, 3.0m/9.0m
R-D-PMARK-SEP-2WAY-24-RRPM-SOLID	0	Separation-2Way 24m RRPM-Solid	0	Pavement Marking - 100mm wide, solid
R-D-PMARK-SEP-REVERSIBLE	0	Separation-Reversible	0	Pavement Marking - 100mm wide, 6.0m/6.0m
R-D-PMARK-SEP-SPEC-100	0	Separation-Special Use-100	0	Pavement Marking - 100mm wide, 9.0m/1.0m
R-D-PMARK-SEP-SPEC-150	0	Separation-Special Use-150	0	Pavement Marking - 150mm wide, 9.0m/3.0m
R-D-PMARK-SEP-SPEC-80	0	Separation-Special Use-100	0	Pavement Marking - 80mm wide, 1.0m/7.0m
R-D-PMARK-STOP	0	Stop Line	0	Pavement Marking - Stop
R-D-PMARK-SYMBOLS	0	0	2	Pavement Marking - Symbols / Arrows
R-D-PMARK-TEXT	0	0	1	Pavement Marking - Various / Text / Dimensions

Name	Colour	Line Style	Line Weight	Description
R-D-PMARK-TRAM-FULL-TIME	0	Tram-Full Time-One Way 4m RRPM	0	Pavement Marking - 100mm wide, 4m RRPM solid
R-D-PMARK-TRAM-PART-TIME	0	Tram-Part Time	0	Pavement Marking - 100mm wide, solid
R-D-PMARK-TRAM-PART-TIME-BROKEN	0	Tram-Part Time-Broken	0	Pavement Marking - 100mm wide, 6.0m/6.0m
R-D-PMARK-TURN-LINE	0	Turn Line-Solid	0	Pavement Marking - 100mm wide turn guidance line
R-D-PMARK-TURN-LINE-BROKEN	0	Turn Line-Broken	0	Pavement Marking - 100mm wide turn guidance line, broken
R-D-PMARK-ZEBRA	0	Pedestrian Crossing-Zebra	0	Pavement Marking - Zebra crossing
R-D-PROFILE-INTERSECTION	1	0	0	ORD Working data
R-D-ROAD	0	0	1	Road - Features / Misc - Various
R-D-ROAD-BITUMEN-CENTRE	3	7	1	Road - Bitumen Centre Line
R-D-ROAD-BITUMEN-EDGE	4	0	2	Road - Bitumen Edge
R-D-ROAD-BITUMEN-SPOT	2	0	1	Road - Bitumen Spot
R-D-ROAD-CROWN	3	5	1	Road - Crown Line
R-D-ROAD-DRIVEWAY	0	0	1	Road - Driveway
R-D-ROAD-FORMATION-CENTRE	3	7	1	Road - Formation Centre Line
R-D-ROAD-FORMATION-EDGE	0	0	2	Road - Formation Edge
R-D-ROAD-FURNITURE	7	0	1	Road - Furniture Various
R-D-ROAD-JOINT	0	0	2	Road - Joints - longitudinal, transverse or other
R-D-ROAD-LANE	0	5	1	Road - Lane line
R-D-ROAD-LANE-EDGE-SEALED	0	0	1	Road - Edge of Traffic Lane - Sealed Road
R-D-ROAD-LANE-EDGE-UNSEALED	4	0	2	Road - Edge of Traffic Lane - Unsealed Road
R-D-ROAD-PATH	3	0	2	Road - Paths - Shared / Bike / Pedestrian
R-D-ROAD-SHOULDER-HARD	3	0	2	Road - Shoulder Hard Stand
R-D-ROAD-SHOULDER-SEALED	0	0	2	Road - Sealed Shoulder
R-D-ROAD-SHOULDER-UNSEALED	0	0	1	Road - Unsealed Shoulder
R-D-ROAD-SIGNS	0	0	1	Signs - Various
R-D-ROAD-SIGNS-FILL	0	0	2	Signs - Coloured Sign Fill
R-D-ROAD-SIGNS-FILL-MONO	0	0	2	Signs - Mono Sign Fill
R-D-ROAD-SUPER-CL	14	0	0	Road - Superelevation Centre Line
R-D-ROAD-SUPER-LHS	14	0	0	Road - Superelevation Left Hand Side

Name	Colour	Line Style	Line Weight	Description
R-D-ROAD-SUPER-RHS	14	0	0	Road - Superelevation Right Hand Side
R-D-ROAD-TRACK	4	0	1	Road - Track (vehicular)
R-D-STRUCT-NOISE-WALL	10	0	2	Noise Wall
R-D-STRUCT-NOISE-WALL-BACK	10	0	2	Noise Wall Back
R-D-STRUCT-NOISE-WALL-FACE	10	0	2	Noise Wall Face
R-D-STRUCT-NOISE-WALL-INTERFACE	10	0	2	Noise Wall Interface
R-D-STRUCT-NOISE-WALL-TOP	10	0	2	Noise Wall Top
R-D-STRUCT-RETAINING-WALL	10	0	2	Retaining Wall
R-D-STRUCT-RETAINING-WALL-BACK	10	0	2	Retaining Wall Back
R-D-STRUCT-RETAINING-WALL-FACE	10	0	2	Retaining Wall Face
R-D-STRUCT-RETAINING-WALL-INTERFACE	10	0	2	Retaining Wall Interface
R-D-STRUCT-RETAINING-WALL-TOP	10	0	2	Retaining Wall Top
R-D-SUBG-BARRIER	6	0	0	Subgrade - barrier
R-D-SUBG-BRIDGE	6	0	0	Subgrade - bridge
R-D-SUBG-CAPPING	60	0	0	Subgrade - capping
R-D-SUBG-CONCRETE1	6	0	0	Subgrade - concrete 1
R-D-SUBG-CONCRETE2	6	0	0	Subgrade - concrete 2
R-D-SUBG-EARTH-TYPE-A	50	0	0	Subgrade - earthworks type A
R-D-SUBG-EARTH-TYPE-B	54	0	0	Subgrade - earthworks type B
R-D-SUBG-EARTH-TYPE-C	17	0	0	Subgrade - earthworks type C
R-D-SUBG-KERB1	6	0	0	Subgrade - kerb
R-D-SUBG-OTHER1	6	0	0	Subgrade - other
R-D-SUBG-PAVEMENT1	6	0	0	Subgrade - pavement type 1
R-D-SUBG-PAVEMENT2	6	0	0	Subgrade - pavement type 2
R-D-SUBG-PAVEMENT3	6	0	0	Subgrade - pavement type 3
R-D-SUBG-PAVEMENT4	6	0	0	Subgrade - pavement type 4
R-D-SUBG-PAVEMENT5	6	0	0	Subgrade - pavement type 5
R-D-SUBG-PAVEMENT6	6	0	0	Subgrade - pavement type 6
R-D-SUBG-PAVEMENT7	6	0	0	Subgrade - pavement type 7
R-D-SUBG-PAVEMENT8	6	0	0	Subgrade - pavement type 8
R-D-SUBG-PAVEMENT9	6	0	0	Subgrade - pavement type 9
R-D-SUBG-TOPSOIL	6	0	0	Subgrade - topsoil
R-D-SURF	3	0	1	Surface - components, isopach etc
R-D-SURF-1	3	0	1	Surface - components, isopach etc
R-D-SURF-1-BREAKLINE	0	0	0	Surface - Breakline
R-D-SURF-1-CONTOUR-IMPORT	0	0	0	Contour - Import

Name	Colour	Line Style	Line Weight	Description
R-D-SURF-1-CONTOUR-MAJOR	43	0	1	Contour - Major
R-D-SURF-1-CONTOUR-MINOR	37	0	1	Contour - Minor
R-D-SURF-1-CONTOUR-TEXT	0	0	1	Contour - Text
R-D-SURF-1-FLOW	1	0	0	Surface - Flow
R-D-SURF-1-HOLE	10	0	0	Surface - Hole
R-D-SURF-1-ISLAND	0	0	0	Surface - Island
R-D-SURF-1-PERIMETER	10	0	1	Surface - Perimeter
R-D-SURF-1-SPOT	2	0	1	Surface - Spot Features
R-D-SURF-1-TRIANGLES	4	0	1	Surface - Triangles
R-D-SURF-1-VOID	0	0	0	Surface - Void
R-D-SURF-2	3	0	1	Surface - components, isopach etc
R-D-SURF-2-CONTOUR-MAJOR	43	0	1	Contour - Major
R-D-SURF-2-CONTOUR-MINOR	37	0	1	Contour - Minor
R-D-SURF-2-CONTOUR-TEXT	0	0	1	Contour - Text
R-D-SURF-2-PERIMETER	10	0	1	Surface - Perimeter
R-D-SURF-2-TRIANGLES	4	0	1	Surface - Triangles
R-D-SURF-3	3	0	1	Surface - components, isopach etc
R-D-SURF-3-CONTOUR-MAJOR	43	0	1	Contour - Major
R-D-SURF-3-CONTOUR-MINOR	37	0	1	Contour - Minor
R-D-SURF-3-CONTOUR-TEXT	0	0	1	Contour - Text
R-D-SURF-3-PERIMETER	10	0	1	Surface - Perimeter
R-D-SURF-3-TRIANGLES	4	0	1	Surface - Triangles
R-D-SURF-4	3	0	1	Surface - components, isopach etc
R-D-SURF-4-CONTOUR-MAJOR	43	0	1	Contour - Major
R-D-SURF-4-CONTOUR-MINOR	37	0	0	Contour - Minor
R-D-SURF-4-CONTOUR-TEXT	0	0	0	Contour - Text
R-D-SURF-4-PERIMETER	10	0	1	Surface - Perimeter
R-D-SURF-4-TRIANGLES	4	0	1	Surface - Triangles
R-D-SURF-ASPHALT	0	0	0	Surface - Asphalt
R-D-SURF-BREAKLINE	0	0	0	Surface - Breakline
R-D-SURF-CLEARANCE	3	0	1	Surface - components, isopach etc
R-D-SURF-CLEARANCE-CONTOUR-MAJOR	43	0	1	Contour - Major
R-D-SURF-CLEARANCE-CONTOUR-MINOR	37	0	0	Contour - Minor
R-D-SURF-CLEARANCE-CONTOUR-TEXT	0	0	0	Contour - Text
R-D-SURF-CLEARANCE-PERIMETER	10	0	1	Surface - Perimeter
R-D-SURF-CLEARANCE-TRIANGLES	4	0	1	Surface - Triangles

Name	Colour	Line Style	Line Weight	Description
R-D-SURF-CONCRETE	0	0	0	Surface - Concrete
R-D-SURF-CONFLICTS	0	0	2	Surface - Crossing segment violations etc
R-D-SURF-CONTOUR-IMPORT	0	0	0	Contour - Import
R-D-SURF-CONTOUR-MAJOR	0	0	1	Contour - Major
R-D-SURF-CONTOUR-MINOR	16	0	0	Contour - Minor
R-D-SURF-CONTOUR-TEXT	0	0	0	Contour - Text
R-D-SURF-ELEVATIONS	0	0	2	Surface - Elevations
R-D-SURF-FLOW	1	0	0	Surface - Flow
R-D-SURF-GEN-CLIP-BOUNDARY	4	0	0	ORD - Clipping
R-D-SURF-HOLE	10	0	0	Surface - Hole
R-D-SURF-ISLAND	0	0	0	Surface - Island
R-D-SURF-PERIMETER	10	0	1	Surface - Perimeter
R-D-SURF-SPOT	2	0	1	Surface - Spot Features
R-D-SURF-SUBGRADE	0	0	2	Subgrade Surface
R-D-SURF-TEMP-1	49	0	0	Surface - Temporary
R-D-SURF-TEMP-2	50	0	0	Surface - Temporary
R-D-SURF-TEMP-3	51	0	0	Surface - Temporary
R-D-SURF-TEMP-4	52	0	0	Surface - Temporary
R-D-SURF-TEMP-5	53	0	0	Surface - Temporary
R-D-SURF-TERRAIN-TEMPLATE	0	0	0	Terrain Surface Template
R-D-SURF-TRIANGLES	4	0	1	Surface - Triangles
R-D-SURF-TRIANGLES-ENV	0	0	0	Surface - Triangles ENV
R-D-SURF-TRIANGLES-ROAD	0	0	0	Surface - Triangles Road
R-D-SURF-TRIANGLES-SOFFIT	0	0	0	Surface - Triangles Soffit
R-D-SURF-TRIANGLES-SOFFIT1	0	0	0	Surface - Triangles Soffit
R-D-SURF-VOID	0	0	0	Surface - Void
R-D-SURF-WATER	17	0	0	Surface - Water
R-D-VEHICLES	0	0	0	Road - Vehicle Outlines / Shapes
R-D-VOLUME	0	0	0	Volume Information
R-D-VOLUME-TEXT	0	0	0	Volume Text
R-E-BOUNDARY	2	0	2	Boundarie - Existing
R-E-CHECK-TURNING-PATH-1	16	0	1	Turn - Existing Swept Path 1
R-E-CHECK-TURNING-PATH-10	25	0	1	Turn - Existing Swept Path 10
R-E-CHECK-TURNING-PATH-2	17	0	1	Turn - Existing Swept Path 2
R-E-CHECK-TURNING-PATH-3	18	0	1	Turn - Existing Swept Path 3
R-E-CHECK-TURNING-PATH-4	19	0	1	Turn - Existing Swept Path 4
R-E-CHECK-TURNING-PATH-5	20	0	1	Turn - Existing Swept Path 5

