

# Construction Traffic Management Plan

## Northern Connections -Traffic Operations

Line-wide Works Contract Sydney Metro City & Southwest

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### Document Approval

Rev.	Date	Prepared by	Reviewed by	Recommended by	Approved by	Remarks
A	15 Nov 2019	Mong Sim	Melanie Bowden	Paul Ryan	Adam Stuart	
B	10 Jan 2020	Mong Sim	Melanie Bowden	Paul Ryan	Adam Stuart	General update per review process.
C	7 Feb 2020	Mong Sim	Patrick Giblin	Paul Ryan	Adam Stuart	Additional comments.
0	28 Feb 2020	Mong Sim	Patrick Giblin	Melanie Bowden	Scott Hunter	Approved.
1	30 Sep 2020	Mong Sim	Patrick Giblin	Melanie Bowden	Scott Hunter	Minor updates.
2	29 Jan 2021	Mong Sim	Patrick Giblin	Melanie Bowden	Scott Hunter	App. G added for Brand St One Way proposal
3	1 April 2021	Mong Sim	Patrick Giblin	Melanie Bowden	Scott Hunter	Detour route update and program duration
Signature:						

## Details of Revision Amendments

### Document Control

The Project Director is responsible for ensuring that this plan is reviewed and approved. The Project Traffic Manager is responsible for updating this plan to reflect changes to legal and other requirements.

### Amendments

Any revisions or amendments must be approved by the Project Director and/or client before being distributed/implemented.

### Revision Details

Revision	Details
A	Issued to TTLG for stakeholder review.
B	Document title change. Vehicle movements table added. TCPs updated. Local roads usage clarification in consultation with Willoughby Council. Appendix D added.
C	Appendix E added for extend of parking impact. General clarifications/comments. Update to Orchard Rd TCP with the stop slow point removed at Berkeley Ct. Section 3.1 rephrased.
0	Approval by TfNSW.
1	Appendix C - Construcion route updated. Construction vehicles over 3.5 ton travelling between the Cleland Road compound to use Pacific Highway and not through Hampden Road to Brand Street per WCC preference. Figure 1 and Section 4 updated. Appendix F added.
2	Various Stages of Brand Street works. One Way proposal – long term One-Way (for drainage crossing and drainage oit) , short term One-Way ( , island reconstruction) milling and paving) and temporary traffic control (pavement marking) during construction. Appendix G is created for this work package.
3	Refinement of Appendix G. Detour route refinement per consultation with stakeholders. Additional side streets sign to improve local traffic flow. Work program revision.



## Table of Contents

<b>1. PART A – Management Systems, Compliance and CTMP Overview .....</b>	<b>4</b>
1.1. Structure of this Plan .....	4
1.2. Management and Planning Strategy .....	4
1.3. Compliance .....	4
1.4. Relevant Legislation .....	4
1.5. LW Project Overview and Scope.....	5
<b>2. PART B – Implementation .....</b>	<b>6</b>
2.1. Northern Connections Works Site Description .....	6
<b>3. Work Area Description (northern connections upgrade) .....</b>	<b>7</b>
3.1. Traffic Control During Planned Rail Closure.....	8
3.2. Traffic Control During Normal Operations .....	9
<b>4. Traffic and Transport Management .....</b>	<b>9</b>
4.1. Temporary Traffic Control .....	9
4.2. Parking .....	9
4.3. Pedestrians/Cyclists .....	9
4.4. Businesses / Residents Access .....	9
4.5. Buses Operations.....	9
4.6. Emergency Services .....	10
4.7. Construction Vehicles Route .....	10
<b>5. Systems Connect and Stakeholder Key Contacts.....</b>	<b>13</b>
<b>6. Communications and Community Strategy .....</b>	<b>13</b>
<b>7. Working Hours.....</b>	<b>14</b>
<b>8. Manage Emergencies.....</b>	<b>15</b>
<b>PART C – Appendices.....</b>	<b>16</b>
Appendix A. Design Drawings .....	16
Appendix B. Staging Plans and TCPs .....	17
Appendix C. Contruction Vehicles Route .....	18
Appendix D. Compliance Matrix .....	19
Appendix E. Potential parking impact diagram .....	20
Appendix F. Correspondence (attach as required) .....	21
Appendix G. Brand Street work submission. ....	22

## 1. PART A – Management Systems, Compliance and CTMP Overview

### 1.1. Structure of this Plan

This Construction Traffic Management Plan (CTMP) describes Systems Connect traffic management planning and compliance during the construction stage for the Sydney Metro City & Southwest.

<b>Part A: Overview</b>	This section clearly defines: <ul style="list-style-type: none"><li>• Project Overview, Objectives, Management and Compliance</li><li>• Overall project summary and overview</li></ul>
<b>Part B: Implementation</b>	This section outlines in detail the key aspects for Traffic Management on the Project including: <ul style="list-style-type: none"><li>• Implementation Details</li><li>• Traffic Impact Assessment</li><li>• Transport Management</li><li>• Communications</li></ul>
<b>Part C: Appendices</b>	This section provides the following Appendices: <ul style="list-style-type: none"><li>• Design/Staging drawings</li><li>• Copy of correspondence</li></ul>

This Construction and Traffic Management Plan (CTMP) forms part of the Systems Connect Integrated Management Systems.

### 1.2. Management and Planning Strategy

This CTMP dictates the overall traffic management plan including resources, processes and procedures during construction of Sydney Metro Chatswood to Sydenham works.

This Plan aims to address the following objectives:

- Local road staging and traffic management plan
- Obtaining relevant approvals, whether from Local Council, Transport for New South Wales (TfNSW), Sydney Coordination Office (SCO), Sydney Metro
- Specific community / stakeholder consultation process and community relations strategies for managing changed traffic conditions
- Potential road network impacts and the mitigation and management of them
- Auditing, inspections and monitoring the road network
- Fulfil the requirements of Principal's G10 Specification – Traffic and Transport Management
- Meet the contractual requirements
- Management of incidents
- Provide and facilitate a mechanism for the monitoring, ongoing regular review and updating of this CTMP.

### 1.3. Compliance

The CTMP is in compliance and is consistent with the following framework and applicable conditions. They are:

- Planning Approval Sydney Metro City and Southwest Sydenham to Bankstown.
- Critical State Significant Infrastructure (CSSI) Revised Environment Mitigation Measure
- Sydney Metro City and Southwest Construction Environment Management Framework
- Sydney Metro City and Southwest Construction Traffic Management Framework

### 1.4. Relevant Legislation

The key legislation relevant to traffic management includes:

- Environmental Planning and Assessment Act, 1979 (EPA Act)

- The Roads Act 1993.
- Heavy Vehicle National Law 2014
- Work Health and Safety (WHS) Act 2011
- Principal's General Specification G10 – Traffic and Transport Management
- Traffic Control at Worksites Manual Version 5.0
- Relevant AS and Austroads Guidelines

### 1.5. LW Project Overview and Scope

Line-wide Works (LW) is delivered by Systems Connect, a CPB Contractors and UGL Engineering Joint Venture. Systems Connect is delivering LW in four distinct portions as follows, and as described in detail in Section 1.3.

- Portion 1 – Sydney Metro Train Facilities (SMTF) North (Tallawong) expansion works
- Portion 2 – Sydney Metro Train Facilities (SMTF) South (Marrickville) stabling yard
- Portion 3 - Chatswood to Sydenham Works
- Portion 4 – Sydenham to Bankstown

The Sydney Metro City & Southwest (SMCSW) project will extend the current Metro North West which stops at Chatswood, to the central business district (CBD) and to Bankstown.

The SMCSW project is being delivered through a series of contracts for the tunnels, stations, line wide infrastructure and systems.

LW is a key component of the SMCSW project, with works taking place over the full length of the project as shown in Figure 2 between Chatswood and Sydenham.

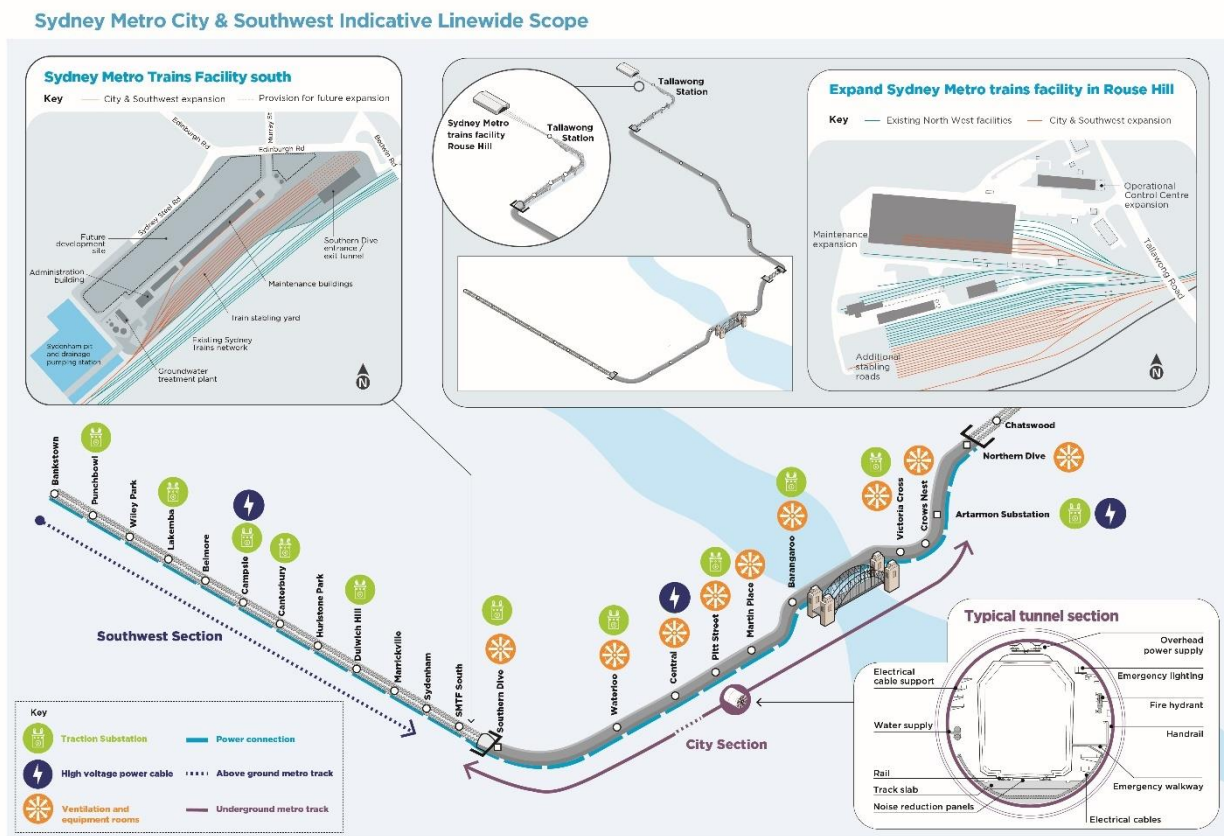


Figure 1. Line-wide Works Line Diagram

## 2. PART B – Implementation

### 2.1. Northern Connections Works Site Description

The northern connections upgrade site for the Northern Dive is located approximately between Ellis Street and Drake Street in Chatswood and Artarmon. The rail connections upgrade extremities is approximately 800m long inside the rail connections between Gordon Avenue and Brand Street as shown on Figure 2.