Name	Colour	Line Style	Line Weight	Description
R-E-CHECK-TURNING-PATH-6	21	0	1	Turn - Existing Swept Path 6
R-E-CHECK-TURNING-PATH-7	22	0	1	Turn - Existing Swept Path 7
R-E-CHECK-TURNING-PATH-8	23	0	1	Turn - Existing Swept Path 8
R-E-CHECK-TURNING-PATH-9	24	0	1	Turn - Existing Swept Path 9
R-E-COMP-PAVE-EXISTING	9	0	0	Component - Pavement Existing
R-E-EARTHWORK-VERGE	0	0	0	Earthworks - Existing Verge
R-E-KERB-BACK	9	2	1	Kerb - Existing back / channel
R-E-KERB-LIP	9	2	0	Kerb - Existing lip / channel
R-E-PAVE	23	0	1	Pavement - Existing
R-E-PMARK	9	0	1	Pavement Marking - Existing
R-E-PMARK-REMOVE	19	0	1	Pavement Marking - Existing to be removed
R-E-ROAD	9	2	0	Road - Existing Various
R-E-ROAD-SIGNS	9	0	1	Signs - Existing
R-E-ROAD-SIGNS-PARKING-TEXT	9	0	1	Signs - Existing Parking Restrictions
R-E-ROAD-SIGNS-RELOCATED	9	0	1	Signs - Relocated
R-E-ROAD-SIGNS-REMOVED	9	0	1	Signs - Removed
R-E-ROAD-SIGNS-RETAINED	9	0	1	Signs - Retained
R-E-ROAD-SIGNS-TEXT	9	0	1	Signs - Existing Text
R-E-SURF	9	0	0	Surface - Existing
R-E-SURF-BREAKLINE	9	0	0	Surface - Existing Breakline
R-E-SURF-CONTOUR-IMPORT	9	0	0	Contour Existing - Import
R-E-SURF-CONTOUR-MAJOR	43	0	1	Contour Existing - Major
R-E-SURF-CONTOUR-MINOR	37	0	0	Contour Existing- Minor
R-E-SURF-CONTOUR-TEXT	0	0	0	Contour Existing - Text
R-E-SURF-FLOW	9	0	0	Surface - Existing Flow
R-E-SURF-HOLE	4	0	0	Surface - Existing Hole
R-E-SURF-ISLAND	9	0	0	Surface - Existing Island
R-E-SURF-PERIMETER	9	0	0	Surface - Existing Perimeter
R-E-SURF-SPOT	9	0	0	Surface - Existing Spot
R-E-SURF-SUBSTRATA1	9	0	0	Surface - Existing Substrata
R-E-SURF-TRIANGLES	9	0	0	Surface - Existing Triangles
R-E-SURF-VOID	9	0	0	Surface - Existing Void
R-E-TREE-REMOVED	3	0	1	General - Removed Tree
R-X-D-PROFILE-BROWN	147	0	0	ORD Working data
R-X-D-PROFILE-CYAN	8	0	0	ORD Working data
R-X-D-PROFILE-EXTENSION	1	2	0	ORD Working data
R-X-D-PROFILE-GREEN	9	0	0	ORD Working data

Name	Colour	Line Style	Line Weight	Description
R-X-D-PROFILE-INTERSECTION	1	0	0	ORD Working data
R-X-D-PROFILE-MAGENTA	10	0	0	ORD Working data
R-X-D-PROFILE-OP01	1	4	0	ORD Working data
R-X-D-PROFILE-OP02	2	4	0	ORD Working data
R-X-D-PROFILE-OP03	3	4	0	ORD Working data
R-X-D-PROFILE-OP04	4	4	0	ORD Working data
R-X-D-PROFILE-OP05	5	4	0	ORD Working data
R-X-D-PROFILE-ORANGE	6	0	0	ORD Working data
R-X-D-PROFILE-PALE-BLUE	17	0	0	ORD Working data
R-X-D-PROFILE-RED	3	0	0	ORD Working data
R-X-D-PROFILE-TIE-IN	3	2	0	ORD Working data
R-X-D-PROFILE-YELLOW	4	0	0	ORD Working data
R-X-SURF-MESH-BOTTOM	9	0	0	Surface - Terrain Bottom
R-X-SURF-MESH-TOP	9	0	0	Surface - Terrain Top
R-X-TEXT-SHEET	0	0	0	Sheet
R-X-TEXT-SHEET-BORDER	0	0	0	Sheet - Border
R-X-TEXT-SHEET-DRAFT	14	0	0	Sheet - Draft
R-X-TEXT-SHEET-LINES	0	0	0	Sheet - Line Work

Appendix Q12 – Road Drainage Levels

Name	Colour	Line Style	Line Weight	Description
D-D-BASIN-RETARDING	0	0	1	Drainage - Retarding Basin
D-D-BASIN-SEDIMENT	0	0	1	Drainage - Sedimentation Basin
D-D-BASIN-WETLAND	0	0	1	Drainage - Wetlands
D-D-BEACHING	252	0	0	Drainage - Rock Beaching
D-D-CATCH-DRAIN-BEACH	0	catch drain beached	1	Drainage - Catch drain beached
D-D-CATCH-DRAIN-GRASS	0	catch drain grassed	1	Drainage - Catch drain grassed
D-D-CATCHMENT	0	3	3	Drainage - Catchment Areas
D-D-CATCH-THATCH	0	catch drain thatched	1	Drainage - Catch drain thatched
D-D-CD2-EDGE	0	0	0	Drainage - CD2 Channel Edge
D-D-CD2-INV	0	0	0	Drainage - CD2 Channel Invert
D-D-CONCRETE-APRON	0	0	2	Drainage - Concrete Apron
D-D-DRAINAGE	0	0	0	Drainage features - various
D-D-ENDWALL	0	0	0	Drainage - End walls - various
D-D-INVERT	0	0	1	Drainage - Invert of Pit or Pipe
D-D-MEDIAN-DRAIN	0	0	0	Drainage - Median Drain
D-D-PIPE	0	VT-300mm PIPE	0	Drainage - Pipes Various
D-D-PIPE-100	0	VT-100mm PIPE	0	Drainage - Pipes Various 150
D-D-PIPE-1050	0	VT-1050mm PIPE	0	Drainage - Pipes Various 1050
D-D-PIPE-1200	0	VT-1200mm PIPE	0	Drainage - Pipes Various 1200
D-D-PIPE-1350	0	VT-1350mm PIPE	0	Drainage - Pipes Various 1350
D-D-PIPE-150	0	VT-150mm PIPE	0	Drainage - Pipes Various 150
D-D-PIPE-1500	0	VT-1500mm PIPE	0	Drainage - Pipes Various 1500
D-D-PIPE-1650	0	VT-1650mm PIPE	0	Drainage - Pipes Various 1650
D-D-PIPE-1800	0	VT-1800mm PIPE	0	Drainage - Pipes Various 1800
D-D-PIPE-225	0	VT-225mm PIPE	0	Drainage - Pipes Various 225
D-D-PIPE-300	0	VT-300mm PIPE	0	Drainage - Pipes Various 300
D-D-PIPE-375	0	VT-375mm PIPE	0	Drainage - Pipes Various 375
D-D-PIPE-450	0	VT-450mm PIPE	0	Drainage - Pipes Various 450
D-D-PIPE-525	0	VT-525mm PIPE	0	Drainage - Pipes Various 525
D-D-PIPE-600	0	VT-600mm PIPE	0	Drainage - Pipes Various 600
D-D-PIPE-675	0	VT-675mm PIPE	0	Drainage - Pipes Various 675
D-D-PIPE-750	0	VT-750mm PIPE	0	Drainage - Pipes Various 750
D-D-PIPE-825	0	VT-825mm PIPE	0	Drainage - Pipes Various 825
D-D-PIPE-900	0	VT-900mm PIPE	0	Drainage - Pipes Various 900
D-D-PIPE-GRATED-DRAIN	42	VT-300mm PIPE	0	Drainage - Grated drain
D-D-PIPE-HDPE-100	1	VT-100mm PIPE	0	Drainage - Pipes HDPE 100

Name	Colour	Line Style	Line Weight	Description
D-D-PIPE-HDPE-1050	1	VT-1050mm PIPE	0	Drainage - Pipes HDPE 1050
D-D-PIPE-HDPE-1200	1	VT-1200mm PIPE	0	Drainage - Pipes HDPE 1200
D-D-PIPE-HDPE-1350	1	VT-1350mm PIPE	0	Drainage - Pipes HDPE 1350
D-D-PIPE-HDPE-150	1	VT-150mm PIPE	0	Drainage - Pipes HDPE 150
D-D-PIPE-HDPE-1500	1	VT-1500mm PIPE	0	Drainage - Pipes HDPE 1500
D-D-PIPE-HDPE-1650	1	VT-1650mm PIPE	0	Drainage - Pipes HDPE 1650
D-D-PIPE-HDPE-1800	1	VT-1800mm PIPE	0	Drainage - Pipes HDPE 1800
D-D-PIPE-HDPE-200	1	VT-200mm PIPE	0	Drainage - Pipes HDPE 200
D-D-PIPE-HDPE-250	1	VT-250mm PIPE	0	Drainage - Pipes HDPE 250
D-D-PIPE-HDPE-300	1	VT-300mm PIPE	0	Drainage - Pipes HDPE 300
D-D-PIPE-HDPE-375	1	VT-375mm PIPE	0	Drainage - Pipes HDPE 375
D-D-PIPE-HDPE-450	1	VT-450mm PIPE	0	Drainage - Pipes HDPE 450
D-D-PIPE-HDPE-525	1	VT-525mm PIPE	0	Drainage - Pipes HDPE 525
D-D-PIPE-HDPE-600	1	VT-600mm PIPE	0	Drainage - Pipes HDPE 600
D-D-PIPE-HDPE-675	1	VT-675mm PIPE	0	Drainage - Pipes HDPE 675
D-D-PIPE-HDPE-750	1	VT-750mm PIPE	0	Drainage - Pipes HDPE 750
D-D-PIPE-HDPE-825	1	VT-825mm PIPE	0	Drainage - Pipes HDPE 825
D-D-PIPE-HDPE-900	1	VT-900mm PIPE	0	Drainage - Pipes HDPE 900
D-D-PIPE-RCP-1050	0	VT-1050mm PIPE	0	Drainage - Pipes RCP 1200
D-D-PIPE-RCP-1200	0	VT-1200mm PIPE	0	Drainage - Pipes RCP 1350
D-D-PIPE-RCP-1350	0	VT-1350mm PIPE	0	Drainage - Pipes RCP 150
D-D-PIPE-RCP-150	0	VT-225mm PIPE	0	Drainage - Pipes RCP 1500
D-D-PIPE-RCP-1500	0	VT-1500mm PIPE	0	Drainage - Pipes RCP 1650
D-D-PIPE-RCP-1650	0	VT-1650mm PIPE	0	Drainage - Pipes RCP 1800
D-D-PIPE-RCP-1800	0	VT-1800mm PIPE	0	Drainage - Pipes RCP 200
D-D-PIPE-RCP-225	0	VT-225mm PIPE	0	Drainage - Pipes RCP 250
D-D-PIPE-RCP-300	0	VT-300mm PIPE	0	Drainage - Pipes RCP 300
D-D-PIPE-RCP-375	0	VT-375mm PIPE	0	Drainage - Pipes RCP 375
D-D-PIPE-RCP-450	0	VT-450mm PIPE	0	Drainage - Pipes RCP 450
D-D-PIPE-RCP-525	0	VT-525mm PIPE	0	Drainage - Pipes RCP 525
D-D-PIPE-RCP-600	0	VT-600mm PIPE	0	Drainage - Pipes RCP 600
D-D-PIPE-RCP-675	0	VT-675mm PIPE	0	Drainage - Pipes RCP 675
D-D-PIPE-RCP-750	0	VT-750mm PIPE	0	Drainage - Pipes RCP 750
D-D-PIPE-RCP-825	0	VT-825mm PIPE	0	Drainage - Pipes RCP 825
D-D-PIPE-RCP-900	0	VT-900mm PIPE	0	Drainage - Pipes RCP 900
D-D-PIPE-STRUCTURE	5	Drainage Pipe 1m	0	Drainage - Pipes Various - On Structure
D-D-PIPE-TEXT	0	0	0	Drainage - Pipe Text
D-D-PIPE-uPVC	45	VT-300mm PIPE	0	Drainage - Pipes uPVC

Name	Colour	Line Style	Line Weight	Description
D-D-PIPE-uPVC-150	45	VT-150mm PIPE	0	Drainage - Pipes uPV 150
D-D-PIPE-uPVC-1500	45	VT-1500mm PIPE	0	Drainage - Pipes uPV 1500
D-D-PIPE-uPVC-200	45	VT-200mm PIPE	0	Drainage - Pipes uPV 200
D-D-PIPE-uPVC-250	45	VT-250mm PIPE	0	Drainage - Pipes uPV 250
D-D-PIPE-uPVC-375	45	VT-375mm PIPE	0	Drainage - Pipes uPV 320
D-D-PIPE-uPVC-400	45	VT-400mm PIPE	0	Drainage - Pipes uPV 400
D-D-PIPE-uPVC-500	45	VT-500mm PIPE	0	Drainage - Pipes uPV 500
D-D-PIPE-uPVC-600	45	VT-600mm PIPE	0	Drainage - Pipes uPV 600
D-D-PIT	0	0	1	Drainage - Pits - Various
D-D-PIT-GRATED	0	0	1	Drainage - Pits - Grated pit
D-D-PIT-JUNCTION	0	0	1	Drainage - Pits - Junction pit
D-D-PIT-LABEL	0	0	1	Drainage - Pits - label / set out points
D-D-PIT-SIDE-ENTRY	0	0	1	Drainage - Pits - Side entry pit
D-D-PIT-STRUCTURE	5	0	1	Drainage - Pits - On structure
D-D-SSD	17	0	1	Drainage - SSD - General
D-D-SSD-CORRUGATED	17	0	1	Drainage - SSD - Corrugated pipe
D-D-SSD-FLUSHOUT-RISER	17	0	1	Drainage - SSD - Flushout riser
D-D-SSD-OUTLET	17	0	1	Drainage - SSD - Pit
D-D-SSD-PIT	17	0	1	Drainage - SSD - Outlet
D-D-SSD-SMOOTH	17	0	1	Drainage - SSD - Smooth pipe
D-D-SSD-TEXT	17	0	1	Drainage - SSD - Text
D-D-SSD-TRANSVERSE	17	0	1	Drainage - SSD - Transverse corrugated pipe
D-D-SSD-TRANSVERSE-SLOT	17	trans drain slotted	1	Drainage - SSD - Transverse slotted pipe
D-D-SSD-TRANSVERSE-SMOOTH	17	0	1	Drainage - SSD - Transverse smooth pipe
D-D-TABLE-DRAIN	0	0	0	Drainage - Table Drain
D-D-TEXT	0	0	0	Drainage - Text various
D-D-TEXT-FLOW	0	0	0	Drainage - Flow Text
D-D-TOP-WATER-LEVEL	0	4	1	Drainage - Top water level
D-D-V-DRAIN	0	0	0	Drainage - V Drain
D-D-WSRD-ELEMENT	0	0	1	Drainage Water Sensitive Road Design
D-E-PIPE	3	Drainage line	1	Drainage - Existing
D-E-PIPE-XXXX	3	Drainage Pipe 1m	1	Drainage - Existing [enter additional type]