The northern connections upgrade works are listed below but not limited to:

- Retaining wall construction (transfer structure) and the like of bored piles, capping beam, shotcreting etc
- Earthworks and track construction
- Laying of new Sydney Metro tracks joining to the current Sydney Metro line ending south of Chatswood interchange
- Concrete and structural steel works
- Realignment of existing Sydney Trains down shore track to a new elevated alignment
- Removal of existing Sydney trains down shore line
- Electrical, structural and mechanical fittings
- Drainage, landscaping and other civils works (fencing etc)

These works require multiple access's into the rail connections via various existing entry/exit points.

Laydown areas supporting the logistics of work site including transportation of material from and into the rail connections will form part of the Northern Dive site operations.

The works required to complete the Northern Connection will be undertaken during both rail possessions and normal rail operations. Certain works which cannot be undertaken when the network is operational will be undertaken during rail possessions or closedowns. Other works, which is not impacted by rail operations will be undertaken during normal rail operations.

Works not associated with scheduled rail possessions will occur during normal construction hours of 0700-1800 Monday to Friday and 0800-1300 on Saturday. For works associated with rail possessions, these works will be typically scheduled between 2300 on Fridays and continue through to 0300 Monday, or otherwise as dictated by Sydney Trains.

Northern Connection construction work is due to commence in March 2020 and is scheduled to be completed by late 2022.

The northern dive building infrastructure construction will be detailed on a separate northern dive building infrastructure CTMP at a later stage.





Figure 2 – Locality map of the northern connections works (green). Northern dive building infrastructure work (brown) on a separate CTMP

### 3. Work Area Description (northern connections upgrade)

Access point to the rail connections is from current existing operational connections gates at:

- Mowbray Road gate
- Brand Street gate
- End of Drake Street

These entry points into the rail connections are existing and established gates. These gates are off existing roads and work vehicles are to enter and exit normally per standard road rules. Unless there is major work such as planned rail possession/closures, there is no anticipation of traffic controllers to manage the access points.

Hopetoun Avenue, Gordon Avenue, Nelson Street and Berkeley Circuit are in to be used during rail connections possessions. Mowbray Road gate will operate from the temporary signalised intersection. Of all these gates, Brand Street gate will be the most used gate with temporary traffic control operations during working hours.

Site compound at Cleland Street, Lambs Road and Valetta Lane are also used as a storage area. Access to the compound is minimal.



### 3.1. Traffic Control During Planned Rail Closure

During planned rail closures, the following streets are nominated as potential plant setup points e.g. crane setups/ concrete pump setups or similar:

- End of Gordon Avenue
- End of Nelson Street
- End of Berkeley Circuit
- End of Hopetoun Avenue

During mobilisation and demobilisation of crane / mobile plant for a planned rail closure, Gordon Avenue and Nelson Street off Pacific Highway southbound will be require Lane 1 to be closed allowing semi-trailers carrying counter weights for the mobile crane to temporarily stop and demobilise. Pacific Highway southbound – Lane 2 and Lane 3 – will then need to be temporarily managed as the semi reverses. Lane 2 and 3 are intermittently blocked (mobile lane closure) by a minimum of 2 tail vehicles with flashing lights allowing the semi ahead to manoeuvre. Turning radius of the semi will momentarily occupying Lane 2 and 3 as the semi reverses. This manoeuvre is less than one (1) minute. All temporary lane closure will be removed after the crane is setup. A maximum of 2 movements per the duration of each rail possession.

Lane closure for Pacific Highway will be night shift only and stop slow operations at Orchard Road will be dayshift and night shift. Pacific Highway southbound Lane 1 between Gordon Avenue and Nelson Street is proposed to be closed from 21:00 Friday night leading to the weekend rail possession and reopen by Saturday 05:00. Pacific Highway southbound lane 1 will again be required to be closed for demobilisation of the mobile crane from Sunday 21:00 and removed by Monday 05:00. Details of each closure to be coordinated with TfNSW/SCO as an ongoing coordination.

Mobile crane (or similar) setup point at Hopetoun Avenue and Berkeley Court, a temporary traffic control will be required for long vehicles up to 19m long to exit onto Orchard Road.

Vehicles lesser than a 19m semi entering Gordon Avenue and Nelson Street does not require any lane closure at Pacific Highway southbound.

A road occupancy license (ROL) and/or council permit will be applied for these areas as required.

Planned rail closure date are 3 March 2020, 13 June 2020, August 2020, October 2020, November 2020, January 2021, May 2021, August 2021, August 2021, November 2021, May 2022. Dates are subject to change and are provided as an estimate only.



Figure 3 – Crane (or similar) setting up areas at Gordon Ave, Nelson St, Hopetoun Ave and Berkeley Ct. (Refer to Appendix B).

### 3.2. Traffic Control During Normal Operations

Day to day works will predominantly use Brand Street as the primary access point to the site, similar to the current arrangement in use by other contractors.

Traffic Control will be established here, as and when required, to manage plant/material deliveries into and out of the site. Traffic control will be established following the regulatory requirements.

Laydown areas used for material storage, deliveries and handling will be established on site and accessed from Drake Street access gate and also Brand street access gate adjacent to Valetta Lane.

Hopetoun Avenue will potentially be used for concrete pump setups and concrete truck deliveries during normal operations. Again, traffic control will be established, as required, following regulatory requirements.

## 4. Traffic and Transport Management

### 4.1. Temporary Traffic Control

All temporary traffic control is in accordance to Roads and Maritime Services (RMS) Traffic Control at Worksite Manual.

### 4.2. Parking

Parking is not directly impacted during normal working hours. During rail closure work, parking at the end nominated side streets for plant set ups need to be occupied to provide extra space for plant and eliminate risks to the parked cars. The community engagement team will Liaise with the local community in advance of this.

It is known that existing parking is available along Orchard Road. Rail connections work does not impact the parking along Orchard Road. During rail closure work, minor parking may need to be taken to allow setting up of shadow vehicles and/or boom gates for stop slow operations.

Pacific Highway southbound between Fullers Road and Mowbray Road is a clearway Monday to Friday 6am to 7pm and 9am to 6pm Saturday, Sunday and public holiday. However section from Gordon Avenue to Nelson Street is signposted "No Parking" within the clearway signs posting area.

### 4.3. Pedestrians/Cyclists

Footpath are not closed during the work. During rail possessions, pedestrian movement at Frank Channon footpath parallel to the rail connections will be managed as required. There are no dedicated cycle route along the area thus no impact to cyclists.

### 4.4. Businesses / Residents Access

Work sections that are immediately adjacent to residents will be advised of the work. Each resident has their own individual/unique requirements. These consultations will be done ahead of time and processed accordingly. All arrangements will be completed per project procedures. There are no businesses addresses for the northern connections upgrade works.

### 4.5. Buses Operations

The closest bus stops within the perimeter of the work area along Pacific Highway southbound are bus stop # 206746 located between Sutherland Road and Gordon Avenue and bus stop # 206747 located 50m before Mowbray Road intersection. Bus stop # 206746 will be not impacted by Pacific Highway southbound Lane 1 closure during the staging of semis as the lane closure cones will leave a gap for the buses to turn into the bus stop. Frequency of the buses are shown below after 21:30 (assuming ROLs for Lane 1 closure is from 21:30).

Bus Route #	Fri night	Sat night	Sun night
143 Chatswood to Manly via Balgolah and St Leonards	18:15 last service	No service	No service
144 Chatswood to Manly via RNSH	21:32, 21:57, 22:22, 22:42, 23:05, 23:25, 23:55	21:57, 22:21, 22:42, 23:05, 23:25, 23:55, 00:29	21:32, 21:57, 22:21, 22:42, 23:05, 23:25, 23:55, 00:29
258 Chatswood to Lane Cove	08:00 last service	No service	No service



530 Chatswood to Burwood	21:40, 22:10, 23:10	22:13, 23:13	20:13, 21:13
533 Chatswood to Sydney Olympic Park via Rhodes and North Ryde	21:57, 22:28, 22:58, 23:28	21:58, 22:28, 22:58	No service
536 Chatswood to Gladesville via Hunters Hill	18:55 last service	No service	No service

During certain rail closures, there is a possibility that the Pacific Highway Lane 1 closure may be required on Friday night and Sunday night for the mobilisation and demobilisation process. As shown on the bus schedule above, bus services are not heavy and infrequent – which is manageable.

#### 4.6. Emergency Services

Emergency Services are not directly impacted from the works as there are no road closures in place.

#### 4.7. Construction Vehicles Route

The routes for construction vehicles are proposed to have the most direct and shortest access into the rail connections from the two main roads – Pacific Highway and Orchard Road. Volume of vehicles for the work is expected to be low and insignificant.



Figure 4 – Work vehicles travel route information (Refer to Appendix C)





Figure 3.7 : Hourly heavy vehicle numbers (arrival only) at the Chatswood dive site

Figure 5 – EIS Traffic volume to Chatwood dive site during tunnel construction

Drake St Gate															
	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00				
Utes In	1	1	1	1	1	1	1	1	1	1	1				
Trucks <12m in	1	1	1	1	1	1	1	1	1	1	1				
Trucks >12m in	1	1	1	1	1	1	1	1	1	1	1				
Utes out	1	1	1	1	1	1	1	1	1	1	1				
Trucks <12m out	1	1	1	1	1	1	1	1	1	1	1				
Trucks >12m out	1	1	1	1	1	1	1	1	1	1	1				
	6	6	6	6	6	6	6	6	6	6	6				
Brand St Gate															
	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00				
Utes In	2	1	1	1	1	1	1	1	1	1	1				
Trucks <12m in	3	3	3	3	3	3	3	3	3	3	0				
Trucks >12m in	0	0	0	1	1	0	0	0	0	0	0				
Utes out	0	1	1	1	1	1	1	1	1	1	2				
Trucks <12m out	0	3	3	3	3	3	3	3	3	3	3				
Trucks >12m out	0	0	0	0	1	1	0	0	0	0	0				
	5	8	8	9	10	9	8	8	8	8	6				
Valette St Gate															
	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00				
Utes In	1	1	0	0	1	1	0	0	0	0	0				
Trucks <12m in	1	1	0	0	1	1	0	0	0	0	0				
Trucks >12m in	0	0	0	0	0	0	0	0	0	0	0				
Utes out	1	1	0	0	1	1	0	0	0	0	0				
Trucks <12m out	1	1	0	0	1	1	0	0	0	0	0				
Trucks >12m out	0	0	0	0	0	0	0	0	0	0	0				
	4	4	0	0	4	4	0	0	0	0	0				
Mowbray Road Gate															
	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00				
Utes In	2	2	0	0	0	2	0	0	0	0	0				
Trucks <12m in	0	0	0	0	0	0	0	0	0	0	0				
Trucks >12m in	0	0	0	0	0	0	0	0	0	0	0				
Utes out	0	0	0	0	0	2	0	0	0	0	0				
Trucks <12m out	0	0	0	0	0	0	0	0	0	0	0				
Trucks >12m out	0	0	0	0	0	0	0	0	0	0	0				
	2	2	0	0	0	4	0	0	0	0	0				
Cleland St Gate															
	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00				
Utes In	8	2	2	2	2	2	2	2	2	2	2				
Trucks <12m in	0	0	0	0	0	0	0	0	0	0	0				
Trucks >12m in	2	0	0	0	0	0	0	0	0	0	0				
Utes out	0	2	2	2	2	2	2	2	2	2	2				
Trucks <12m out	0	0	0	0	0	0	0	0	0	0	0				
Trucks >12m out	2	0	0	0	0	0	0	0	0	0	0				
	12	4	4	4	4	4	4	4	4	4	4				
Lambs Road Gate															
	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00				
Utes In	2	0	0	0	0	0	2	0	0	0	0				
Trucks <12m in	1	0	0	0	0	0	1	0	0	0	0				
Trucks >12m in	0	0	0	0	0	0	0	0	0	0	0				
Utes out	2	0	0	0	0	0	2	0	0	0	0				
Trucks <12m out	1	0	0	0	0	0	1	0	0	0	0				
Trucks >12m out	0	0	0	0	0	0	0	0	0	0	0				
	6	0	0	0	0	0	6	0	0	0	0				

Table 1. Construction traffic movement during normal construction days.

Construction traffic generated from the northern connections works are not impacting the general network performance due to the nature of northern connections upgrade is not a volume generating work (no spoil, no mass haul) and does not produce a constant traffic flow cycle/pattern to be modelled/analysed for. Northern connections traffic is a “get-in” into the rail connections gates and “get-out” of the rail connections gates during working hours and no large traffic movements in between in and out gap. Construction traffic is also distributed over the various gates along the connections. This statement is consistent and aligned with EIS Chapter 8 Section 8.4.6 which acknowledged ...“It is anticipated there would be about six vehicles per hour using these access and egress points on an occasional basis to carry out construction of the northern surface works. This volume is relatively minor and would not result in impacts to the performance of the surrounding road network.”

[illegible]

## 5. Systems Connect and Stakeholder Key Contacts

Name	Role	Contact Details
Carl Mella	Sydney Metro Integratin Leader	0429 505 970
Jake Coles	Sydney Coordination Office – Operations Manager	0466 454 819
Stephen Brown	Sydney Coordination Office - Precinct Project Manager	0457 809 028
Phil Brogan / Ken Hind	Sydney Metro – Traffic Advisors	0401 719 632 0416 797
Gordon Farely	Willoughby Council – Traffic & Transport Team Leader	02 9707 9000
Matt Billings	Systems Connect – Environment Manager	0428 781 599
Simon Tibbett	Systems Connect – Area Manager	0457 761 648
Craig Godwin	Systems Connect – Safety Manager	0458 498 107
Svetlana Paunovic	Systems Connect – Acting Community Manager	0438 540 245
Scott Francis	Systems Connect – Superintendant	0429 901 489
Mona Sim	Systems Connect – Traffic Engineer	0448 378 883

Systems Connect will meet the reasonable needs and desires of the community for information on any changed traffic conditions, cyclist and pedestrian impacts and property access arrangement. Systems Connect will ensure that the public and other key stakeholders are informed of planned traffic arrangements, including any activities which may result in delays.

The aim of consultation and broad communication on traffic and access matters is to:

- Provide timely, accurate and comprehensive traffic information using all available media to inform road users and the community of the project's traffic impact mitigation measures.

Ongoing consultation with stakeholders will ensure that effective traffic management measures are developed and implemented to minimise disruption and inconvenience.

Systems Connect will coordinate engagement with Sydney Metro and the members of the TTLG to enable the local community and other stakeholders to receive timely and accurate information associated traffic and transport issues.

Tool	Purpose	Frequency
Traffic alert emails	Email alerts to TfNSW via the Transport Management Centre, Council, transport operators and emergency services to advise of major traffic changes including road or lane closures and detours, incidents or undue congestion	5 business days prior to changes As soon as practicable following incidents or undue congestion
Advertisements	To inform of significant traffic changes, detours and traffic disruptions as required to comply with approvals; in local newspapers, radio and project website	5 business days prior to changes
Letterbox notifications	Notification letters to inform local residents and businesses potentially affected by planned traffic changes	7 business days prior to changes
Community emails	To inform and update the community of project progress, milestones, activities planned for the following month, current and upcoming traffic changes	Monthly
Community information line	Access to the project team during construction hours with message service after hours via an 1800 number	N/A
(Transport for New South Wales) TfNSW Sydney Metro website	Systems Connect will provide information in electronic format suitable to be uploaded onto the TfNSW Sydney Metro website, including copies of advertisements, traffic alerts, notification letters and other public material related to the works	To coincide with distribution
Systems Connect website	Information about the SMTF expansion construction activities will be placed on the Systems Connect website including information about traffic changes, and executive summaries of publicly available reports relating to the project activities.	As required

The table above provides a guide to inform the community of changes to road and traffic conditions. It also provides a summary of the purpose and frequency of each method of communication.

## 7. Working Hours

The standard working hours 7am – 6pm on weekdays and 8am – 1pm on Saturdays. Some activities will need to be undertaken outside of these hours.

Construction Activity	Construction Hours / Comments
Standard construction hours	Monday to Friday: 7am – 6pm Saturdays: 8am to 1pm Sundays & Public Holidays: No work
Standard out of hours	Saturday afternoons: 1pm – 5pm Sundays: 8am – 5pm
Out of hours (Rail possessions etc)	Friday night to Monday morning or TBA

## 8. Manage Emergencies

Systems Connect acknowledge the inevitable nature of emergencies and their potentially significant social, economic and environmental consequences. Accordingly, we are aware that the NSW Government has enacted the State Emergency & Rescue Management Act 1989 to support emergency management activities.

In NSW, the agencies primarily responsible for controlling hazards/emergencies are:

Unplanned Incident Agency Responsibility	
Law Enforcement / Emergencies	NSW Police Force
Fire	Fire and Rescue / Rural Fire Service NSW
Hazardous Materials	Fire and Rescue NSW
Flood	NSW State Emergency Service
Storm and Tempest	NSW State Emergency Service