Appendix Q13 – Intelligent Transport Systems Levels

Name	Colour	Line Style	Line Weight	Description
H-D-CCTV-CABINET	0	0	1	ITS - CCTV Cabinet
H-D-CCTV-CAMERA	0	0	1	ITS - CCTV Camera
H-D-CCTV-POLE	0	0	1	ITS - CCTV Pole
H-D-COMMS-PIT	0	0	1	ITS - Communications Pit
H-D-CONDUIT-2-100	0	2	1	ITS - Conduit 2 x 100mm
H-D-CONDUIT-3-100	0	2	1	ITS - Conduit 3 x 100mm
H-D-CONDUIT-4-100	0	2	1	ITS - Conduit 4 x 100mm
H-D-CONDUIT-COMMS-1-100	0	2	1	ITS - Communication conduit 1 x 100mm
H-D-CONDUIT-ELEC-1-100	0	2	1	ITS - Electrical conduit 1 x 100mm
H-D-DISTRIBUTION-CABINET-TYPE1	0	0	1	ITS - Cabinet Type1
H-D-DISTRIBUTION-CABINET-TYPE2	0	0	1	ITS - Cabinet Type2
H-D-DISTRIBUTION-CABINET-TYPE3	0	0	1	ITS - Cabinet Type3
H-D-ELEC-PIT	0	0	1	ITS - Electricity Pit
H-D-FIELD-CABINET	0	0	1	ITS - FIELD Cabinet
H-D-LIGHTING-BRACKET-DOUBLE	0	0	1	Lighting - Bracket Double
H-D-LIGHTING-BRACKET-SINGLE	0	0	1	Lighting - Bracket Single
H-D-LIGHTING-CONDUIT-1-100	0	2	1	Lighting - Conduit 1 x 100mm
H-D-LIGHTING-CONDUIT-1-32	0	2	1	Lighting - Conduit 1 x 32mm
H-D-LIGHTING-CONDUIT-1-50	0	2	1	Lighting - Conduit 1 x 50mm
H-D-LIGHTING-CONDUIT-1-63	0	2	1	Lighting - Conduit 1 x 63mm
H-D-LIGHTING-CONDUIT-2-100	0	2	1	Lighting - Conduit 2 x 100mm
H-D-LIGHTING-ISOLUX-1	13	0	3	Lighting 1 Lux
H-D-LIGHTING-ISOLUX-3-75	1	0	3	Lighting 3.75 Lux
H-D-LIGHTING-ISOLUX-7-5	3	0	3	Lighting 7.5 Lux
H-D-LIGHTING-PIT	0	0	1	Lighting - Pit
H-D-LIGHTING-POLE	0	0	1	Lighting - Pole
H-D-LIGHTING-POLE-IA	0	0	1	Lighting - Pole IA
H-D-LIGHTING-POLE-RSLP	0	0	1	Lighting - Pole RSLP
H-D-LIGHTING-POLE-SB	0	0	1	Lighting - Pole SB
H-D-LIGHTING-POLE-XXXX	0	0	1	Lighting - Pole [enter additional type]
H-D-LIGHTING-XXXXX	0	0	1	Lighting - [enter additional type]
H-D-TRAFFIC	0	0	1	Traffic Various
H-D-TRAFFIC-CAMERA	0	0	1	Traffic camera
H-D-TRAFFIC-CAMERA-DETECTION	0	0	1	Traffic camera detection
H-D-TRAFFIC-CAMERA-FLASH	0	0	1	Traffic camera flash unit
H-D-TRAFFIC-CONDUIT	0	0	1	Traffic Signal Conduits

Name	Colour	Line Style	Line Weight	Description
H-D-TRAFFIC-CONDUIT-1-100	0	2	1	Traffic conduit 1 x 100mm
H-D-TRAFFIC-CONDUIT-1-20	0	2	1	Traffic conduit 1 x 20mm
H-D-TRAFFIC-CONDUIT-1-50	0	2	1	Traffic conduit 1 x 50mm
H-D-TRAFFIC-CONDUIT-2-100	0	2	1	Traffic conduit 2 x 100mm
H-D-TRAFFIC-CONDUIT-3-100	0	2	1	Traffic conduit 3 x 100mm
H-D-TRAFFIC-CONDUIT-4-100	0	2	1	Traffic conduit 4 x 100mm
H-D-TRAFFIC-CONDUIT-XXXXX	0	2	1	Traffic conduit [enter additonal type]
H-D-TRAFFIC-DETECTION	0	0	1	Traffic Detection Devices
H-D-TRAFFIC-DETECTION-LOOP	0	0	1	Traffic Detector pad/loop
H-D-TRAFFIC-JOINT-USE-POLE	0	0	1	Traffic joint use pole
H-D-TRAFFIC-JUMA	0	0	1	Traffic Joint use mast arm
H-D-TRAFFIC-JUP	0	0	1	Traffic Joint use pole
H-D-TRAFFIC-LANTERN-3-ASPECT	0	0	1	Traffic Lantern 3 Aspect
H-D-TRAFFIC-LANTERN-BIKE	0	0	1	Traffic Lantern Bike
H-D-TRAFFIC-LANTERN-H	0	0	1	Traffic Lantern H
H-D-TRAFFIC-LANTERN-J	0	0	1	Traffic Lantern J
H-D-TRAFFIC-LANTERN-K	0	0	1	Traffic Lantern K
H-D-TRAFFIC-LANTERN-L	0	0	1	Traffic Lantern L
H-D-TRAFFIC-LANTERN-M	0	0	1	Traffic Lantern M
H-D-TRAFFIC-LANTERN-N	0	0	1	Traffic Lantern N
H-D-TRAFFIC-LANTERN-P	0	0	1	Traffic Lantern P
H-D-TRAFFIC-LANTERN-PED	0	0	1	Traffic Lantern Pedestrian
H-D-TRAFFIC-LANTERN-PED-BIKE	0	0	1	Traffic Lantern Pedes and Bike
H-D-TRAFFIC-LANTERN-Q	0	0	1	Traffic Lantern Q
H-D-TRAFFIC-LANTERN-R	0	0	1	Traffic Lantern R
H-D-TRAFFIC-LANTERN-S	0	0	1	Traffic Lantern S
H-D-TRAFFIC-LANTERN-T	0	0	1	Traffic Lantern T
H-D-TRAFFIC-LANTERN-U	0	0	1	Traffic Lantern U
H-D-TRAFFIC-LANTERN-W	0	0	1	Traffic Lantern W
H-D-TRAFFIC-LANTERN-X	0	0	1	Traffic Lantern X
H-D-TRAFFIC-LANTERN-XXXXX	0	0	1	Traffic Lantern [enter additional type]
H-D-TRAFFIC-LANTERN-Y	0	0	1	Traffic Lantern Y
H-D-TRAFFIC-LANTERN-Z	0	0	1	Traffic Lantern Z
H-D-TRAFFIC-PEDESTAL	0	0	1	Traffic Signal Pedestals
H-D-TRAFFIC-PEDESTAL-2A	0	0	1	Traffic pedestral 2A
H-D-TRAFFIC-PEDESTAL-2B	0	0	1	Traffic pedestral 2B
H-D-TRAFFIC-PEDESTAL-MA	0	0	1	Traffic pedestral mast arm
H-D-TRAFFIC-PEDESTAL-TYPE-3	0	0	1	Traffic pedestral Type 3

Name	Colour	Line Style	Line Weight	Description
H-D-TRAFFIC-PEDESTAL-XXXXX	0	0	1	Traffic pedestal [enter additonal type]
H-D-TRAFFIC-PHASING	0	0	1	Traffic Light Phasing Diagrams
H-D-TRAFFIC-PIT	0	0	1	Traffic Pits - various
H-D-TRAFFIC-PIT-600	0	0	1	Traffic pit 600dia
H-D-TRAFFIC-PIT-750	0	0	1	Traffic pit 750dia
H-D-TRAFFIC-PIT-DETECTOR	0	0	1	Traffic pit detector
H-D-TRAFFIC-PIT-P2	0	0	1	Traffic pit P2
H-D-TRAFFIC-PIT-XXXXX	0	0	1	Traffic pit [enter additonal type]
H-D-TRAFFIC-PUSH-BUTTON	0	0	1	Traffic signal push button
H-D-TRAFFIC-SIGNAL	0	0	1	Traffic signal various
H-D-TRAFFIC-SIGNAL-CONTROLLER	0	0	1	Traffic signal controller
H-D-TRAFFIC-SIGNS-FACE	0	0	1	Traffic sign face
H-D-TRAFFIC-SIGNS-TEXT	0	0	0	Traffic sign text
H-D-TRAFFIC-TEXT	0	0	0	Traffic text
H-D-TRAFFIC-UTILITY-ELEC-DIST-CABINET-TYPE1	0	0	1	Traffic electricity distribution cabinet type 1
H-D-TRAFFIC-UTILITY-ELEC-DIST-CABINET-TYPE2	0	0	1	Traffic electricity distribution cabinet type 2
H-D-TRAFFIC-UTILITY-ELEC-DIST-CABINET-TYPE3	0	0	1	Traffic electricity distribution cabinet type 3
H-D-XXXXXX	0	0	1	ITS - [enter additonal type]
H-E-LIGHTING	8	0	1	Lighting - Existing
H-E-MISC	8	0	1	ITS - Existing Miscellaneous
H-E-TRAFFIC-EXISTING	8	0	1	Traffic existing - various
H-E-TRAFFIC-SIGNS-EXISTING	8	0	1	Traffic sign exsiting

Appendix Q14 – Geotechnical Levels

Placeholder Appendix section for future update.

Level	Colour	Line Style	Line Weight	Description
J-D-xxxx-xxxx	0	0	0	Geotechnical - Design
J-E-xxxx-xxxx	0	0	0	Geotechnical - Existing
J-LS-xxxx-xxxx	0	0	0	Geotechnical - Longitudinal Sections
J-XS-xxxx-xxxx	0	0	0	Geotechnical - Cross Sections
J-X-xxxx-xxxx	0	0	0	Geotechnical - General

Appendix Q15 – Survey Levels

Name	Colour	Line Style	Line Weight
V-D-CADASTRAL-ACTION-ACQUIRE-LINE	22	0	0
V-D-CADASTRAL-ACTION-DECLARE-LINE	38	0	0
V-D-CADASTRAL-ACTION-DECLARE-OVER-ACQUIRED-LINE	21	0	0
V-D-CADASTRAL-ACTION-DECLARE-OVER-UNACQUIRED-LINE	13	0	0
V-D-CADASTRAL-ACTION-DISCONTINUE-LINE	17	0	2
V-D-CADASTRAL-ACTION-DISPOSE-LINE	22	0	2
V-D-CADASTRAL-ACTION-GAIN-APPROVAL-LINE	22	0	0
V-D-CADASTRAL-ACTION-OFFER-TO-PURCHASE-LINE	22	0	2
V-D-CADASTRAL-ACTION-REVOKE-CROWN-RESERVE-LINE	22	0	0
V-D-CADASTRAL-ACTION-REVOKE-LINE	33	0	0
V-D-CADASTRAL-ACTION-TEMPORARILY-OCCUPY-LINE	23	0	0
V-D-CADASTRAL-ACTION-TRANSFER-DECLARE-LINE	44	0	2
V-D-CADASTRAL-ACTION-TRANSFER-LINE	22	0	0
V-D-CADASTRAL-CONNECTION-ROAD-ARROW	3	0	0
V-D-CADASTRAL-CONNECTION-ROAD-LINE	5	2	0
V-D-CADASTRAL-CONNECTION-ROAD-TEXT	3	0	0
V-D-CADASTRAL-CONTROL-TITLE-BOUNDARY-LINE	2	2	2
V-D-CADASTRAL-EASEMENT-BOUNDARY-LINE	5	2	0
V-D-CADASTRAL-EASEMENT-DESCRIPTION-ARROW	3	0	0
V-D-CADASTRAL-EASEMENT-DESCRIPTION-TEXT	3	0	0
V-D-CADASTRAL-EASEMENT-DIMENSION-ARROW	3	0	0
V-D-CADASTRAL-EASEMENT-DIMENSION-TEXT	3	0	0
V-D-CADASTRAL-LEASE-BOUNDARY-ARROW	3	0	0
V-D-CADASTRAL-LEASE-BOUNDARY-LINE	5	2	2
V-D-CADASTRAL-LEASE-DIMENSION-TEXT	4	0	0
V-D-CADASTRAL-NOTATION-1-2-TEXT	6	0	0
V-D-CADASTRAL-NOTATION-1-8-TEXT	3	0	0
V-D-CADASTRAL-NOTATION-2-5-TEXT	4	0	0
V-D-CADASTRAL-NOTATION-3-5-TEXT	2	0	0
V-D-CADASTRAL-NOTATION-5-0-TEXT	5	0	0
V-D-CADASTRAL-NOTATION-7-0-TEXT	1	0	0
V-D-CADASTRAL-PUBLIC-ACQUISITION-OVERLAY-LINE	5	0	2
V-D-CADASTRAL-PUBLIC-ACQUISITION-OVERLAY-TEXT	3	0	0
V-D-CADASTRAL-ROAD-ACCESS-LINE	0	0	0
V-D-CADASTRAL-ROAD-FREEWAY-LINE	1	0	3
V-D-CADASTRAL-ROAD-FREEWAY-TEXT	4	0	0
V-D-CADASTRAL-TEMPORARY-OCCUPIED-LAND-ARROW	3	0	0

Name	Colour	Line Style	Line Weight
V-D-CADASTRAL-TEMPORARY-OCCUPIED-LAND-LINE	5	Temporary Occupied Land Boundary	2
V-D-CADASTRAL-TEMPORARY-OCCUPIED-LAND-TEXT	4	0	0
V-D-CADASTRAL-TITLE-BOUNDARY-LINE	5	0	2
V-D-CADASTRAL-TITLE-BOUNDARY-POINT	4	0	0
V-D-CADASTRAL-TITLE-CORNER-NUMBER-TEXT	0	0	0
V-D-CADASTRAL-TITLE-DESCRIPTION-TEXT	4	0	0
V-D-CADASTRAL-TITLE-DIMENSION-ARROW	3	0	0
V-D-CADASTRAL-TITLE-DIMENSION-TEXT	4	0	0
V-D-CADASTRAL-TITLE-STANDARD-PARCEL-ID-TEXT	2	0	0
V-D-CADASTRAL-TITLE-STRUCTURE-NON-BOUNDARY-LINE	3	0	0
V-D-CADASTRAL-TITLE-SURROUND-LINE	5	2	0
V-D-CONTROLPLAN-TITLE-BOUNDARY-LINE	2	2	2
V-D-GAZETTE-DECLARE-ARTERIAL-ROAD-FILL	0	0	0
V-D-GAZETTE-DECLARE-ARTERIAL-ROAD-SYMBOLISED-FILL	0	0	0
V-D-GAZETTE-DECLARE-FREEWAY-FILL	0	0	0
V-D-GAZETTE-DECLARE-FREEWAY-SYMBOLISED-FILL	0	0	0
V-D-GAZETTE-DECLARE-MUNICIPAL-ROAD-FILL	0	0	0
V-D-GAZETTE-DECLARE-MUNICIPAL-ROAD-SYMBOLISED-FILL	0	0	0
V-D-GAZETTE-DECLARE-NON-ARTERIAL-STATE-ROAD-FILL	0	0	0
V-D-GAZETTE-DECLARE-NON-ARTERIAL-STATE-ROAD-SYMBOLISED-FILL	0	0	0
V-D-GAZETTE-DESIGNATE-ANCILLARY-AREA-FILL	0	0	0
V-D-GAZETTE-DESIGNATE-ANCILLARY-AREA-SYMBOLISED-FILL	0	0	0
V-D-GAZETTE-DESIGNATE-ROAD-PROJECT-ACTIVE-FILL	0	0	0
V-D-GAZETTE-DESIGNATE-ROAD-PROJECT-ACTIVE-SYMBOLISED-FILL	0	0	0
V-D-GAZETTE-DESIGNATE-ROAD-PROJECT-EXPIRED-FILL	0	0	0
V-D-GAZETTE-DESIGNATE-ROAD-PROJECT-EXPIRED-SYMBOLISED-FILL	0	0	0
V-D-GAZETTE-DESIGNATE-ROAD-PROJECT-FILL	0	0	0
V-D-GAZETTE-DESIGNATE-ROAD-PROJECT-SYMBOLISED-FILL	0	0	0
V-D-GAZETTE-DISCONTINUE-MUNICIPAL-ROAD-FILL	0	0	0
V-D-GAZETTE-DISCONTINUE-MUNICIPAL-ROAD-SYMBOLISED-FILL	0	0	0
V-D-GAZETTE-PUBLICATION-BORDER	0	0	0
V-D-GAZETTE-RENAME-ARTERIAL-ROAD-FILL	0	0	0
V-D-GAZETTE-RENAME-ARTERIAL-ROAD-SYMBOLISED-FILL	0	0	0
V-D-GAZETTE-RENAME-FREEWAY-FILL	0	0	0
V-D-GAZETTE-RENAME-FREEWAY-SYMBOLISED-FILL	0	0	0
V-D-GAZETTE-RENAME-NON-ARTERIAL-STATE-ROAD-FILL	0	0	0
V-D-GAZETTE-RENAME-NON-ARTERIAL-STATE-ROAD-SYMBOLISED-FILL	0	0	0

Name	Colour	Line Style	Line Weight
V-D-GAZETTE-REVOKE-ARTERIAL-ROAD-FILL	0	0	0
V-D-GAZETTE-REVOKE-ARTERIAL-ROAD-SYMBOLISED-FILL	0	0	0
V-D-GAZETTE-REVOKE-DISCONTINUE-ARTERIAL-ROAD-FILL	0	0	0
V-D-GAZETTE-REVOKE-DISCONTINUE-ARTERIAL-ROAD-SYMBOLISED-FILL	0	0	0
V-D-GAZETTE-REVOKE-DISCONTINUE-FREEWAY-FILL	0	0	0
V-D-GAZETTE-REVOKE-DISCONTINUE-FREEWAY-SYMBOLISED-FILL	0	0	0
V-D-GAZETTE-REVOKE-DISCONTINUE-MUNICIPAL-ROAD-FILL	0	0	0
V-D-GAZETTE-REVOKE-DISCONTINUE-MUNICIPAL-ROAD-SYMBOLISED-FILL	0	0	0
V-D-GAZETTE-REVOKE-DISCONTINUE-NON-ARTERIAL-STATE-ROAD-FILL	0	0	0
V-D-GAZETTE-REVOKE-DISCONTINUE-NON-ARTERIAL-STATE-ROAD-SYMBOLISED-FILL	0	0	0
V-D-GAZETTE-REVOKE-FREEWAY-FILL	0	0	0
V-D-GAZETTE-REVOKE-FREEWAY-SYMBOLISED-FILL	0	0	0
V-D-GAZETTE-REVOKE-MUNICIPAL-ROAD-FILL	0	0	0
V-D-GAZETTE-REVOKE-MUNICIPAL-ROAD-SYMBOLISED-FILL	0	0	0
V-D-GAZETTE-REVOKE-NON-ARTERIAL-STATE-ROAD-FILL	0	0	0
V-D-GAZETTE-REVOKE-NON-ARTERIAL-STATE-ROAD-SYMBOLISED-FILL	0	0	0
V-D-LOCALITY-ROAD-ARTERIAL-LINE	2	2	0
V-D-LOCALITY-ROAD-FREEWAY-LINE	1	2	2
V-D-TITLE-BOUNDARY-BUILDING-LINE	5	0	2
V-D-TITLE-BOUNDARY-LINE	0	0	0
V-D-TITLE-EASEMENT-DESCRIPTION-TEXT	3	0	0
V-D-TITLE-STANDARD-PARCEL-ID-AREA-TEXT	4	0	0
V-D-TITLE-STANDARD-PARCEL-ID-LOT-TEXT	4	0	0
V-D-TITLE-STANDARD-PARCEL-ID-RESERVE-OR-ROAD-TEXT	4	0	0
V-E-CADASTRAL-COMPUTATIONS-POINT-DESCRIPTION-TEXT	3	0	0
V-E-CADASTRAL-COMPUTATIONS-POINT-NUMBER-TEXT	0	0	0
V-E-CADASTRAL-COMPUTATIONS-TITLE-LINE	2	0	0
V-E-CADASTRAL-COMPUTATIONS-TITLE-POINT	4	0	0
V-E-CADASTRAL-COMPUTATIONS-TITLE-POINT-DESCRIPTION-TEXT	6	0	0
V-E-CADASTRAL-COMPUTATIONS-TITLE-POINT-NUMBER-TEXT	6	0	0
V-E-CADASTRAL-COMPUTATIONS-TRAVERSE-LINE	0	6	0
V-E-CADASTRAL-COMPUTATIONS-TRAVERSE-TEXT	0	0	0
V-E-CADASTRAL-CONNECTION-IP-POINT	0	1	0
V-E-CADASTRAL-CONNECTION-IP-TEXT	0	0	0
V-E-CADASTRAL-CONNECTION-MARK-LINE	3	1	0
V-E-CADASTRAL-CONNECTION-MARK-TEXT	3	0	0
V-E-CADASTRAL-CONNECTION-ROAD-ARROW	3	0	0
V-E-CADASTRAL-CONNECTION-ROAD-LINE	3	2	0

Name	Colour	Line Style	Line Weight
V-E-CADASTRAL-CONNECTION-ROAD-TEXT	3	0	0
V-E-CADASTRAL-CONTROL-CHAINAGE-RUNNING-TEXT	0	0	0
V-E-CADASTRAL-CONTROL-CHAINAGE-START-TEXT	0	0	0
V-E-CADASTRAL-CONTROL-ETCH-POINT	3	0	0
V-E-CADASTRAL-CONTROL-GNSS-POINT	3	0	0
V-E-CADASTRAL-CONTROL-MARK-DESCRIPTION-TEXT	0	0	0
V-E-CADASTRAL-CONTROL-MARK-POINT	0	0	0
V-E-CADASTRAL-CONTROL-PCM-POINT	0	0	0
V-E-CADASTRAL-CONTROL-PM-POINT	0	0	0
V-E-CADASTRAL-CONTROL-RADIATION-LINE	0	2	0
V-E-CADASTRAL-CONTROL-RADIATION-TEXT	0	0	0
V-E-CADASTRAL-CONTROL-RM-POINT	0	0	0
V-E-CADASTRAL-CONTROL-STATION-POINT	0	0	0
V-E-CADASTRAL-CONTROL-TITLE-BOUNDARY-LINE	3	0	0
V-E-CADASTRAL-CONTROL-TRAVERSE-LINE	0	6	0
V-E-CADASTRAL-CONTROL-TRAVERSE-TEXT	0	0	0
V-E-CADASTRAL-CROWN-ALLOTMENT-LINE	2	3	0
V-E-CADASTRAL-CROWN-ALLOTMENT-TEXT	2	0	0
V-E-CADASTRAL-CROWN-COUNTY-LINE	5	County Boundary	0
V-E-CADASTRAL-CROWN-COUNTY-TEXT	3	0	0
V-E-CADASTRAL-CROWN-NATIONAL-PARK-LINE	4	National Park Boundary	0
V-E-CADASTRAL-CROWN-NATIONAL-PARK-TEXT	4	0	0
V-E-CADASTRAL-CROWN-PARISH-LINE	5	Parish Boundary	0
V-E-CADASTRAL-CROWN-PARISH-TEXT	2	0	0
V-E-CADASTRAL-CROWN-RESERVED-FOREST-LINE	4	Forest Boundary	0
V-E-CADASTRAL-CROWN-RESERVED-FOREST-TEXT	4	0	0
V-E-CADASTRAL-CROWN-RESERVE-LINE	4	2	0
V-E-CADASTRAL-CROWN-RESERVE-TEXT	4	0	0
V-E-CADASTRAL-CROWN-SECTION-LINE	4	0	0
V-E-CADASTRAL-CROWN-SECTION-TEXT	4	0	0
V-E-CADASTRAL-CROWN-STATE-LINE	5	State Boundary	0
V-E-CADASTRAL-CROWN-STATE-TEXT	4	0	0
V-E-CADASTRAL-CROWN-TOWNSHIP-LINE	5	Township Boundary	0
V-E-CADASTRAL-CROWN-TOWNSHIP-TEXT	4	0	0

Name	Colour	Line Style	Line Weight
V-E-CADASTRAL-CROWN-UNSURVEYED-LINE	2	1	0
V-E-CADASTRAL-EASEMENT-BOUNDARY-LINE	3	2	0
V-E-CADASTRAL-EASEMENT-DESCRIPTION-ARROW	3	0	0
V-E-CADASTRAL-EASEMENT-DESCRIPTION-TEXT	3	0	0
V-E-CADASTRAL-EASEMENT-DIMENSION-ARROW	3	0	0
V-E-CADASTRAL-EASEMENT-DIMENSION-TEXT	3	0	0
V-E-CADASTRAL-EASEMENT-UNSURVEYED-LINE	3	1	0
V-E-CADASTRAL-FEATURE-BUILDING-LINE	3	0	0
V-E-CADASTRAL-FEATURE-BUILDING-TEXT	3	0	0
V-E-CADASTRAL-FEATURE-FENCE-LINE	3	Fence	0
V-E-CADASTRAL-FEATURE-FENCE-TEXT	3	0	0
V-E-CADASTRAL-FEATURE-GATE-POINT	3	0	0
V-E-CADASTRAL-FEATURE-KERB-BACK-LINE	3	Kerb	0
V-E-CADASTRAL-FEATURE-KERB-BACK-TEXT	3	0	0
V-E-CADASTRAL-FEATURE-KERB-FACE-LINE	3	Kerb	0
V-E-CADASTRAL-FEATURE-KERB-FACE-TEXT	3	0	0
V-E-CADASTRAL-FEATURE-TREE-POINT	3	0	0
V-E-CADASTRAL-LEASE-BOUNDARY-LINE	2	2	0
V-E-CADASTRAL-LEASE-DESCRIPTION-TEXT	4	0	0
V-E-CADASTRAL-LEASE-DIMENSION-ARROW	3	0	0
V-E-CADASTRAL-LEASE-UNSURVEYED-LINE	2	1	0
V-E-CADASTRAL-MUNICIPAL-BOUNDARY-LINE	4	Municipal Boundary	0
V-E-CADASTRAL-MUNICIPAL-DESCRIPTION-TEXT	3	0	0
V-E-CADASTRAL-MUNICIPAL-UNSURVEYED-LINE	4	1	0
V-E-CADASTRAL-NOTATION-1-2-TEXT	6	0	0
V-E-CADASTRAL-NOTATION-1-8-TEXT	3	0	0
V-E-CADASTRAL-NOTATION-2-5-TEXT	4	0	0
V-E-CADASTRAL-NOTATION-3-5-TEXT	2	0	0
V-E-CADASTRAL-NOTATION-5-0-TEXT	5	0	0
V-E-CADASTRAL-NOTATION-7-0-TEXT	1	0	0
V-E-CADASTRAL-OCCUPATION-DESCRIPTION-ARROW	3	0	0
V-E-CADASTRAL-OCCUPATION-DESCRIPTION-TEXT	3	0	0
V-E-CADASTRAL-OCCUPATION-FENCE-BRICK-ABOVE-LINE	3	Brick Above	0
V-E-CADASTRAL-OCCUPATION-FENCE-BRICK-BELOW-LINE	3	Brick Below	0
V-E-CADASTRAL-OCCUPATION-FENCE-IRON-ABOVE-LINE	3	Iron Above	0
V-E-CADASTRAL-OCCUPATION-FENCE-IRON-BELOW-LINE	3	Iron Below	0
V-E-CADASTRAL-OCCUPATION-FENCE-LINE	3	Fence	0

Name	Colour	Line Style	Line Weight
V-E-CADASTRAL-OCCUPATION-FENCE-ON-FREEWAY-LINE	3	Fence on Freeway	0
V-E-CADASTRAL-OCCUPATION-FENCE-ON-TITLE-LINE	3	Fence on Title	0
V-E-CADASTRAL-OCCUPATION-FENCE-POINT	3	Fence	0
V-E-CADASTRAL-OCCUPATION-INTERSECTION-POINT	3	0	0
V-E-CADASTRAL-OCCUPATION-PEG-POINT	4	0	0
V-E-CADASTRAL-OCCUPATION-POST-POINT	3	0	0
V-E-CADASTRAL-PUBLIC-ACQUISITION-OVERLAY-LINE	5	2	2
V-E-CADASTRAL-PUBLIC-ACQUISITION-OVERLAY-TEXT	3	0	0
V-E-CADASTRAL-RAIL-NAME-TEXT	4	0	0
V-E-CADASTRAL-RAIL-TRACK-LINE	14	0	2
V-E-CADASTRAL-RAIL-TRACK-MULTIPLE-LINE	14	3	2
V-E-CADASTRAL-RAIL-TRACK-RUNNING-EDGE-LINE	3	0	0
V-E-CADASTRAL-ROAD-ACCESS-LINE	0	0	0
V-E-CADASTRAL-ROAD-ANCILLARY-AREA-DECLARED-LINE	0	0	0
V-E-CADASTRAL-ROAD-FREEWAY-LINE	1	0	3
V-E-CADASTRAL-ROAD-FREEWAY-SUPERSEDED-ARROW	3	0	0
V-E-CADASTRAL-ROAD-FREEWAY-SUPERSEDED-LINE	2	0	0
V-E-CADASTRAL-ROAD-FREEWAY-SUPERSEDED-TEXT	4	0	0
V-E-CADASTRAL-ROAD-FREEWAY-TEXT	4	0	0
V-E-CADASTRAL-ROAD-FREEWAY-UNSURVEYED-LINE	1	1	3
V-E-CADASTRAL-ROAD-NAME-ARROW	3	0	0
V-E-CADASTRAL-ROAD-NAME-TEXT	4	0	0
V-E-CADASTRAL-ROAD-NON-ARTERIAL-DECLARED-LINE	0	0	0
V-E-CADASTRAL-ROAD-PROJECT-DECLARED-LINE	0	0	0
V-E-CADASTRAL-SURVEY-PLAN-NUMBER-TEXT	4	0	0
V-E-CADASTRAL-SURVEY-PLAN-PARCEL-ARROW	3	0	0
V-E-CADASTRAL-SURVEY-PLAN-PARCEL-FILL	22	0	0
V-E-CADASTRAL-SURVEY-PLAN-PARCEL-POINT	3	0	0
V-E-CADASTRAL-SURVEY-PLAN-PARCEL-TEXT	3	0	0
V-E-CADASTRAL-TEMPORARY-OCCUPIED-LAND-ARROW	3	0	0
V-E-CADASTRAL-TEMPORARY-OCCUPIED-LAND-LINE	2	Temporary Occupied Land Boundary	0
V-E-CADASTRAL-TEMPORARY-OCCUPIED-LAND-TEXT	4	0	0
V-E-CADASTRAL-TITLE-BOUNDARY-LINE	2	0	0
V-E-CADASTRAL-TITLE-BOUNDARY-POINT	4	0	0
V-E-CADASTRAL-TITLE-CORNER-NUMBER-TEXT	0	0	0
V-E-CADASTRAL-TITLE-DESCRIPTION-TEXT	4	0	0