## **PART C – Appendices**

### **Appendix A. Design Drawings**

	1	2	3	4	5	6	7	8	9	10	11	12																																																																	
A	<div>ARTARMON TO CHATSWOOD</div> <div>NORTH SHORE LINE - 10.560km TO 11.600km</div> <div>NORTHERN CORRIDOR WORKS - PORTION 7A</div> <div>EARTHWORKS INTERFACES</div>												A																																																																
B													B																																																																
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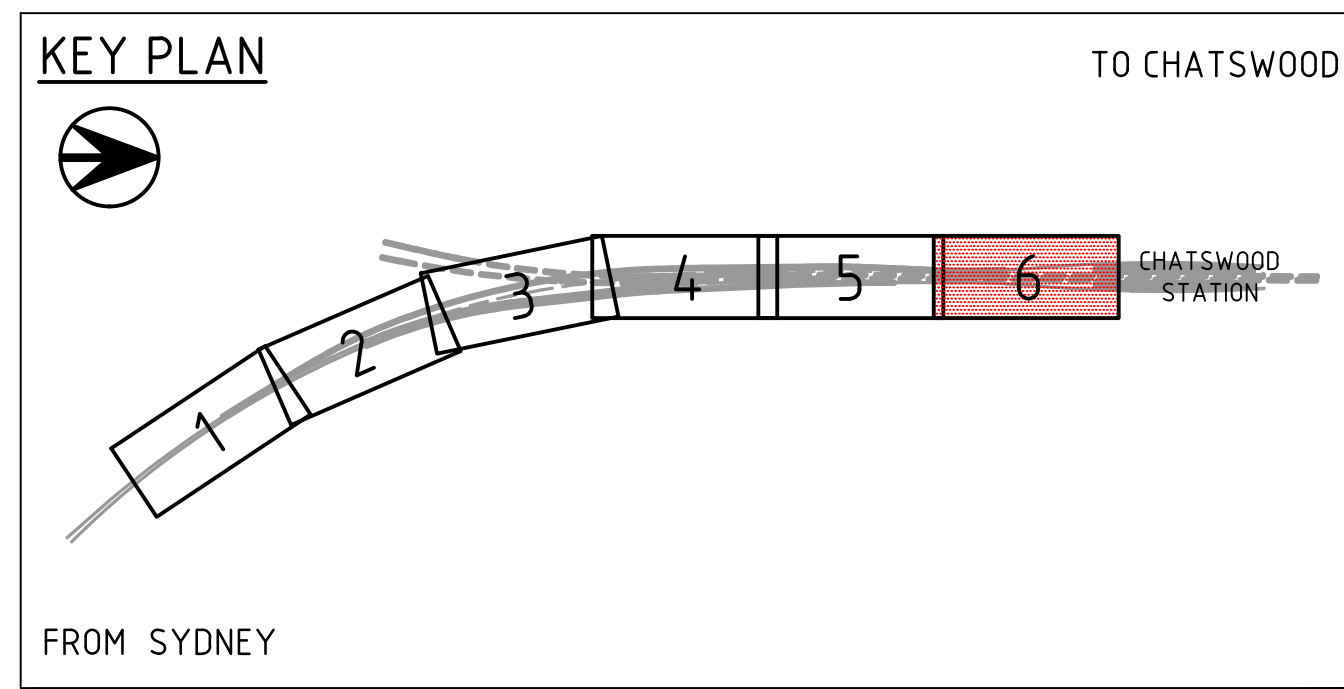
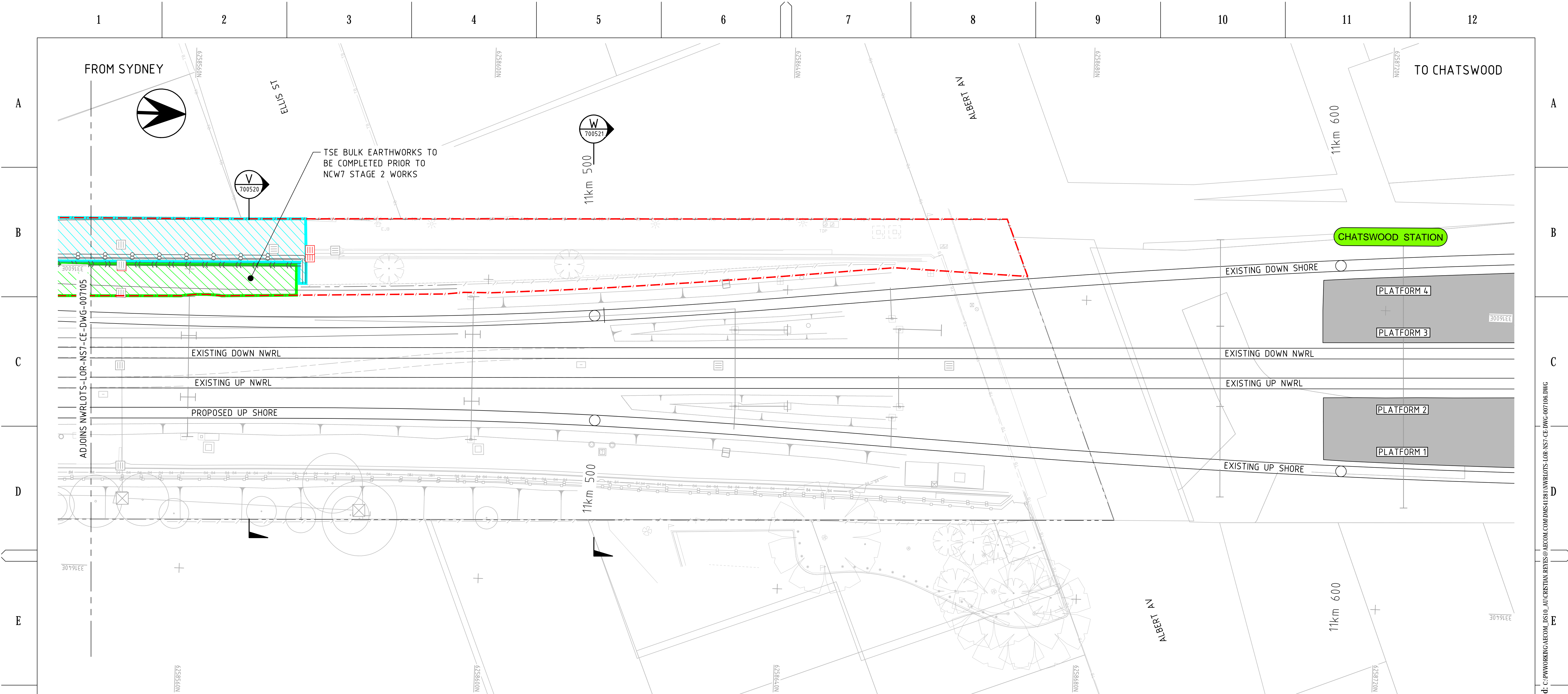





















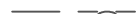










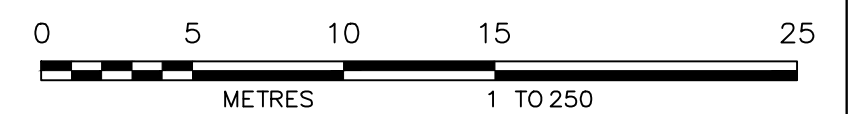


## LEGEND

	EXISTING RAIL TRACK		NEW CESS DRAIN
	PERMANENT RAIL TRACK		NEW BATTER INTERFACE
	TEMPORARY TRACK		NEW RETAINING WALL
	RAIL PROPERTY BOUNDARY		NEW EARTHWORKS DESIGN STRING
	TSE CONTRACTOR BOUNDARY FENCE		BATTER TICK
	EXISTING OHWS		EXTENT OF DIVE STRUCTURE BY TSE
	NEW OHWS		NORTHERN TRANSFER STRUCTURE
	EXISTING FENCE		TSE CONTRACTOR WORKS AREA TO FINISHED SURFACE LEVEL
	EXISTING ACCESS GATE		TSE CONTRACTOR WORKS TO BULK TEMPORARY EARTHWORKS LEVEL
	EXISTING DRAINAGE INLET PIT		
	EXISTING DRAINAGE INSPECTION PIT		
	NEW DRAINAGE INSPECTION PIT		
	NEW DRAINAGE INLET PIT		

NOTES:

1. ALL CHAINAGES QUOTED ARE TAKEN FROM THE EXISTING DOWN SHORE TRACK.
2. THE EARTHWORKS AND FORMATION DESIGN SHOWN IS BASED ON THE AFC ISSUE DATED 12.09.2018.
3. THE EARTHWORKS AND FORMATION DESIGN DOES NOT REFLECT CHANGES RESULTING FROM CURRENT OR PROPOSED VARIATIONS FOR THE VERTICAL REALIGNMENT OF THE RAIL, THE REUSE OF EXISTING FORMATION, OR THE NARROWING OF THE FORMATION.
4. EXTENT OF WORKS BY EACH CONTRACTOR DEFINED BY SYDNEY METRO MARKED PLANS RECEIVED 6.07.2018 & AMENDED ON 18.10.2018.
5. THE TSE CONTRACT BOUNDARY IS BASED ON DRAWING xd-srt-pba-30\_shc-ce-plan-LOR Northern Corridor Fencing.dwg
6. TSE DIVE STRUCTURE MODEL IS IMPORTED FROM DRAWING SMCSWTSE-JCG-DCH-DM-DWG-005307.dwg RECEIVED 30.07.2018
7. TSE WALLS ARE IMPORTED FROM SMCSWTSE-JAB-NCW-DN-MOD-341007- Surface.12da RECEIVED 13.06.2018
8. TSE BULK EARTHWORKS LEVELS SET A MINIMUM OF 550mm BELOW THE PROPOSED TOP OF FORMATION LEVEL. WHERE FORMATION BY OTHERS THE STAGE 3 CONTRACTOR IS REQUIRED TO EXCAVATE A FURTHER 100mm TO PAVEMENT SUBGRADE LEVEL PRIOR TO FORMATION PAVEMENT CONSTRUCTION.
9. STAGING OF TSE WORKS TO BE DETERMINED BY TSE.
10. TEMPORARY SURFACE DRAINAGE FOR TSE BULK EARTHWORKS LEVELS TO BE DESIGNED BY TSE.



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DRAWN	<u>C. REYES</u>
DESIGNED	<u>B. KLEM</u>
DRG CHECK	<u>P. ADAMS</u>
DESIGN CHECK	<u>B. DEWIT</u>
APPROVED	<u>T. LENNON</u>

<sup>c</sup> *ARTARMON TO CHATSWOOD*

NORTH SHORE LINE - 10.560KM TO 11.600KM  
NORTHERN CORRIDOR WORKS - 7A  
EARTHWORKS INTERFACES  
PLAN

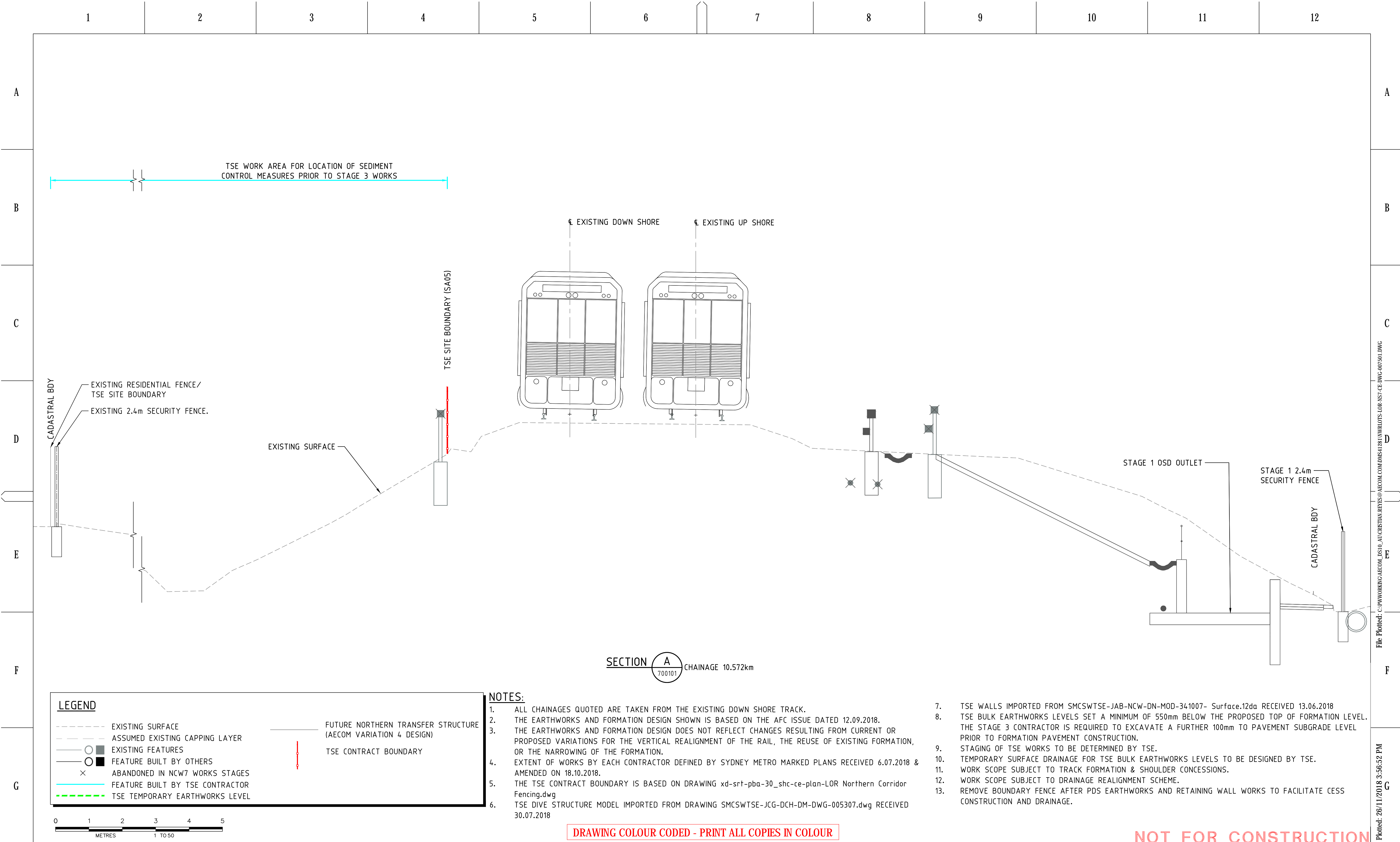
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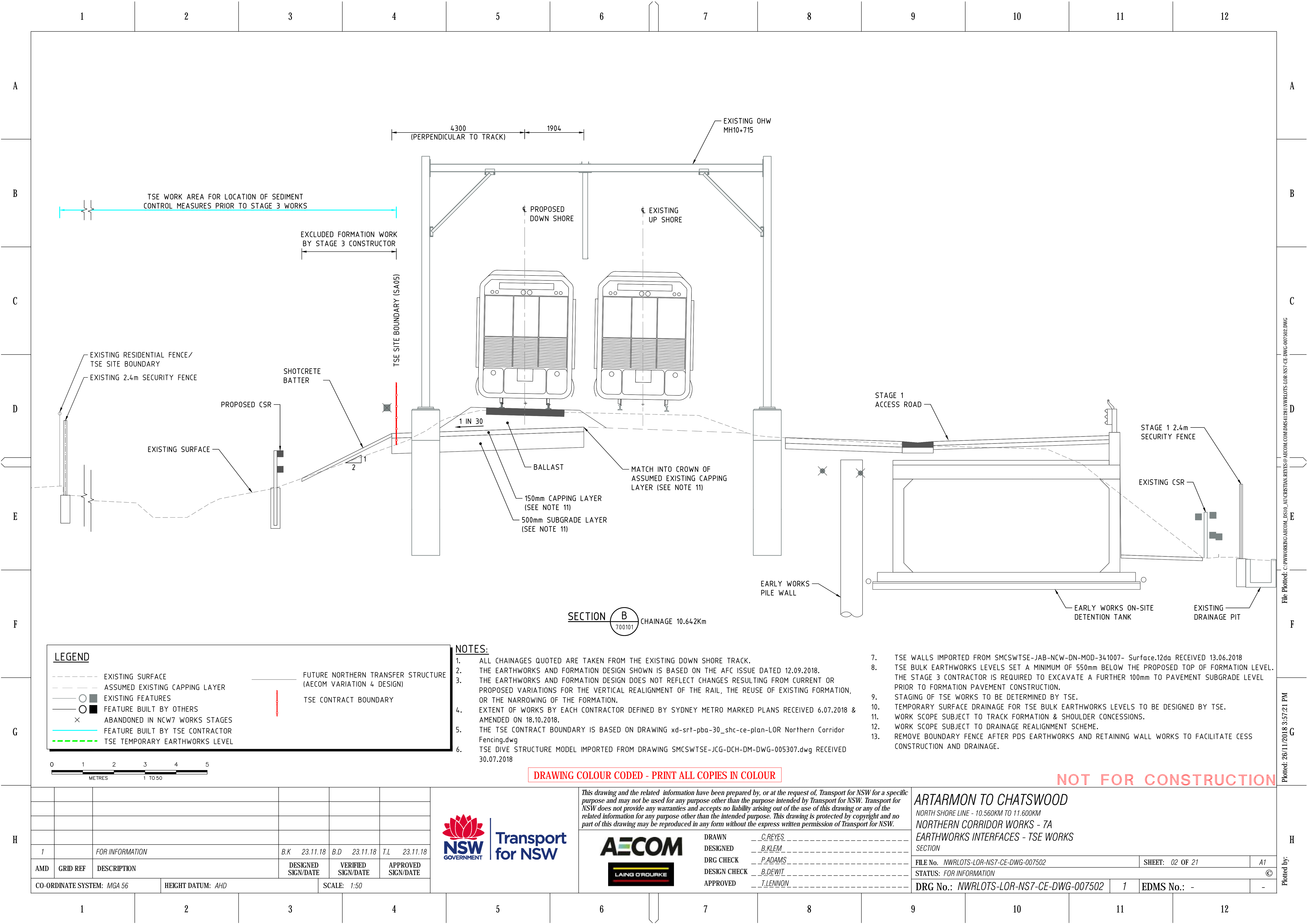
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LEGEND					
---	EXISTING SURFACE	---	FUTURE NORTHERN TRANSFER STRUCTURE (AECOM VARIATION 4 DESIGN)		
---	ASSUMED EXISTING CAPPING LAYER	---	TSE CONTRACT BOUNDARY		
---	EXISTING FEATURES	---			
---	FEATURE BUILT BY OTHERS	---			
×	ABANDONED IN NCW7 WORKS STAGES	---			
---	FEATURE BUILT BY TSE CONTRACTOR	---			
---	TSE TEMPORARY EARTHWORKS LEVEL	---			



NOTES:

1. ALL CHAINAGES QUOTED ARE TAKEN FROM THE EXISTING DOWN SHORE TRACK.
2. THE EARTHWORKS AND FORMATION DESIGN SHOWN IS BASED ON THE AFC ISSUE DATED 12.09.2018.
3. THE EARTHWORKS AND FORMATION DESIGN DOES NOT REFLECT CHANGES RESULTING FROM CURRENT OR PROPOSED VARIATIONS FOR THE VERTICAL REALIGNMENT OF THE RAIL, THE REUSE OF EXISTING FORMATION, OR THE NARROWING OF THE FORMATION.
4. EXTENT OF WORKS BY EACH CONTRACTOR DEFINED BY SYDNEY METRO MARKED PLANS RECEIVED 6.07.2018 & AMENDED ON 18.10.2018.
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6. TSE DIVE STRUCTURE MODEL IMPORTED FROM DRAWING SMCSWTSE-JCG-DCH-DM-DWG-005307.dwg RECEIVED 30.07.2018

7. TSE WALLS IMPORTED FROM SMCSWTSE-JAB-NCW-DN-MOD-341007- Surface.12da RECEIVED 13.06.2018
8. TSE BULK EARTHWORKS LEVELS SET A MINIMUM OF 550mm BELOW THE PROPOSED TOP OF FORMATION LEVEL. THE STAGE 3 CONTRACTOR IS REQUIRED TO EXCAVATE A FURTHER 100mm TO PAVEMENT SUBGRADE LEVEL PRIOR TO FORMATION PAVEMENT CONSTRUCTION.
9. STAGING OF TSE WORKS TO BE DETERMINED BY TSE.
10. TEMPORARY SURFACE DRAINAGE FOR TSE BULK EARTHWORKS LEVELS TO BE DESIGNED BY TSE.
11. WORK SCOPE SUBJECT TO TRACK FORMATION & SHOULDER CONCESSIONS.
12. WORK SCOPE SUBJECT TO DRAINAGE REALIGNMENT SCHEME.
13. REMOVE BOUNDARY FENCE AFTER PDS EARTHWORKS AND RETAINING WALL WORKS TO FACILITATE CESS CONSTRUCTION AND DRAINAGE.

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DESIGNED	---	B.KLEM
DRG CHECK	---	P.ADAMS
DESIGN CHECK	---	B.DEWIT
APPROVED	---	T.LENNON