Name	Colour	Line Style	Line Weight
V-E-CADASTRAL-TITLE-DIMENSION-ARROW	3	0	0
V-E-CADASTRAL-TITLE-DIMENSION-TEXT	4	0	0
V-E-CADASTRAL-TITLE-STANDARD-PARCEL-ID-ARROW	3	0	0
V-E-CADASTRAL-TITLE-STANDARD-PARCEL-ID-TEXT	4	0	0
V-E-CADASTRAL-TITLE-SURROUND-LINE	5	2	0
V-E-CADASTRAL-TITLE-UNSURVEYED-LINE	3	3	0
V-E-CADASTRAL-WATERCOURSE-DESCRIPTION-TEXT	3	0	0
V-E-CADASTRAL-WATERCOURSE-NAME-TEXT	4	0	0
V-E-CADASTRAL-WATERCOURSE-PERENNIAL-LINE	8	0	0
V-E-CADASTRAL-WATERCOURSE-RIVER-LINE	6	0	0
V-E-CADASTRAL-WATERCOURSE-SEASONAL-LINE	8	2	0
V-E-CONTROLPLAN-CONNECTION-MARK-TEXT	5	0	0
V-E-CONTROLPLAN-CROWN-COUNTY-LINE	5	County Boundary	0
V-E-CONTROLPLAN-CROWN-COUNTY-TEXT	5	0	0
V-E-CONTROLPLAN-CROWN-PARISH-LINE	5	Parish Boundary	0
V-E-CONTROLPLAN-CROWN-PARISH-TEXT	2	0	0
V-E-CONTROLPLAN-CROWN-STATE-LINE	5	State Boundary	0
V-E-CONTROLPLAN-CROWN-TOWNSHIP-LINE	5	Township Boundary	0
V-E-CONTROLPLAN-CROWN-TOWNSHIP-TEXT	4	0	0
V-E-CONTROLPLAN-RAIL-NAME-TEXT	4	0	0
V-E-CONTROLPLAN-ROAD-NAME-TEXT	4	0	0
V-E-CONTROLPLAN-TITLE-BOUNDARY-LINE	3	0	0
V-E-CONTROLPLAN-WATERCOURSE-NAME-TEXT	4	0	0
V-E-LOCALITY-RAIL-NAME-TEXT	3	0	0
V-E-LOCALITY-RAIL-TRACK-LINE	3	Railway - Single Track	0
V-E-LOCALITY-RAIL-TRACK-MULTIPLE-LINE	3	Railway - Multi Track	0
V-E-LOCALITY-ROAD-ARTERIAL-DECLARED-LINE	2	0	0
V-E-LOCALITY-ROAD-FREEWAY-DECLARED-LINE	1	0	2
V-E-LOCALITY-ROAD-MUNICIPAL-DECLARED-LINE	3	0	0
V-E-LOCALITY-ROAD-NAME-TEXT	3	0	0
V-E-LOCALITY-ROAD-TOWN-NAME-TEXT	4	0	1
V-E-LOCALITY-SURVEY-PLAN-NUMBER-TEXT	3	0	0
V-E-LOCALITY-WATERCOURSE-NAME-TEXT	4	0	0
V-E-LOCALITY-WATERCOURSE-RIVER-LINE	8	0	0

Name	Colour	Line Style	Line Weight
V-E-LOCALITY-WINDOW-OTHER-PLANS-LINE	3	1	0
V-E-LOCALITY-WINDOW-THIS-PLAN-LINE	4	0	1
V-E-RAIL-DETAIL-BALLAST-LINE	12	7	1
V-E-RAIL-DETAIL-BALLAST-POINT	12	0	0
V-E-RAIL-DETAIL-DESCRIPTION-TEXT	12	0	0
V-E-RAIL-DETAIL-RAILWAY-NAME-TEXT	12	0	0
V-E-RAIL-DETAIL-TRACK-RUNNING-EDGE-LINE	12	0	1
V-E-RAIL-DETAIL-TRACK-RUNNING-EDGE-POINT	12	0	0
V-E-RAIL-FURNITURE-BOOM-GATE-LINE	12	0	1
V-E-RAIL-FURNITURE-BOOM-GATE-POINT	12	0	0
V-E-RAIL-FURNITURE-DESCRIPTION-TEXT	12	0	0
V-E-RAIL-FURNITURE-GANTRY-LINE	12	0	1
V-E-RAIL-FURNITURE-SIGNAL-BOX-LINE	12	0	1
V-E-RAIL-FURNITURE-SIGNAL-BOX-POINT	12	0	1
V-E-RAIL-FURNITURE-SIGNAL-POLE-POINT	12	0	0
V-E-RAIL-FURNITURE-STANCHION-LINE	12	0	1
V-E-RAIL-FURNITURE-STANCHION-POINT	12	0	0
V-E-RAIL-FURNITURE-UNIDENTIFIED-LINE	12	0	1
V-E-RAIL-FURNITURE-UNIDENTIFIED-POINT	12	0	0
V-E-RAIL-FURNITURE-WIRE-OH-CATENERY-LINE	250	0	0
V-E-RAIL-FURNITURE-WIRE-OH-CATENERY-POINT	250	0	0
V-E-RAIL-FURNITURE-WIRE-OH-CONTACT-LINE	250	0	0
V-E-RAIL-FURNITURE-WIRE-OH-CONTACT-POINT	250	0	0
V-E-RAIL-TRAM-DESCRIPTION-TEXT	12	0	0
V-E-RAIL-TRAM-POLE-POINT	12	0	0
V-E-RAIL-TRAM-TRACK-LINE	12	0	1
V-E-RAIL-TRAM-TRACK-POINT	12	0	0
V-E-RAIL-TRAM-UNIDENTIFIED-LINE	10	2	1
V-E-RAIL-TRAM-UNIDENTIFIED-POINT	10	0	0
V-E-ROAD-BARRIER-CONC-HINGE-LINE	6	4	1
V-E-ROAD-BARRIER-CONC-HINGE-POINT	6	0	0
V-E-ROAD-BARRIER-CONC-INTERFACE-LINE	6	4	1
V-E-ROAD-BARRIER-CONC-INTERFACE-POINT	6	0	0
V-E-ROAD-BARRIER-CONC-TOP-LINE	6	4	1
V-E-ROAD-BARRIER-CONC-TOP-POINT	6	0	0
V-E-ROAD-BARRIER-DESCRIPTION-TEXT	6	0	0
V-E-ROAD-BARRIER-GUARD-RAIL-LINE	7	Guard Rail	1
V-E-ROAD-BARRIER-GUARD-RAIL-POINT	7	0	0

Name	Colour	Line Style	Line Weight
V-E-ROAD-BARRIER-WIRE-ROPE-LINE	0	Wire Rope Safety Barrier	1
V-E-ROAD-BARRIER-WIRE-ROPE-POINT	0	0	0
V-E-ROAD-DETAIL-BITUMEN-BREAK-LINE	6	0	1
V-E-ROAD-DETAIL-BITUMEN-CENTRE-LINE	6	4	1
V-E-ROAD-DETAIL-BITUMEN-CENTRE-POINT	6	0	0
V-E-ROAD-DETAIL-BITUMEN-EDGE-LINE	6	0	2
V-E-ROAD-DETAIL-BITUMEN-EDGE-POINT	6	0	0
V-E-ROAD-DETAIL-BITUMEN-SPOT-POINT	6	0	0
V-E-ROAD-DETAIL-CONCRETE-EDGE-LINE	6	0	1
V-E-ROAD-DETAIL-CONCRETE-EDGE-POINT	6	0	0
V-E-ROAD-DETAIL-CONCRETE-SPOT-POINT	6	0	0
V-E-ROAD-DETAIL-DESCRIPTION-TEXT	11	0	0
V-E-ROAD-DETAIL-DRIVEWAY-LINE	13	2	1
V-E-ROAD-DETAIL-DRIVEWAY-POINT	13	0	0
V-E-ROAD-DETAIL-FORMATION-CENTRE-LINE	6	5	1
V-E-ROAD-DETAIL-FORMATION-CENTRE-POINT	6	0	3
V-E-ROAD-DETAIL-FORMATION-EDGE-LINE	6	3	1
V-E-ROAD-DETAIL-FORMATION-EDGE-POINT	6	0	0
V-E-ROAD-DETAIL-KERB-BACK-LINE	13	0	1
V-E-ROAD-DETAIL-KERB-BACK-POINT	13	0	0
V-E-ROAD-DETAIL-KERB-INV-LINE	13	2	1
V-E-ROAD-DETAIL-KERB-INV-POINT	13	0	0
V-E-ROAD-DETAIL-KERB-LIP-LINE	13	0	1
V-E-ROAD-DETAIL-KERB-LIP-POINT	13	0	0
V-E-ROAD-DETAIL-KERB-TOP-LINE	13	0	1
V-E-ROAD-DETAIL-KERB-TOP-POINT	13	0	0
V-E-ROAD-DETAIL-PATH-LINE	13	3	1
V-E-ROAD-DETAIL-PATH-POINT	13	0	0
V-E-ROAD-DETAIL-ROAD-NAME-TEXT	4	0	0
V-E-ROAD-DETAIL-STOCK-GRID-LINE	0	0	0
V-E-ROAD-DETAIL-STOCK-GRID-POINT	0	0	0
V-E-ROAD-DETAIL-TRACK-LINE	13	7	0
V-E-ROAD-DETAIL-TRACK-POINT	13	0	0
V-E-ROAD-DETAIL-UNIDENTIFIED-LINE	11	0	1
V-E-ROAD-DETAIL-UNIDENTIFIED-POINT	11	0	0
V-E-ROAD-FURNITURE-BOLLARD-LINE	7	0	1
V-E-ROAD-FURNITURE-BOLLARD-POINT	7	0	0

Name	Colour	Line Style	Line Weight
V-E-ROAD-FURNITURE-BUS-SHELTER-LINE	12	0	1
V-E-ROAD-FURNITURE-BUS-SHELTER-POINT	12	0	0
V-E-ROAD-FURNITURE-DESCRIPTION-TEXT	7	0	0
V-E-ROAD-FURNITURE-KM-POST-POINT	7	0	0
V-E-ROAD-FURNITURE-MONUMENT-LINE	7	0	1
V-E-ROAD-FURNITURE-MONUMENT-POINT	7	0	0
V-E-ROAD-FURNITURE-POSTBOX-LINE	7	0	1
V-E-ROAD-FURNITURE-POSTBOX-POINT	7	0	0
V-E-ROAD-FURNITURE-SIGN-CENTRE-MOUNTED-LINE	2	0	1
V-E-ROAD-FURNITURE-SIGN-CENTRE-MOUNTED-POINT	2	0	0
V-E-ROAD-FURNITURE-SIGN-CURVED-LINE	2	0	1
V-E-ROAD-FURNITURE-SIGN-CURVED-POINT	2	0	0
V-E-ROAD-FURNITURE-SIGN-LINE	7	0	1
V-E-ROAD-FURNITURE-SIGN-MULTI-MOUNTED-LINE	2	0	1
V-E-ROAD-FURNITURE-SIGN-MULTI-MOUNTED-POINT	2	0	0
V-E-ROAD-FURNITURE-SIGN-POINT	7	0	0
V-E-ROAD-FURNITURE-SIGN-SIDE-MOUNTED-LINE	2	0	1
V-E-ROAD-FURNITURE-SIGN-SIDE-MOUNTED-POINT	2	0	0
V-E-ROAD-FURNITURE-SIGN-TEXT	2	0	0
V-E-ROAD-FURNITURE-UNIDENTIFIED-LINE	7	0	1
V-E-ROAD-FURNITURE-UNIDENTIFIED-POINT	7	0	0
V-E-ROAD-LMARK-ARROW-LINE	0	0	1
V-E-ROAD-LMARK-ARROW-POINT	0	0	0
V-E-ROAD-LMARK-BANDING-LINE	0	0	1
V-E-ROAD-LMARK-BANDING-POINT	0	0	0
V-E-ROAD-LMARK-CERAMIC-DELINEATOR-LINE	0	1	1
V-E-ROAD-LMARK-CERAMIC-DELINEATOR-POINT	0	0	0
V-E-ROAD-LMARK-DASHED-GIVE-WAY-LINE	0	3	0
V-E-ROAD-LMARK-DASHED-GIVE-WAY-POINT	0	0	0
V-E-ROAD-LMARK-DASHED-LINE	0	3	0
V-E-ROAD-LMARK-DASHED-POINT	0	0	0
V-E-ROAD-LMARK-DESCRIPTION-TEXT	0	0	0
V-E-ROAD-LMARK-PARKING-LINE	0	0	1
V-E-ROAD-LMARK-PARKING-POINT	0	0	0
V-E-ROAD-LMARK-PROFILED-DESCRIPTION-TEXT	0	0	0
V-E-ROAD-LMARK-PROFILED-LINE	0	Edge-Profiled	0
V-E-ROAD-LMARK-PROFILED-POINT	0	0	0