ARTARMON TO CHATSWOOD

NORTH SHORE LINE - 10.560KM TO 11.600KM  
NORTHERN CORRIDOR WORKS - 7A  
EARTHWORKS INTERFACES - TSE WORKS  
SECTION

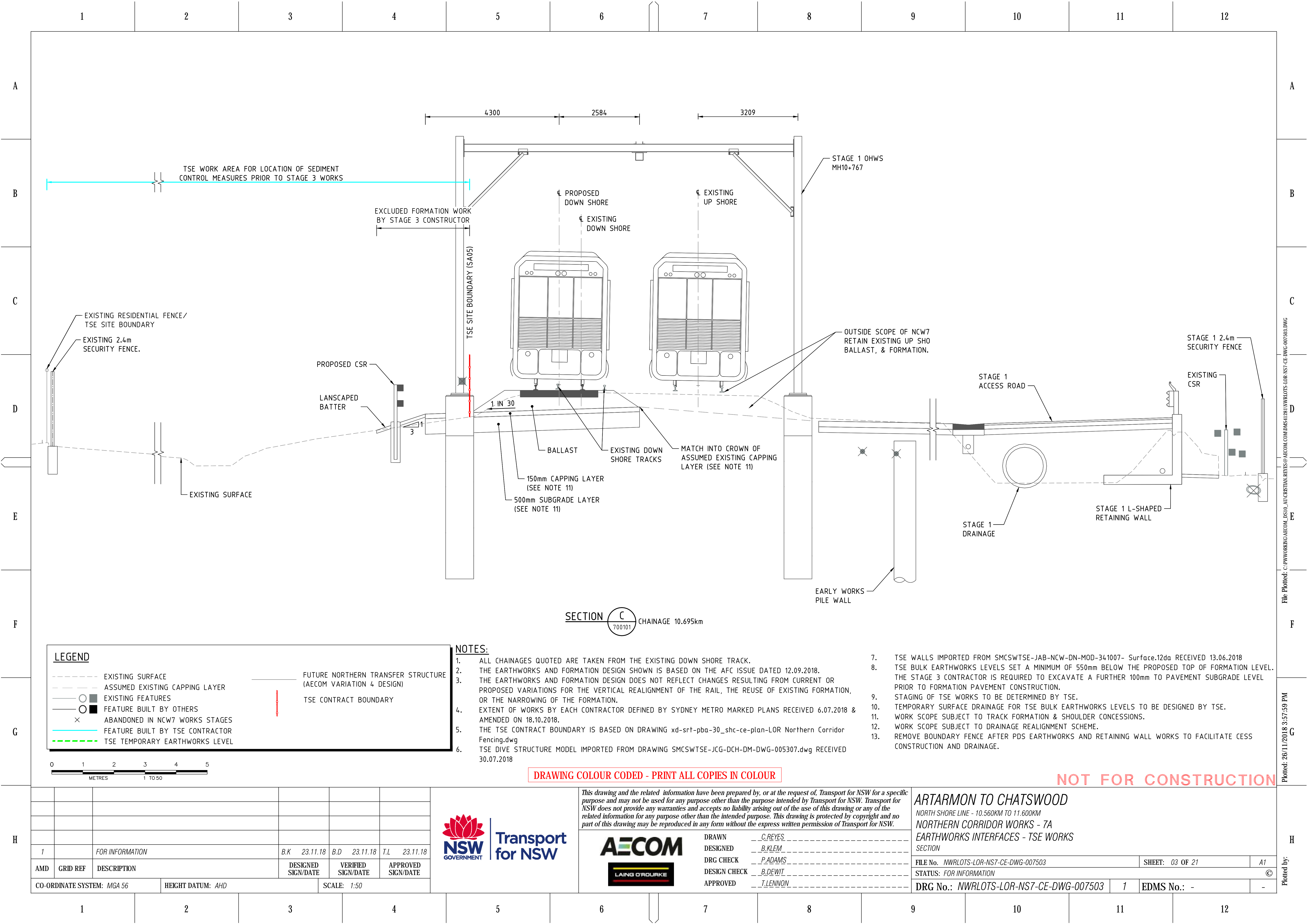
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LEGEND

EXISTING SURFACE

ASSUMED EXISTING CAPPING LAYER

EXISTING FEATURES

FEATURE BUILT BY OTHERS

ABANDONED IN NCW7 WORKS STAGES

FEATURE BUILT BY TSE CONTRACTOR

TSE TEMPORARY EARTHWORKS LEVEL

FUTURE NORTHERN TRANSFER STRUCTURE (AECOM VARIATION 4 DESIGN)

TSE CONTRACT BOUNDARY

- NOTES:
1.

ALL CHAINAGES QUOTED ARE TAKEN FROM THE EXISTING DOWN SHORE TRACK.
2.

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3.

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AECOM

LAING O'Rourke

DRAWN

DESIGNED

DRG CHECK

DESIGN CHECK

APPROVED

C.REYES

B.KLEM

P.ADAMS

B.DEWIT

T.LENNON

ARTARMON TO CHATSWOOD

NORTH SHORE LINE - 10.560KM TO 11.600KM

NORTHERN CORRIDOR WORKS - 7A

EARTHWORKS INTERFACES - TSE WORKS

SECTION

FILE No.

DRG No.:

NWRLOTS-LOR-NS7-CE-DWG-007503

1

EDMS No.:

-

SHEET:

03 OF 21

A1

STATUS:

FOR INFORMATION

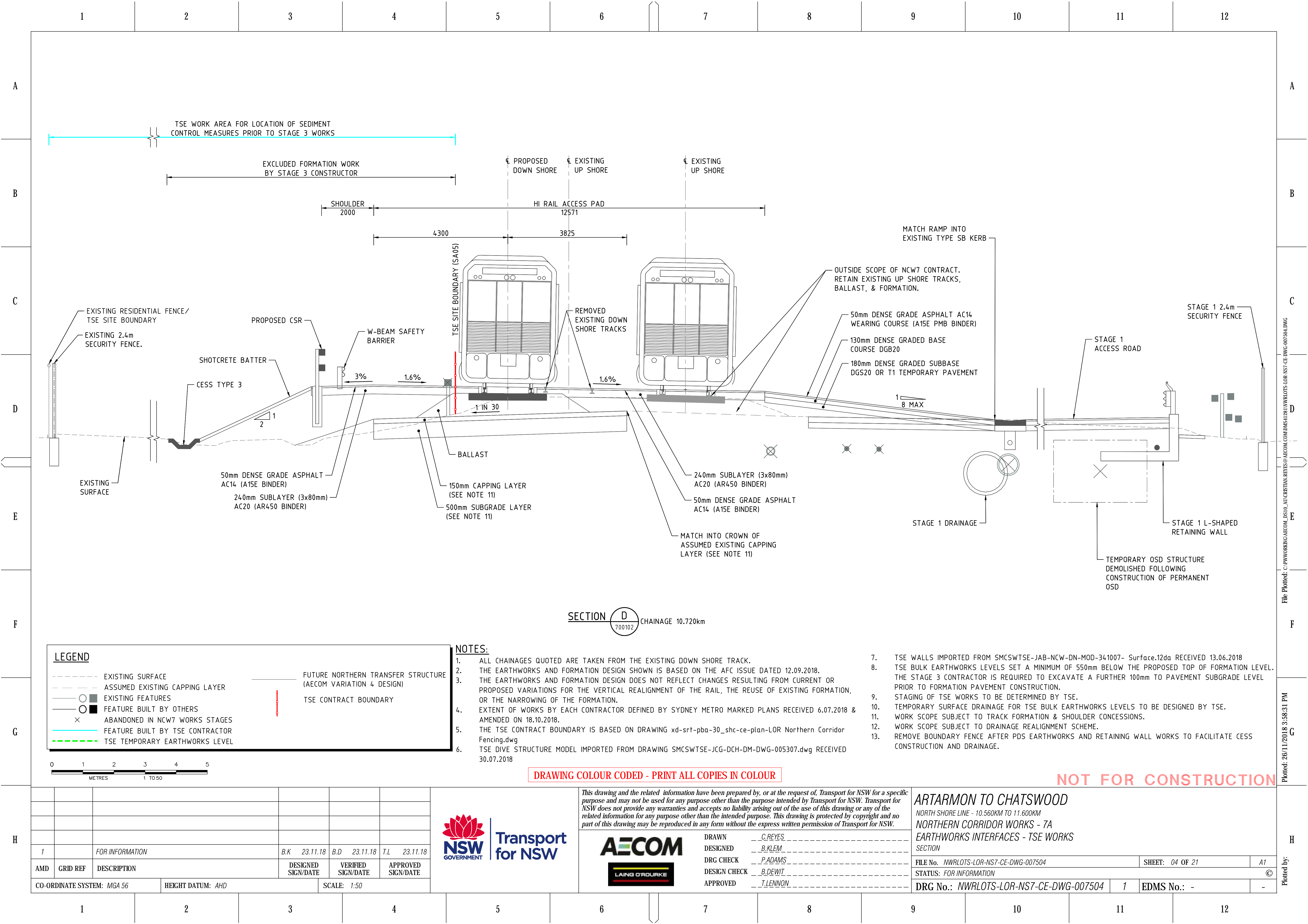
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File Plotted: c:\pwworking\AECOM\US10\_AU\CRISTIAN.REYES@AECOM.COM\MS11281\NWRLOTS-LOR-NS7-CE-DWG-007503.DWG

Plotted: 26/11/2018 3:57:59 PM

Plotted by:





LEGEND

EXISTING SURFACE

ASSUMED EXISTING CAPPING LAYER

EXISTING FEATURES

FEATURE BUILT BY OTHERS

ABANDONED IN NCW7 WORKS STAGES

FEATURE BUILT BY TSE CONTRACTOR

TSE TEMPORARY EARTHWORKS LEVEL

FUTURE NORTHERN TRANSFER STRUCTURE (AECOM VARIATION 4 DESIGN)

TSE CONTRACT BOUNDARY

012345

METRES

1 TO 50

NOTES:

1.

ALL CHAINAGES QUOTED ARE TAKEN FROM THE EXISTING DOWN SHORE TRACK.

2.

THE EARTHWORKS AND FORMATION DESIGN SHOWN IS BASED ON THE AFC ISSUE DATED 12.09.2018.

3.

THE EARTHWORKS AND FORMATION DESIGN DOES NOT REFLECT CHANGES RESULTING FROM CURRENT OR PROPOSED VARIATIONS FOR THE VERTICAL REALIGNMENT OF THE RAIL, THE REUSE OF EXISTING FORMATION, OR THE NARROWING OF THE FORMATION.

4.

EXTENT OF WORKS BY EACH CONTRACTOR DEFINED BY SYDNEY METRO MARKED PLANS RECEIVED 6.07.2018 & AMENDED ON 18.10.2018.

5.

THE TSE CONTRACT BOUNDARY IS BASED ON DRAWING xd-srt-pba-30\_shc-ce-plan-LOR Northern Corridor Fencing.dwg

6.

TSE DIVE STRUCTURE MODEL IMPORTED FROM DRAWING SMC5WTSE-JCG-DCH-DM-DWG-005307.dwg RECEIVED 30.07.2018

7.

TSE WALLS IMPORTED FROM SMC5WTSE-JAB-NCW-DN-MOD-341007- Surface.12da RECEIVED 13.06.2018

8.

TSE BULK EARTHWORKS LEVELS SET A MINIMUM OF 550mm BELOW THE PROPOSED TOP OF FORMATION LEVEL. THE STAGE 3 CONTRACTOR IS REQUIRED TO EXCAVATE A FURTHER 100mm TO PAVEMENT SUBGRADE LEVEL PRIOR TO FORMATION PAVEMENT CONSTRUCTION.

9.

STAGING OF TSE WORKS TO BE DETERMINED BY TSE.

10.

TEMPORARY SURFACE DRAINAGE FOR TSE BULK EARTHWORKS LEVELS TO BE DESIGNED BY TSE.

11.

WORK SCOPE SUBJECT TO TRACK FORMATION & SHOULDER CONCESSIONS.

12.

WORK SCOPE SUBJECT TO DRAINAGE REALIGNMENT SCHEME.

13.

REMOVE BOUNDARY FENCE AFTER PDS EARTHWORKS AND RETAINING WALL WORKS TO FACILITATE CESS CONSTRUCTION AND DRAINAGE.

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1		FOR INFORMATION		B.K 23.11.18	T.L 23.11.18
AMD	GRID REF	DESCRIPTION		DESIGNED SIGN/DATE	APPROVED SIGN/DATE
CO-ORDINATE SYSTEM: MGA 56		HEIGHT DATUM: AHD		SCALE: 1:50	



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DRAWN	C.REYES
DESIGNED	B.KLEM
DRG CHECK	P.ADAMS
DESIGN CHECK	B.DEWIT
APPROVED	T.LENNON

ARTARMON TO CHATSWOOD

NORTH SHORE LINE - 10.560KM TO 11.600KM

NORTHERN CORRIDOR WORKS - 7A

EARTHWORKS INTERFACES - TSE WORKS

SECTION

FILE No. NWRL0TS-LOR-NS7-CE-DWG-007504

STATUS: FOR INFORMATION

DRG No.: NWRL0TS-LOR-NS7-CE-DWG-007504

SHEET: 04 OF 21

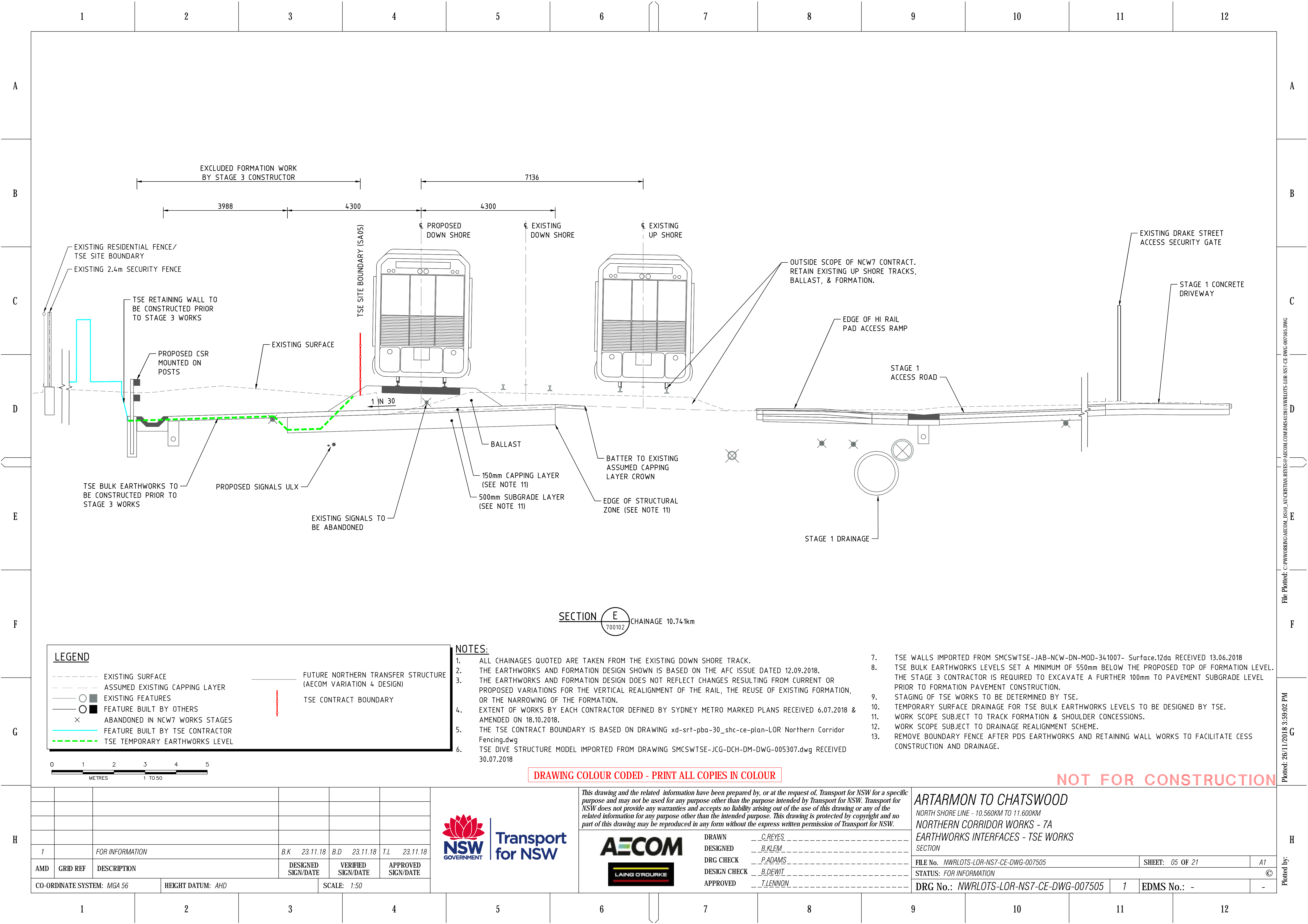
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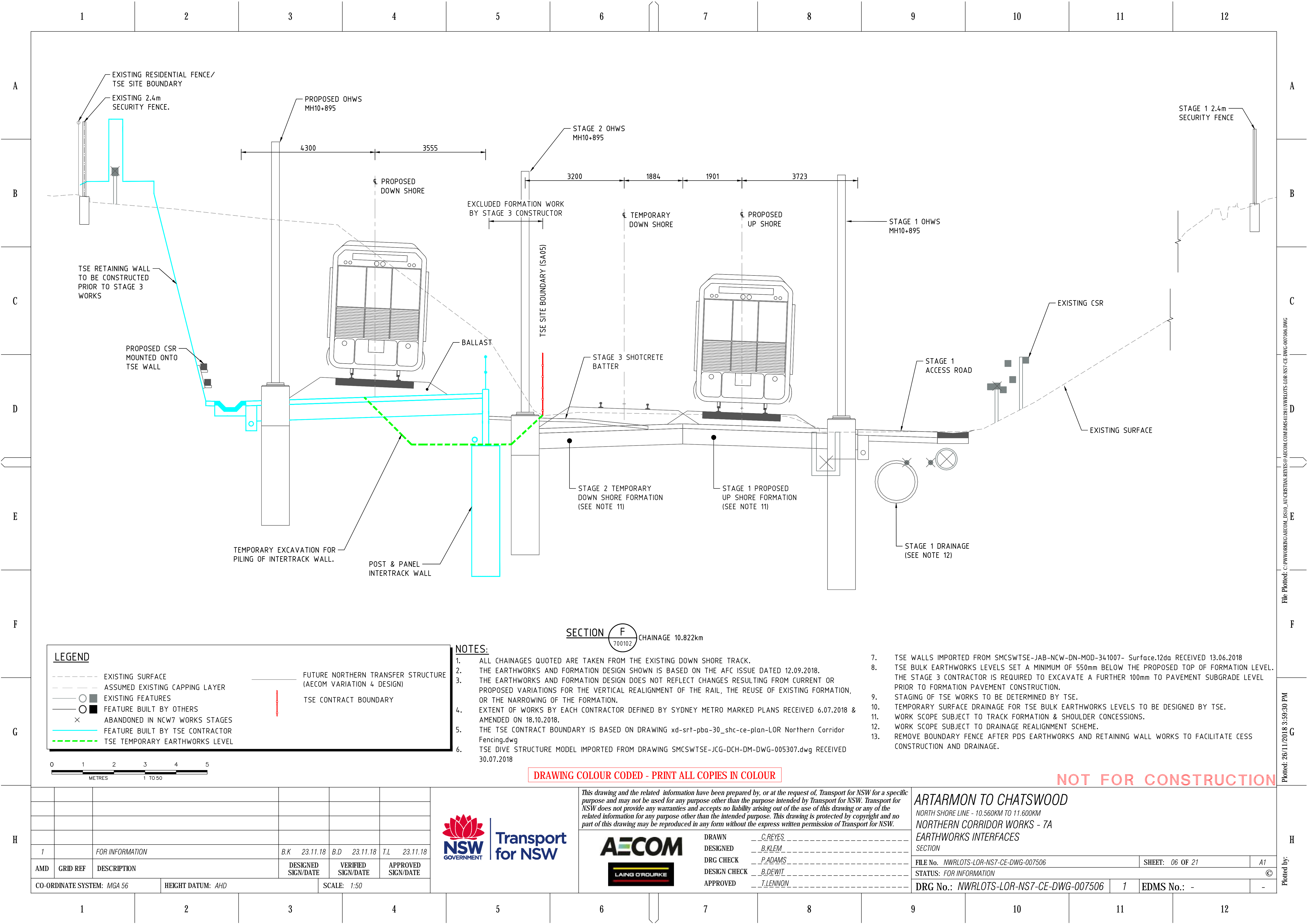
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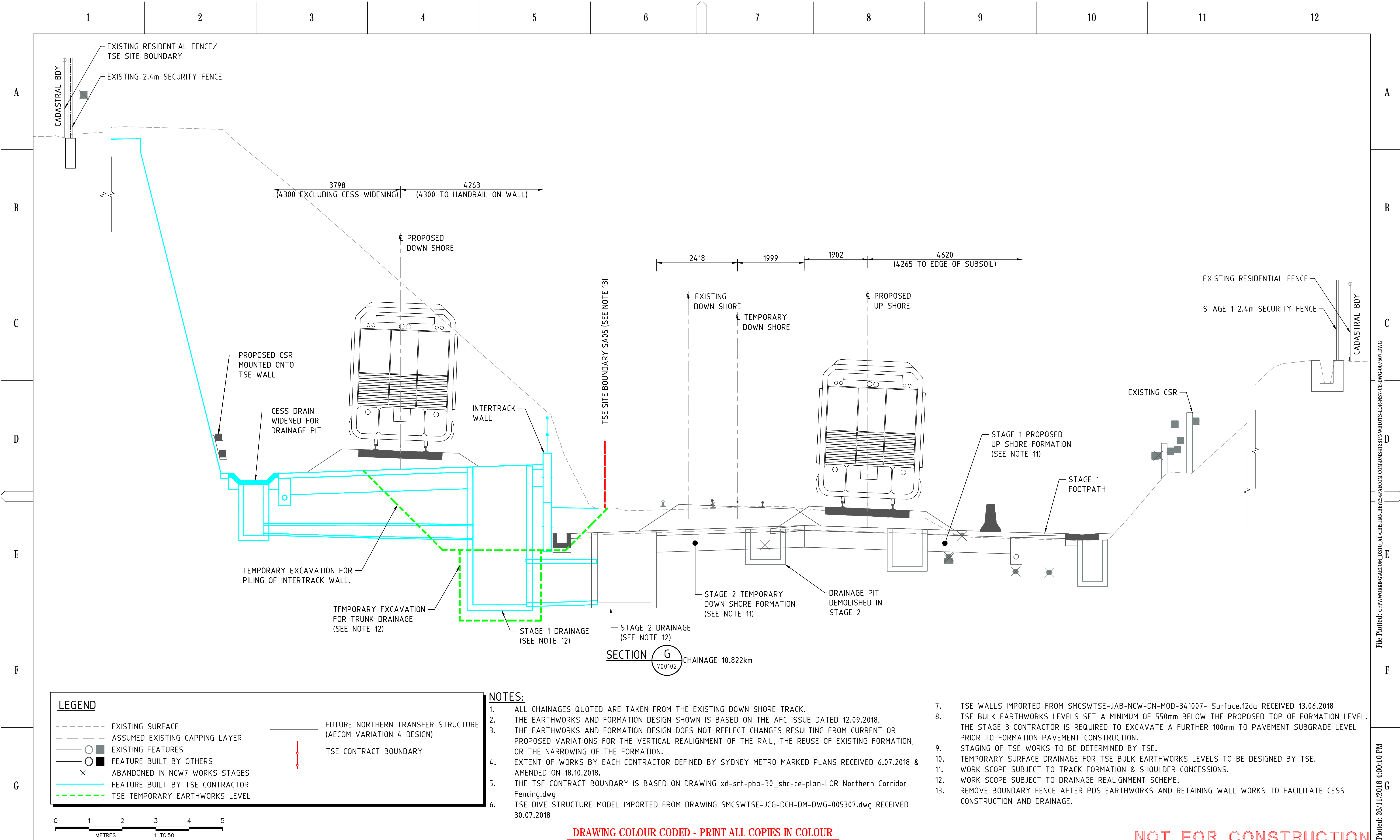