Name	Colour	Line Style	Line Weight
V-E-ROAD-LMARK-SOLID-DASHED-LINE	0	Barrier-One Way	1
V-E-ROAD-LMARK-SOLID-DASHED-POINT	0	0	0
V-E-ROAD-LMARK-SOLID-DOUBLE-LINE	0	Barrier-Two Way	1
V-E-ROAD-LMARK-SOLID-DOUBLE-POINT	0	0	0
V-E-ROAD-LMARK-SOLID-LINE	0	0	1
V-E-ROAD-LMARK-SOLID-POINT	0	0	0
V-E-ROAD-LMARK-SOLID-STOP-LINE	0	0	1
V-E-ROAD-LMARK-SOLID-STOP-POINT	0	0	0
V-E-ROAD-LMARK-SYMBOL-LINE	0	0	1
V-E-ROAD-LMARK-SYMBOL-POINT	0	0	0
V-E-ROAD-TRAFFIC-CABLE-PIT-LINE	2	0	1
V-E-ROAD-TRAFFIC-CABLE-PIT-POINT	2	0	0
V-E-ROAD-TRAFFIC-CAMERA-FLASH-POINT	2	0	1
V-E-ROAD-TRAFFIC-CAMERA-POINT	2	0	0
V-E-ROAD-TRAFFIC-DESCRIPTION-TEXT	2	0	0
V-E-ROAD-TRAFFIC-DETECTOR-LOOP-LINE	6	1	0
V-E-ROAD-TRAFFIC-DETECTOR-LOOP-POINT	6	0	0
V-E-ROAD-TRAFFIC-DETECTOR-LOOP-WIRING-LINE	7	4	1
V-E-ROAD-TRAFFIC-DETECTOR-LOOP-WIRING-POINT	7	0	0
V-E-ROAD-TRAFFIC-DETECTOR-PIT-LINE	2	0	1
V-E-ROAD-TRAFFIC-DETECTOR-PIT-POINT	2	0	0
V-E-ROAD-TRAFFIC-JOINT-USE-POLE-POINT	9	0	0
V-E-ROAD-TRAFFIC-SIGNAL-BOX-LINE	7	0	1
V-E-ROAD-TRAFFIC-SIGNAL-BOX-POINT	7	0	0
V-E-ROAD-TRAFFIC-SIGNAL-PIT-LINE	7	0	1
V-E-ROAD-TRAFFIC-SIGNAL-PIT-POINT	7	0	1
V-E-ROAD-TRAFFIC-SIGNAL-POLE-POINT	7	0	0
V-E-STRUCT-BRIDGE-ABUTMENT-LINE	7	0	1
V-E-STRUCT-BRIDGE-ABUTMENT-POINT	7	0	0
V-E-STRUCT-BRIDGE-CENTRE-LINE	3	7	0
V-E-STRUCT-BRIDGE-CENTRE-POINT	3	0	0
V-E-STRUCT-BRIDGE-DECK-LINE	13	0	0
V-E-STRUCT-BRIDGE-DECK-POINT	13	0	0
V-E-STRUCT-BRIDGE-DESCRIPTION-TEXT	13	0	0
V-E-STRUCT-BRIDGE-DIAPHRAGM-CENTRE-LINE	4	7	0
V-E-STRUCT-BRIDGE-DIAPHRAGM-CENTRE-POINT	4	0	0
V-E-STRUCT-BRIDGE-EXPANSION-JOINT-LINE	13	0	0

Name	Colour	Line Style	Line Weight
V-E-STRUCT-BRIDGE-EXPANSION-JOINT-POINT	13	0	0
V-E-STRUCT-BRIDGE-PARAPET-LINE	8	0	0
V-E-STRUCT-BRIDGE-PARAPET-POINT	8	0	0
V-E-STRUCT-BRIDGE-PEDESTAL-LINE	2	0	0
V-E-STRUCT-BRIDGE-PEDESTAL-POINT	2	0	0
V-E-STRUCT-BRIDGE-PIER-CENTRE-LINE	2	7	0
V-E-STRUCT-BRIDGE-PIER-CENTRE-POINT	2	0	0
V-E-STRUCT-BRIDGE-PIER-LINE	0	0	1
V-E-STRUCT-BRIDGE-PIER-POINT	0	0	0
V-E-STRUCT-BRIDGE-PILE-CENTRE-LINE	1	7	0
V-E-STRUCT-BRIDGE-PILE-CENTRE-POINT	1	0	0
V-E-STRUCT-BRIDGE-PILE-LINE	1	0	0
V-E-STRUCT-BRIDGE-PILE-POINT	1	0	0
V-E-STRUCT-BRIDGE-SLAB-CENTRE-LINE	4	7	0
V-E-STRUCT-BRIDGE-SLAB-CENTRE-POINT	4	0	0
V-E-STRUCT-BRIDGE-SLAB-EDGE-LINE	4	0	0
V-E-STRUCT-BRIDGE-SLAB-EDGE-POINT	4	0	0
V-E-STRUCT-BRIDGE-SOFFIT-LINE	7	0	1
V-E-STRUCT-BRIDGE-SOFFIT-POINT	7	0	0
V-E-STRUCT-BRIDGE-UNIDENTIFIED-LINE	0	0	0
V-E-STRUCT-BRIDGE-UNIDENTIFIED-POINT	0	0	0
V-E-STRUCT-BUILDING-DESCRIPTION-TEXT	11	0	0
V-E-STRUCT-BUILDING-HOUSE-LINE	11	0	1
V-E-STRUCT-BUILDING-HOUSE-POINT	11	0	0
V-E-STRUCT-BUILDING-MAJOR-LINE	11	0	2
V-E-STRUCT-BUILDING-MAJOR-POINT	11	0	0
V-E-STRUCT-BUILDING-MINOR-LINE	11	0	0
V-E-STRUCT-BUILDING-MINOR-POINT	11	0	0
V-E-STRUCT-BUILDING-TOWER-LINE	6	0	1
V-E-STRUCT-BUILDING-TOWER-POINT	6	0	0
V-E-STRUCT-BUILDING-VERANDAH-LINE	11	0	0
V-E-STRUCT-BUILDING-VERANDAH-POINT	11	0	0
V-E-STRUCT-BUILDING-WALL-LINE	13	0	1
V-E-STRUCT-BUILDING-WALL-POINT	13	0	0
V-E-STRUCT-NOISE-WALL-DESCRIPTION-TEXT	0	0	0
V-E-STRUCT-NOISE-WALL-INTERFACE-LINE	0	0	1
V-E-STRUCT-NOISE-WALL-INTERFACE-POINT	0	0	0
V-E-STRUCT-NOISE-WALL-TOP-LINE	0	0	1
V-E-STRUCT-NOISE-WALL-TOP-POINT	0	0	0

Name	Colour	Line Style	Line Weight
V-E-STRUCT-RETAINING-WALL-ALL-LINE	7	0	1
V-E-STRUCT-RETAINING-WALL-ALL-POINT	7	0	0
V-E-STRUCT-RETAINING-WALL-CONCRETE-LINE	7	0	1
V-E-STRUCT-RETAINING-WALL-CONCRETE-POINT	7	0	0
V-E-STRUCT-RETAINING-WALL-CRIB-LINE	7	0	1
V-E-STRUCT-RETAINING-WALL-CRIB-POINT	7	0	0
V-E-STRUCT-RETAINING-WALL-DESCRIPTION-TEXT	7	0	0
V-E-STRUCT-RETAINING-WALL-ROCK-LINE	7	0	1
V-E-STRUCT-RETAINING-WALL-ROCK-POINT	7	0	0
V-E-STRUCT-RETAINING-WALL-WOOD-LINE	7	0	1
V-E-STRUCT-RETAINING-WALL-WOOD-POINT	7	0	0
V-E-STRUCT-UNCL-DESCRIPTION-TEXT	7	0	0
V-E-STRUCT-UNCL-SWIMMING-POOL-LINE	8	0	1
V-E-STRUCT-UNCL-SWIMMING-POOL-POINT	8	0	0
V-E-STRUCT-UNCL-UNIDENTIFIED-LINE	7	0	1
V-E-STRUCT-UNCL-UNIDENTIFIED-POINT	7	0	0
V-E-STRUCT-UNCL-WINDMILL-LINE	5	0	1
V-E-STRUCT-UNCL-WINDMILL-POINT	5	0	0
V-E-SURVEY-BOUNDARY-FENCE-DESCRIPTION-TEXT	0	0	0
V-E-SURVEY-BOUNDARY-FENCE-LINE	0	Fence	1
V-E-SURVEY-BOUNDARY-FENCE-POINT	0	0	0
V-E-SURVEY-BOUNDARY-GATE-LINE	0	0	1
V-E-SURVEY-BOUNDARY-GATE-POINT	0	0	0
V-E-SURVEY-BOUNDARY-INTERSECTION-POINT	0	0	0
V-E-SURVEY-BOUNDARY-POST-POINT	0	0	0
V-E-SURVEY-BOUNDARY-PROPERTY-DESCRIPTION-TEXT	0	0	0
V-E-SURVEY-BOUNDARY-TITLE-LINE	0	0	1
V-E-SURVEY-BOUNDARY-TITLE-POINT	0	0	0
V-E-SURVEY-CONTROL-BENCH-MARK-POINT	0	0	1
V-E-SURVEY-CONTROL-BENCH-MARK-QS1-POINT	11	0	0
V-E-SURVEY-CONTROL-BENCH-MARK-S2-POINT	11	0	0
V-E-SURVEY-CONTROL-BENCH-MARK-SH1-POINT	11	0	0
V-E-SURVEY-CONTROL-CHECK-LINE	10	0	3
V-E-SURVEY-CONTROL-CHECK-POINT	10	0	0
V-E-SURVEY-CONTROL-MARK-DESCRIPTION-TEXT	0	0	0
V-E-SURVEY-CONTROL-MARK-POINT	0	0	0
V-E-SURVEY-CONTROL-NAIL-POINT	11	0	0
V-E-SURVEY-CONTROL-PEG-POINT	11	0	0
V-E-SURVEY-CONTROL-PHOTO-CENTRE-POINT-POINT	10	0	0

Name	Colour	Line Style	Line Weight
V-E-SURVEY-CONTROL-PHOTO-GRID-POINT	10	0	0
V-E-SURVEY-CONTROL-PHOTO-H-POINT	10	0	1
V-E-SURVEY-CONTROL-PHOTO-HV-POINT	10	0	1
V-E-SURVEY-CONTROL-PHOTO-MINOR-H-POINT	10	0	0
V-E-SURVEY-CONTROL-PHOTO-PASS-POINT	10	0	0
V-E-SURVEY-CONTROL-PHOTO-POINT	0	0	1
V-E-SURVEY-CONTROL-PHOTO-TIE-POINT	10	0	0
V-E-SURVEY-CONTROL-PHOTO-V-POINT	10	0	1
V-E-SURVEY-CONTROL-PIPE-POINT	11	0	0
V-E-SURVEY-CONTROL-PM-POINT	0	0	1
V-E-SURVEY-CONTROL-RADIATION-LINE	0	2	0
V-E-SURVEY-CONTROL-RADIATION-TEXT	0	0	0
V-E-SURVEY-CONTROL-RM2-POINT	11	0	0
V-E-SURVEY-CONTROL-RM-POINT	11	0	0
V-E-SURVEY-CONTROL-ROD-POINT	11	0	0
V-E-SURVEY-CONTROL-SPIKE-POINT	11	0	0
V-E-SURVEY-CONTROL-STATION-ID-TEXT	0	0	0
V-E-SURVEY-CONTROL-STATION-POINT	0	0	0
V-E-SURVEY-CONTROL-STATION-RL-TEXT	0	0	0
V-E-SURVEY-CONTROL-TRAVERSE-LINE	0	6	0
V-E-SURVEY-CONTROL-TRAVERSE-TEXT	0	0	0
V-E-SURVEY-CONTROL-TRIG-POINT	0	0	3
V-E-SURVEY-SPECIFICATION-AUD1-FILL	1	0	0
V-E-SURVEY-SPECIFICATION-AUD2-FILL	7	0	0
V-E-SURVEY-SPECIFICATION-ES2-FILL	2	0	0
V-E-SURVEY-SPECIFICATION-ES3-FILL	9	0	0
V-E-SURVEY-SPECIFICATION-ES4-FILL	8	0	0
V-E-SURVEY-SPECIFICATION-PAV1-FILL	4	0	0
V-E-SURVEY-SPECIFICATION-PAV2-FILL	5	0	0
V-E-SURVEY-SPECIFICATION-PAV3-FILL	6	0	0
V-E-SURVEY-SPECIFICATION-PAV4-FILL	11	0	0
V-E-SURVEY-SPECIFICATION-PH3-FILL	0	0	0
V-E-SURVEY-SPECIFICATION-PH4-FILL	13	0	0
V-E-SURVEY-SPECIFICATION-PHN3-FILL	3	0	0
V-E-SURVEY-SPECIFICATION-PHN4-FILL	10	0	0
V-E-TITLE-BOUNDARY-SURROUND-LINE	0	0	0
V-E-TITLE-CROWN-ALLOTMENT-TEXT	2	0	0
V-E-TITLE-CROWN-SECTION-TEXT	4	0	0
V-E-TITLE-EASEMENT-DESCRIPTION-TEXT	3	0	0

Name	Colour	Line Style	Line Weight
V-E-TOPO-EARTHWORK-DESCRIPTION-TEXT	0	0	0
V-E-TOPO-EARTHWORK-QUARRY-LINE	6	3	1
V-E-TOPO-EARTHWORK-QUARRY-POINT	6	0	0
V-E-TOPO-EARTHWORK-STOCKPILE-LINE	3	2	1
V-E-TOPO-EARTHWORK-STOCKPILE-POINT	3	0	0
V-E-TOPO-EMBANKMENT-DESCRIPTION-TEXT	0	0	0
V-E-TOPO-EMBANKMENT-TOE-LINE	11	7	1
V-E-TOPO-EMBANKMENT-TOE-POINT	11	0	0
V-E-TOPO-EMBANKMENT-TOP-LINE	11	2	1
V-E-TOPO-EMBANKMENT-TOP-POINT	11	0	0
V-E-TOPO-MODEL-BOUNDARY-EXTERIOR-LINE	10	0	2
V-E-TOPO-MODEL-BOUNDARY-INTERIOR-LINE	4	0	2
V-E-TOPO-MODEL-BOUNDARY-ISLAND-LINE	6	0	2
V-E-TOPO-MODEL-CONTOUR-MAJOR-LINE	0	1	2
V-E-TOPO-MODEL-CONTOUR-MINOR-LINE	9	0	1
V-E-TOPO-MODEL-CONTOUR-TEXT	0	0	1
V-E-TOPO-MODEL-TERRAIN-LINE	0	0	0
V-E-TOPO-MODEL-TRIANGLES-LINE	0	0	0
V-E-TOPO-SURFACE-BREAK-LINE	9	7	1
V-E-TOPO-SURFACE-BREAK-POINT	9	0	0
V-E-TOPO-SURFACE-CONTOUR-INDEX-LINE	4	0	1
V-E-TOPO-SURFACE-CONTOUR-INDEX-POINT	4	0	0
V-E-TOPO-SURFACE-CONTOUR-LINE	4	3	0
V-E-TOPO-SURFACE-CONTOUR-POINT	4	0	0
V-E-TOPO-SURFACE-CONTOUR-STANDARD-LINE	4	0	0
V-E-TOPO-SURFACE-CONTOUR-STANDARD-POINT	4	0	0
V-E-TOPO-SURFACE-DEPRESSION-LINE	4	5	0
V-E-TOPO-SURFACE-DEPRESSION-POINT	4	0	0
V-E-TOPO-SURFACE-DEPRESSION-STANDARD-LINE	4	2	0
V-E-TOPO-SURFACE-DEPRESSION-STANDARD-POINT	4	0	0
V-E-TOPO-SURFACE-DESCRIPTION-TEXT	0	0	0
V-E-TOPO-SURFACE-PROFILE-LINE	9	0	1
V-E-TOPO-SURFACE-PROFILE-POINT	9	0	0
V-E-TOPO-SURFACE-SPORTS-FIELD-LINE	9	0	1
V-E-TOPO-SURFACE-SPORTS-FIELD-POINT	9	0	0
V-E-TOPO-SURFACE-SPOT-LINE	9	0	1
V-E-TOPO-SURFACE-SPOT-POINT	9	0	0
V-E-TOPO-WATERCOURSE-DESCRIPTION-TEXT	0	0	0
V-E-TOPO-WATERCOURSE-PERENNIAL-LINE	8	0	1

Name	Colour	Line Style	Line Weight
V-E-TOPO-WATERCOURSE-PERENNIAL-POINT	8	0	0
V-E-TOPO-WATERCOURSE-POND-LINE	8	0	1
V-E-TOPO-WATERCOURSE-POND-POINT	8	0	0
V-E-TOPO-WATERCOURSE-RIVER-LINE	8	0	1
V-E-TOPO-WATERCOURSE-RIVER-NAME-TEXT	4	0	0
V-E-TOPO-WATERCOURSE-RIVER-POINT	8	0	0
V-E-TOPO-WATERCOURSE-SEASONAL-LINE	8	2	0
V-E-TOPO-WATERCOURSE-SEASONAL-POINT	8	0	0
V-E-TOPO-WATERCOURSE-SWAMP-LINE	8	6	1
V-E-TOPO-WATERCOURSE-SWAMP-POINT	8	0	0
V-E-UTIL-CCTV-CABLE-OH-LINE	82	VT-OH-POWER	0
V-E-UTIL-CCTV-CABLE-OH-POINT	82	0	0
V-E-UTIL-CCTV-CONDUIT-UG-LINE	82	VT-COMMS-UG	0
V-E-UTIL-CCTV-CONDUIT-UG-POINT	82	0	0
V-E-UTIL-CCTV-DESCRIPTION-TEXT	82	0	0
V-E-UTIL-CCTV-PIT-LINE	82	0	0
V-E-UTIL-CCTV-PIT-POINT	82	0	0
V-E-UTIL-CCTV-POLE-POINT	92	0	0
V-E-UTIL-CCTV-UG-QLA	82	VT-COMMS-UG (A)	2
V-E-UTIL-CCTV-UG-QLB	82	VT-COMMS-UG (B)	2
V-E-UTIL-CCTV-UG-QLC	82	VT-COMMS-UG (C)	2
V-E-UTIL-CCTV-UG-QLD	82	VT-COMMS-UG (D)	2
V-E-UTIL-COMMS-CABLE-OH-LINE	92	VT-OH-POWER	1
V-E-UTIL-COMMS-CABLE-OH-POINT	92	0	1
V-E-UTIL-COMMS-CABLE-OH-QLA	92	VT-COMMS-AG (A)	2
V-E-UTIL-COMMS-CABLE-OH-QLB	92	VT-COMMS-AG (B)	2
V-E-UTIL-COMMS-CABLE-OH-QLC	92	VT-COMMS-AG (C)	3

Name	Colour	Line Style	Line Weight
V-E-UTIL-COMMS-CABLE-OH-QLD	92	VT-COMMS-AG (D)	4
V-E-UTIL-COMMS-CABLE-UG-LINE	92	VT-COMMS-UG	1
V-E-UTIL-COMMS-CABLE-UG-POINT	92	0	1
V-E-UTIL-COMMS-CABLE-UG-QLA	92	VT-COMMS-UG (A)	2
V-E-UTIL-COMMS-CABLE-UG-QLB	92	VT-COMMS-UG (B)	2
V-E-UTIL-COMMS-CABLE-UG-QLC	92	VT-COMMS-UG (C)	2
V-E-UTIL-COMMS-CABLE-UG-QLD	92	VT-COMMS-UG (D)	2
V-E-UTIL-COMMS-CONDUIT-LINE	92	VT-COMMS-CL	1
V-E-UTIL-COMMS-CONDUIT-POINT	92	0	1
V-E-UTIL-COMMS-CONDUIT-POWER-LINE	92	0	0
V-E-UTIL-COMMS-CONDUIT-POWER-POINT	92	0	0
V-E-UTIL-COMMS-DESCRIPTION-TEXT	92	0	0
V-E-UTIL-COMMS-MARKER-POST-POINT	92	0	1
V-E-UTIL-COMMS-PIT-LINE	92	0	1
V-E-UTIL-COMMS-PIT-POINT	92	0	1
V-E-UTIL-COMMS-POLE-POINT	92	0	1
V-E-UTIL-COMMS-POWER-LINE	92	0	0
V-E-UTIL-COMMS-POWER-POINT	92	0	0
V-E-UTIL-COMMS-SIGNAL-BOX-LINE	92	0	1
V-E-UTIL-COMMS-SIGNAL-BOX-POINT	92	0	1
V-E-UTIL-COMMS-UNIDENTIFIED-LINE	92	0	1
V-E-UTIL-COMMS-UNIDENTIFIED-POINT	92	0	1
V-E-UTIL-DRAIN-BEACHING-LINE	3	0	1
V-E-UTIL-DRAIN-BEACHING-POINT	3	0	0
V-E-UTIL-DRAIN-CULVERT-BASE-SLAB-LINE	3	0	0
V-E-UTIL-DRAIN-CULVERT-BASE-SLAB-POINT	3	0	0
V-E-UTIL-DRAIN-CULVERT-BOX-LINE	3	0	1
V-E-UTIL-DRAIN-CULVERT-BOX-POINT	3	0	0
V-E-UTIL-DRAIN-CULVERT-CENTRE-LINE	3	0	1
V-E-UTIL-DRAIN-CULVERT-EDGE-LINE	4	0	0

Name	Colour	Line Style	Line Weight
V-E-UTIL-DRAIN-CULVERT-EDGE-POINT	4	0	0
V-E-UTIL-DRAIN-CULVERT-ENDWALL-LINE	3	0	1
V-E-UTIL-DRAIN-CULVERT-ENDWALL-POINT	3	0	0
V-E-UTIL-DRAIN-CULVERT-WING-WALL-LINE	1	0	0
V-E-UTIL-DRAIN-CULVERT-WING-WALL-POINT	3	0	1
V-E-UTIL-DRAIN-DESCRIPTION-TEXT	8	0	0
V-E-UTIL-DRAIN-PIPE-AG-QLA	24	VT-DRAN-AG (A)	2
V-E-UTIL-DRAIN-PIPE-AG-QLB	24	VT-DRAN-AG (B)	2
V-E-UTIL-DRAIN-PIPE-AG-QLC	24	VT-DRAN-AG (C)	2
V-E-UTIL-DRAIN-PIPE-DIAMETER-TEXT	8	0	0
V-E-UTIL-DRAIN-PIPE-FLOW-ARROW-POINT	8	0	1
V-E-UTIL-DRAIN-PIPE-INVERT-LINE	3	VT-DRAN-UG	1
V-E-UTIL-DRAIN-PIPE-INVERT-POINT	3	0	1
V-E-UTIL-DRAIN-PIPE-OBVERT-LINE	3	0	1
V-E-UTIL-DRAIN-PIPE-OBVERT-POINT	3	0	0
V-E-UTIL-DRAIN-PIPE-PVC-LINE	3	VT-DRAN-UG	1
V-E-UTIL-DRAIN-PIPE-PVC-POINT	3	0	0
V-E-UTIL-DRAIN-PIPE-RCP-LINE	3	VT-DRAN-UG	1
V-E-UTIL-DRAIN-PIPE-RCP-POINT	3	0	0
V-E-UTIL-DRAIN-PIPE-UG-LINE	8	VT-DRAN-UG	1
V-E-UTIL-DRAIN-PIPE-UG-POINT	8	0	0
V-E-UTIL-DRAIN-PIPE-UG-QLA	24	VT-DRAN-UG (A)	2
V-E-UTIL-DRAIN-PIPE-UG-QLB	24	VT-DRAN-UG (B)	2
V-E-UTIL-DRAIN-PIPE-UG-QLC	24	VT-DRAN-UG (C)	2
V-E-UTIL-DRAIN-PIPE-UG-QLD	24	VT-DRAN-UG (D)	2
V-E-UTIL-DRAIN-PIT-FLUSHER-LINE	3	0	1
V-E-UTIL-DRAIN-PIT-FLUSHER-POINT	3	0	0
V-E-UTIL-DRAIN-PIT-GRATED-LINE	3	0	1
V-E-UTIL-DRAIN-PIT-GRATED-POINT	3	0	0
V-E-UTIL-DRAIN-PIT-INVERT-LINE	3	3	1
V-E-UTIL-DRAIN-PIT-INVERT-POINT	3	0	1
V-E-UTIL-DRAIN-PIT-JUNCTION-LINE	3	0	1

Name	Colour	Line Style	Line Weight
V-E-UTIL-DRAIN-PIT-JUNCTION-POINT	3	0	0
V-E-UTIL-DRAIN-PIT-SIDE-ENTRY-LINE	3	0	1
V-E-UTIL-DRAIN-PIT-SIDE-ENTRY-POINT	3	0	0
V-E-UTIL-DRAIN-PIT-UNIDENTIFIED-LINE	3	0	1
V-E-UTIL-DRAIN-PIT-UNIDENTIFIED-POINT	3	0	0
V-E-UTIL-DRAIN-UNIDENTIFIED-LINE	8	3	1
V-E-UTIL-DRAIN-UNIDENTIFIED-POINT	8	0	0
V-E-UTIL-ELEC-BOX-LINE	4	0	1
V-E-UTIL-ELEC-BOX-POINT	4	0	0
V-E-UTIL-ELEC-CABINET-LINE	4	0	1
V-E-UTIL-ELEC-CABINET-POINT	4	0	0
V-E-UTIL-ELEC-CABLE-OH-LINE	4	VT-OH-POWER	0
V-E-UTIL-ELEC-CABLE-OH-POINT	4	0	0
V-E-UTIL-ELEC-CABLE-OH-PROVEN-LINE	4	VT-OH-POWER	1
V-E-UTIL-ELEC-CABLE-OH-QLA	4	VT-ELEC-AG (A)	2
V-E-UTIL-ELEC-CABLE-OH-QLB	4	VT-ELEC-AG (B)	2
V-E-UTIL-ELEC-CABLE-OH-QLC	4	VT-ELEC-AG (C)	2
V-E-UTIL-ELEC-CABLE-OH-QLD	4	VT-ELEC-AG (D)	2
V-E-UTIL-ELEC-CABLE-UG-LINE	4	VT-ELEC-UG	1
V-E-UTIL-ELEC-CABLE-UG-POINT	4	0	0
V-E-UTIL-ELEC-CABLE-UG-PROVEN-LINE	4	VT-ELEC-UG	0
V-E-UTIL-ELEC-CABLE-UG-QLA	4	VT-ELEC-UG (A)	2
V-E-UTIL-ELEC-CABLE-UG-QLB	4	VT-ELEC-UG (B)	2
V-E-UTIL-ELEC-CABLE-UG-QLC	4	VT-ELEC-UG (C)	2
V-E-UTIL-ELEC-CABLE-UG-QLD	4	VT-ELEC-UG (D)	2
V-E-UTIL-ELEC-DESCRIPTION-PROVEN-TEXT	0	0	0
V-E-UTIL-ELEC-DESCRIPTION-TEXT	0	0	0
V-E-UTIL-ELEC-LIGHT-LINE	4	0	1
V-E-UTIL-ELEC-LIGHT-OUTREACH-LINE	4	0	1
V-E-UTIL-ELEC-LIGHT-OUTREACH-POINT	4	0	0
V-E-UTIL-ELEC-LIGHT-POINT	4	0	0

Name	Colour	Line Style	Line Weight
V-E-UTIL-ELEC-MARKER-POST-LINE	4	0	1
V-E-UTIL-ELEC-MARKER-POST-POINT	4	0	0
V-E-UTIL-ELEC-PIT-LINE	4	0	1
V-E-UTIL-ELEC-PIT-POINT	4	0	0
V-E-UTIL-ELEC-POLE-LIGHT-ONLY-POINT	4	0	1
V-E-UTIL-ELEC-POLE-POWER-AND-LIGHT-POINT	4	0	1
V-E-UTIL-ELEC-POLE-POWER-ONLY-POINT	4	0	1
V-E-UTIL-ELEC-PROVEN-LINE	4	0	1
V-E-UTIL-ELEC-TRANSMISSION-OH-LINE	4	VT-OH-POWER	0
V-E-UTIL-ELEC-TRANSMISSION-TOWER-LINE	4	0	1
V-E-UTIL-ELEC-TRANSMISSION-TOWER-POINT	4	0	0
V-E-UTIL-ELEC-UNIDENTIFIED-LINE	4	0	1
V-E-UTIL-ELEC-UNIDENTIFIED-POINT	4	0	0
V-E-UTIL-FIRE-SERVICE-UG	66	VT-FIRE-HYD-UG	0
V-E-UTIL-FUEL-BOWSER-LINE	3	0	1
V-E-UTIL-FUEL-BOWSER-POINT	3	0	0
V-E-UTIL-FUEL-BUILDING-LINE	13	0	1
V-E-UTIL-FUEL-BUILDING-POINT	13	0	0
V-E-UTIL-FUEL-DESCRIPTION-TEXT	0	0	0
V-E-UTIL-FUEL-PIPE-AG-LINE	13	0	0
V-E-UTIL-FUEL-PIPE-AG-POINT	13	0	0
V-E-UTIL-FUEL-PIPE-AG-QLA	13	VT-FUEL-AG (A)	2
V-E-UTIL-FUEL-PIPE-AG-QLB	13	VT-FUEL-AG (B)	2
V-E-UTIL-FUEL-PIPE-AG-QLC	13	VT-FUEL-AG (C)	2
V-E-UTIL-FUEL-PIPE-AG-QLD	13	VT-FUEL-AG (D)	2
V-E-UTIL-FUEL-PIPE-UG-LINE	13	VT-FUEL-UG	0
V-E-UTIL-FUEL-PIPE-UG-POINT	13	0	0
V-E-UTIL-FUEL-PIPE-UG-QLA	13	VT-FUEL-UG (A)	2
V-E-UTIL-FUEL-PIPE-UG-QLB	13	VT-FUEL-UG (B)	2
V-E-UTIL-FUEL-PIPE-UG-QLC	13	VT-FUEL-UG (C)	2
V-E-UTIL-FUEL-PIPE-UG-QLD	13	VT-FUEL-UG (D)	2
V-E-UTIL-FUEL-TANK-AG-LINE	3	0	1

Name	Colour	Line Style	Line Weight
V-E-UTIL-FUEL-TANK-AG-POINT	3	0	0
V-E-UTIL-FUEL-TANK-UG-LINE	3	2	1
V-E-UTIL-FUEL-TANK-UG-POINT	3	0	0
V-E-UTIL-FUEL-VALVE-LINE	3	0	1
V-E-UTIL-FUEL-VALVE-POINT	3	0	0
V-E-UTIL-GAS-DESCRIPTION-PROVEN-TEXT	0	0	0
V-E-UTIL-GAS-DESCRIPTION-TEXT	0	0	0
V-E-UTIL-GAS-MARKER-POST-LINE	9	0	1
V-E-UTIL-GAS-MARKER-POST-POINT	9	0	0
V-E-UTIL-GAS-PIPE-AG-LINE	9	VT-NGAS-CL	1
V-E-UTIL-GAS-PIPE-AG-POINT	9	0	0
V-E-UTIL-GAS-PIPE-AG-QLA	9	VT-NGAS-AG (A)	2
V-E-UTIL-GAS-PIPE-AG-QLB	9	VT-NGAS-AG (B)	2
V-E-UTIL-GAS-PIPE-AG-QLC	9	VT-NGAS-AG (C)	2
V-E-UTIL-GAS-PIPE-AG-QLD	9	VT-NGAS-AG (D)	2
V-E-UTIL-GAS-PIPE-UG-LINE	9	VT-NGAS-UG	1
V-E-UTIL-GAS-PIPE-UG-POINT	9	0	0
V-E-UTIL-GAS-PIPE-UG-PROVEN-LINE	9	VT-NGAS-UG	1
V-E-UTIL-GAS-PIPE-UG-QLA	9	VT-NGAS-UG (A)	2
V-E-UTIL-GAS-PIPE-UG-QLB	9	VT-NGAS-UG (B)	2
V-E-UTIL-GAS-PIPE-UG-QLC	9	VT-NGAS-UG (C)	2
V-E-UTIL-GAS-PIPE-UG-QLD	9	VT-NGAS-UG (D)	2
V-E-UTIL-GAS-PIT-LINE	9	0	1
V-E-UTIL-GAS-PIT-POINT	9	0	0
V-E-UTIL-GAS-PROVEN-LINE	9	VT-NGAS-CL	0
V-E-UTIL-GAS-UNIDENTIFIED-LINE	9	0	1
V-E-UTIL-GAS-UNIDENTIFIED-POINT	9	0	0
V-E-UTIL-GAS-VALVE-LINE	9	0	1
V-E-UTIL-GAS-VALVE-POINT	9	0	0
V-E-UTIL-SEWER-DESCRIPTION-PROVEN-TEXT	0	0	0
V-E-UTIL-SEWER-DESCRIPTION-TEXT	0	0	0

Name	Colour	Line Style	Line Weight
V-E-UTIL-SEWER-PIPE-AG-LINE	3	VT-SEWR-CL	1
V-E-UTIL-SEWER-PIPE-AG-POINT	3	0	0
V-E-UTIL-SEWER-PIPE-AG-QLA	3	VT-SEWR-AG (A)	2
V-E-UTIL-SEWER-PIPE-AG-QLB	3	VT-SEWR-AG (B)	2
V-E-UTIL-SEWER-PIPE-AG-QLC	3	VT-SEWR-AG (C)	2
V-E-UTIL-SEWER-PIPE-AG-QLD	3	VT-SEWR-AG (D)	2
V-E-UTIL-SEWER-PIPE-UG-LINE	3	VT-SEWR-UG	1
V-E-UTIL-SEWER-PIPE-UG-POINT	3	0	0
V-E-UTIL-SEWER-PIPE-UG-PROVEN-LINE	3	VT-SEWR-UG	1
V-E-UTIL-SEWER-PIPE-UG-QLA	3	VT-SEWR-UG (A)	2
V-E-UTIL-SEWER-PIPE-UG-QLB	3	VT-SEWR-UG (B)	2
V-E-UTIL-SEWER-PIPE-UG-QLC	3	VT-SEWR-UG (C)	2
V-E-UTIL-SEWER-PIPE-UG-QLD	3	VT-SEWR-UG (D)	2
V-E-UTIL-SEWER-PIT-LINE	3	0	1
V-E-UTIL-SEWER-PIT-POINT	3	0	0
V-E-UTIL-SEWER-PROVEN-LINE	3	VT-SEWR-CL	1
V-E-UTIL-SEWER-UNIDENTIFIED-LINE	3	0	1
V-E-UTIL-SEWER-UNIDENTIFIED-POINT	3	0	0
V-E-UTIL-SIGNAL-AG-QLA	133	VT-SIG-AG (A)	2
V-E-UTIL-SIGNAL-AG-QLB	133	VT-SIG-AG (B)	2
V-E-UTIL-SIGNAL-AG-QLC	133	VT-SIG-AG (C)	2
V-E-UTIL-SIGNAL-AG-QLD	133	VT-SIG-AG (D)	2
V-E-UTIL-SIGNAL-CONDUIT	133	VT-SIG-CL	2
V-E-UTIL-SIGNAL-CONDUIT- POWER	133	VT-SIG-POW-CL	2
V-E-UTIL-SIGNAL-POWER	133	VT-SIG-POW-UG	2
V-E-UTIL-SIGNAL-UG	133	VT-SIG-UG	2

Name	Colour	Line Style	Line Weight
V-E-UTIL-SIGNAL-UG-QLA	133	VT-SIG-UG (A)	2
V-E-UTIL-SIGNAL-UG-QLB	133	VT-SIG-UG (B)	2
V-E-UTIL-SIGNAL-UG-QLC	133	VT-SIG-UG (C)	2
V-E-UTIL-SIGNAL-UG-QLD	133	VT-SIG-UG (D)	2
V-E-UTIL-TELCO-CABLE-OH-LINE	10	VT-OH-POWER	1
V-E-UTIL-TELCO-CABLE-OH-POINT	10	0	0
V-E-UTIL-TELCO-CABLE-OH-PROVEN-LINE	10	VT-OH-POWER	1
V-E-UTIL-TELCO-CABLE-OH-QLA	10	VT-TELE-AG (A)	2
V-E-UTIL-TELCO-CABLE-OH-QLB	10	VT-TELE-AG (B)	2
V-E-UTIL-TELCO-CABLE-OH-QLC	10	VT-TELE-AG (C)	2
V-E-UTIL-TELCO-CABLE-OH-QLD	10	VT-TELE-AG (D)	2
V-E-UTIL-TELCO-CABLE-UG-LINE	10	VT-TELE-UG	1
V-E-UTIL-TELCO-CABLE-UG-POINT	10	0	0
V-E-UTIL-TELCO-CABLE-UG-PROVEN-LINE	10	VT-TELE-UG	1
V-E-UTIL-TELCO-CABLE-UG-QLA	10	VT-TELE-UG (A)	2
V-E-UTIL-TELCO-CABLE-UG-QLB	10	VT-TELE-UG (B)	2
V-E-UTIL-TELCO-CABLE-UG-QLC	10	VT-TELE-UG (C)	2
V-E-UTIL-TELCO-CABLE-UG-QLD	10	VT-TELE-UG (D)	2
V-E-UTIL-TELCO-DESCRIPTION-PROVEN-TEXT	0	0	0
V-E-UTIL-TELCO-DESCRIPTION-TEXT	0	0	0
V-E-UTIL-TELCO-MARKER-POST-LINE	10	2	1
V-E-UTIL-TELCO-MARKER-POST-POINT	10	0	0
V-E-UTIL-TELCO-OPTIC-PROVEN-LINE	10	0	0
V-E-UTIL-TELCO-PHONE-BOX-LINE	10	0	1
V-E-UTIL-TELCO-PHONE-BOX-POINT	10	0	0
V-E-UTIL-TELCO-PHONE-LINE	7	0	1
V-E-UTIL-TELCO-PHONE-POINT	7	0	1
V-E-UTIL-TELCO-PHONE-SIGNAL-WIRE-LINE	10	0	1
V-E-UTIL-TELCO-PILLAR-LINE	10	0	1

Name	Colour	Line Style	Line Weight
V-E-UTIL-TELCO-PILLAR-POINT	10	0	0
V-E-UTIL-TELCO-PIT-LARGE-POINT	10	0	1
V-E-UTIL-TELCO-PIT-LINE	10	0	1
V-E-UTIL-TELCO-PIT-SMALL-POINT	10	0	1
V-E-UTIL-TELCO-POLE-POINT	10	0	0
V-E-UTIL-TELCO-PROVEN-LINE	10	VT-TELE-CL	1
V-E-UTIL-TELCO-UNIDENTIFIED-LINE	10	0	1
V-E-UTIL-TELCO-UNIDENTIFIED-POINT	10	0	1
V-E-UTIL-UNCL-ABANDONED-LINE	3	VT-ABAN-UG	0
V-E-UTIL-UNCL-ABANDONED-POINT	3	0	0
V-E-UTIL-UNCL-BORE-LINE	8	0	1
V-E-UTIL-UNCL-BORE-POINT	8	0	1
V-E-UTIL-UNCL-DESCRIPTION-PROVEN-TEXT	0	0	0
V-E-UTIL-UNCL-DESCRIPTION-TEXT	0	0	0
V-E-UTIL-UNCL-DISCLAIMER-POINT	7	0	0
V-E-UTIL-UNCL-PIT-LINE	7	0	1
V-E-UTIL-UNCL-PIT-POINT	7	0	1
V-E-UTIL-UNCL-POLE-POINT	7	0	0
V-E-UTIL-UNCL-PROVEN-LINE	7	VT-UNID-CL	0
V-E-UTIL-UNCL-STAY-LINE	7	0	1
V-E-UTIL-UNCL-STAY-POINT	7	0	0
V-E-UTIL-UNCL-UNIDENTIFIED-LINE	7	VT-UNID-CL	1
V-E-UTIL-UNCL-UNIDENTIFIED-POINT	7	0	0
V-E-UTIL-WATER-DESCRIPTION-PROVEN-TEXT	0	0	0
V-E-UTIL-WATER-DESCRIPTION-TEXT	0	0	0
V-E-UTIL-WATER-FIRE-HYDRANT-LINE	8	0	1
V-E-UTIL-WATER-FIRE-HYDRANT-POINT	8	0	1
V-E-UTIL-WATER-FIRE-PLUG-POINT	8	0	0
V-E-UTIL-WATER-MARKER-POST-LINE	8	0	1
V-E-UTIL-WATER-MARKER-POST-POINT	8	0	0
V-E-UTIL-WATER-METER-POINT	8	0	0
V-E-UTIL-WATER-PIPE-AG-LINE	8	VT-WATR-CL	0
V-E-UTIL-WATER-PIPE-AG-POINT	8	0	0
V-E-UTIL-WATER-PIPE-AG-QLA	8	VT-WATR-AG (A)	2

Name	Colour	Line Style	Line Weight
V-E-UTIL-WATER-PIPE-AG-QLB	8	VT-WATR-AG (B)	2
V-E-UTIL-WATER-PIPE-AG-QLC	8	VT-WATR-AG (C)	2
V-E-UTIL-WATER-PIPE-AG-QLD	8	VT-WATR-AG (D)	2
V-E-UTIL-WATER-PIPE-UG-LINE	8	VT-WATR-UG	1
V-E-UTIL-WATER-PIPE-UG-POINT	8	0	0
V-E-UTIL-WATER-PIPE-UG-PROVEN-LINE	8	VT-WATR-UG	0
V-E-UTIL-WATER-PIPE-UG-QLA	8	VT-WATR-UG (A)	2
V-E-UTIL-WATER-PIPE-UG-QLB	8	VT-WATR-UG (B)	2
V-E-UTIL-WATER-PIPE-UG-QLC	8	VT-WATR-UG (C)	2
V-E-UTIL-WATER-PIPE-UG-QLD	8	VT-WATR-UG (D)	2
V-E-UTIL-WATER-PROVEN-LINE	8	VT-WATR-CL	0
V-E-UTIL-WATER-STOP-VALVE-POINT	8	0	1
V-E-UTIL-WATER-TAP-POINT	8	0	0
V-E-UTIL-WATER-UNIDENTIFIED-LINE	8	0	1
V-E-UTIL-WATER-UNIDENTIFIED-POINT	8	0	0
V-E-VEGN-GROUP-DESCRIPTION-TEXT	0	0	0
V-E-VEGN-GROUP-DRIP-LINE	2	0	1
V-E-VEGN-GROUP-DRIP-POINT	2	0	0
V-E-VEGN-GROUP-PLANTATION-LINE	2	0	1
V-E-VEGN-GROUP-PLANTATION-POINT	2	0	0
V-E-VEGN-SINGLE-DESCRIPTION-TEXT	0	0	0
V-E-VEGN-SINGLE-SHRUB-LINE	2	0	1
V-E-VEGN-SINGLE-SHRUB-POINT	2	0	0
V-E-VEGN-SINGLE-TREE-LINE	2	0	1
V-E-VEGN-SINGLE-TREE-POINT	2	0	1
V-X-CADASTRAL-TITLEBLOCK-0-18-LINE	3	0	0
V-X-CADASTRAL-TITLEBLOCK-0-18-POINT	3	0	0
V-X-CADASTRAL-TITLEBLOCK-0-25-LINE	4	0	0
V-X-CADASTRAL-TITLEBLOCK-0-25-POINT	4	0	0
V-X-CADASTRAL-TITLEBLOCK-0-35-LINE	2	0	0
V-X-CADASTRAL-TITLEBLOCK-0-35-POINT	2	0	0
V-X-CADASTRAL-TITLEBLOCK-0-50-LINE	5	0	0

Name	Colour	Line Style	Line Weight
V-X-CADASTRAL-TITLEBLOCK-0-50-POINT	5	0	0
V-X-CADASTRAL-TITLEBLOCK-0-70-LINE	1	0	0
V-X-CADASTRAL-TITLEBLOCK-0-70-POINT	1	0	0
V-X-CADASTRAL-TITLEBLOCK-1-2-TEXT	6	0	0
V-X-CADASTRAL-TITLEBLOCK-1-8-TEXT	3	0	0
V-X-CADASTRAL-TITLEBLOCK-2-5-TEXT	4	0	0
V-X-CADASTRAL-TITLEBLOCK-3-5-TEXT	2	0	0
V-X-CADASTRAL-TITLEBLOCK-5-0-TEXT	5	0	0
V-X-CADASTRAL-TITLEBLOCK-7-0-TEXT	1	0	0
V-X-CADASTRAL-TITLEBLOCK-DRAFT-POINT	3	0	0
V-X-SURVEY-REFERENCE-CLIP-BOUNDARY-LINE	12	2	0
V-X-SURVEY-TITLEBLOCK-FRAME-THICK-LINE	2	0	2
V-X-SURVEY-TITLEBLOCK-FRAME-THIN-LINE	3	0	0
V-X-SURVEY-TITLEBLOCK-GENERAL-TEXT	2	0	0
V-X-SURVEY-TITLEBLOCK-GRID-TEXT	4	0	0
V-X-SURVEY-TITLEBLOCK-LOGO-POINT	0	0	0
V-X-SURVEY-TITLEBLOCK-NORTH-DESCRIPTION-TEXT	3	0	0
V-X-SURVEY-TITLEBLOCK-NORTH-POINT	4	0	0
V-X-SURVEY-TITLEBLOCK-PLOT-CONTROL-LINE	8	3	2
V-X-SURVEY-TITLEBLOCK-REPORT-TEXT	3	0	0
V-X-SURVEY-TITLEBLOCK-SCALE-POINT	3	0	0
V-X-SURVEY-TITLEBLOCK-TAGS	0	0	0

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