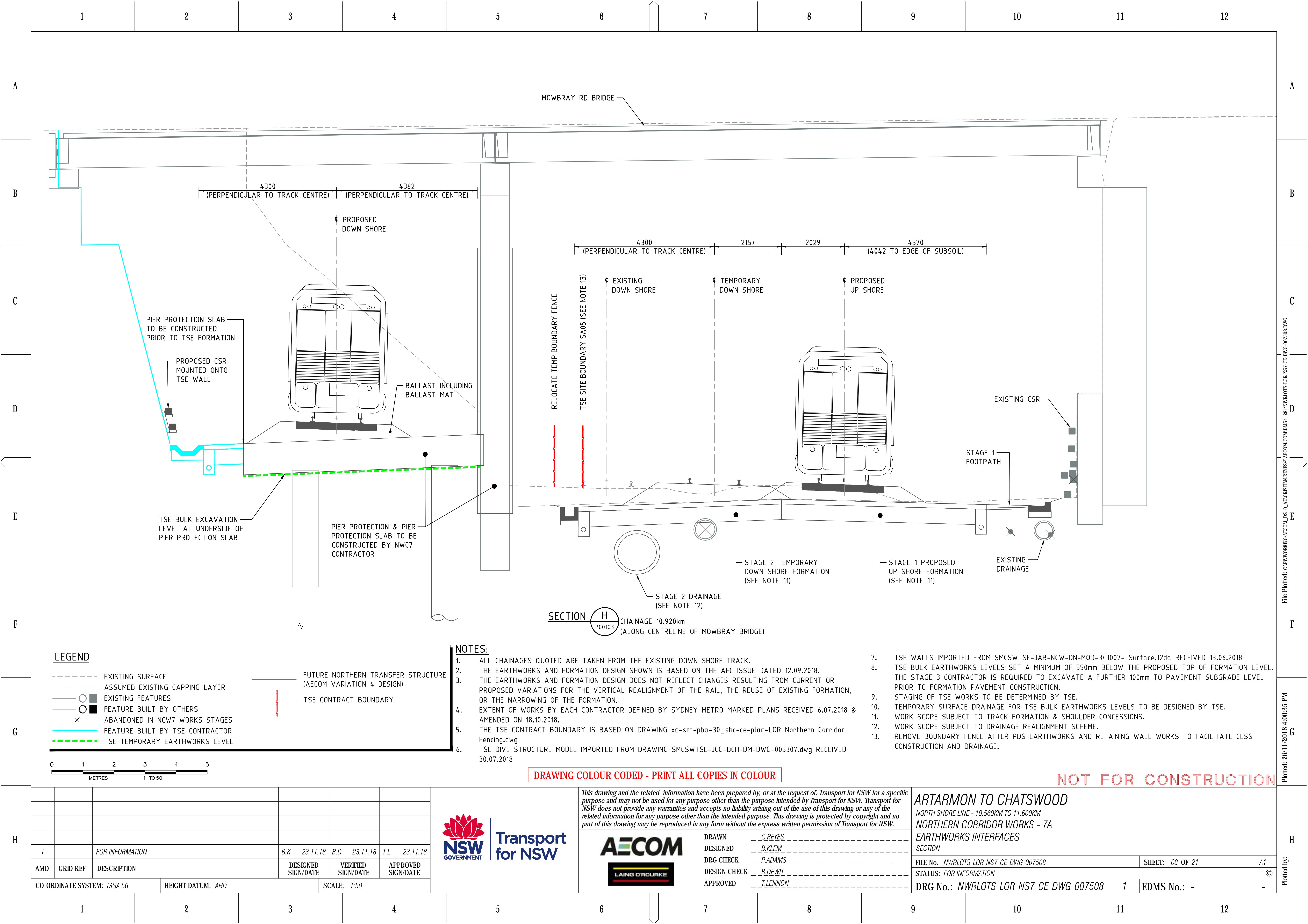




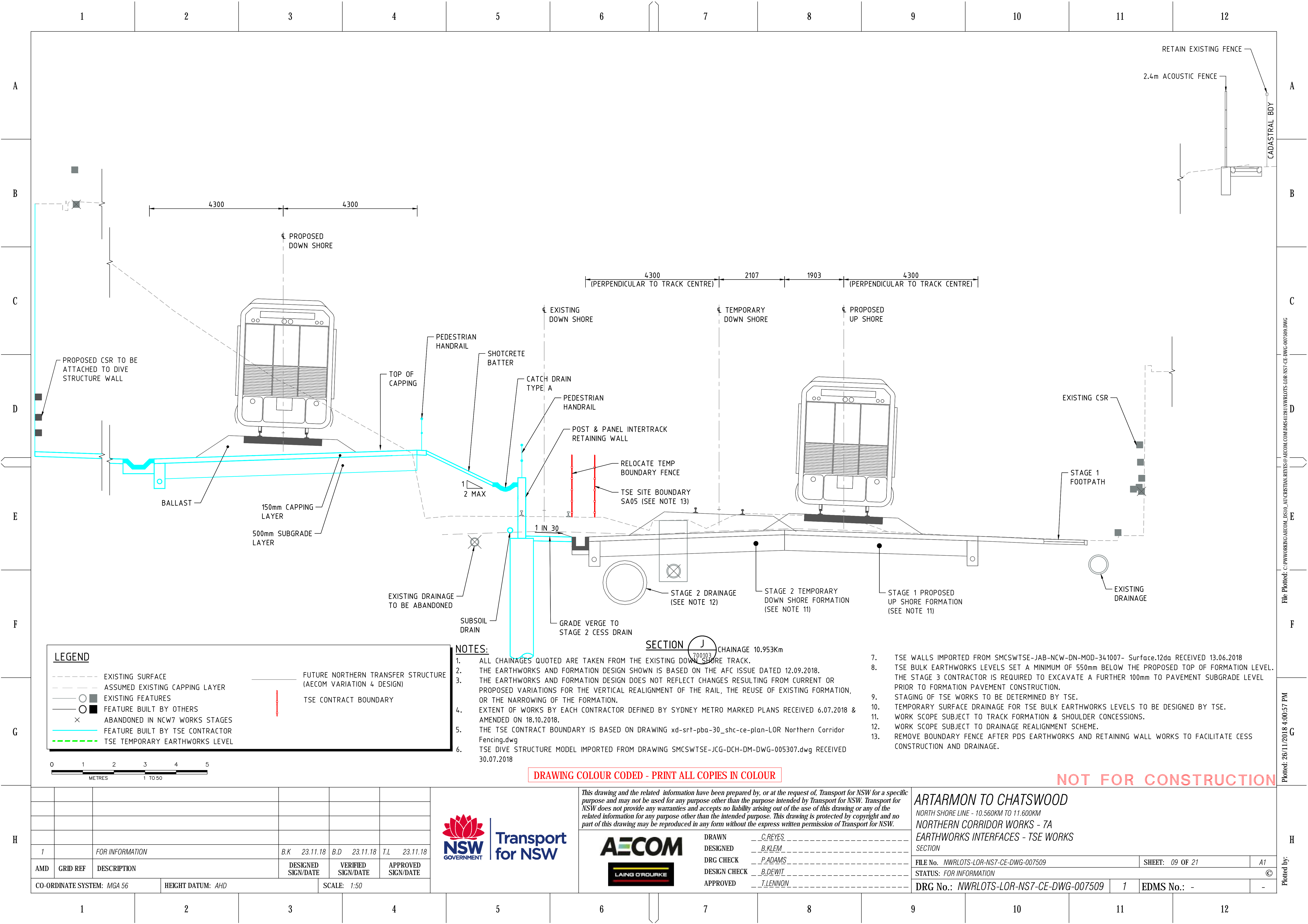


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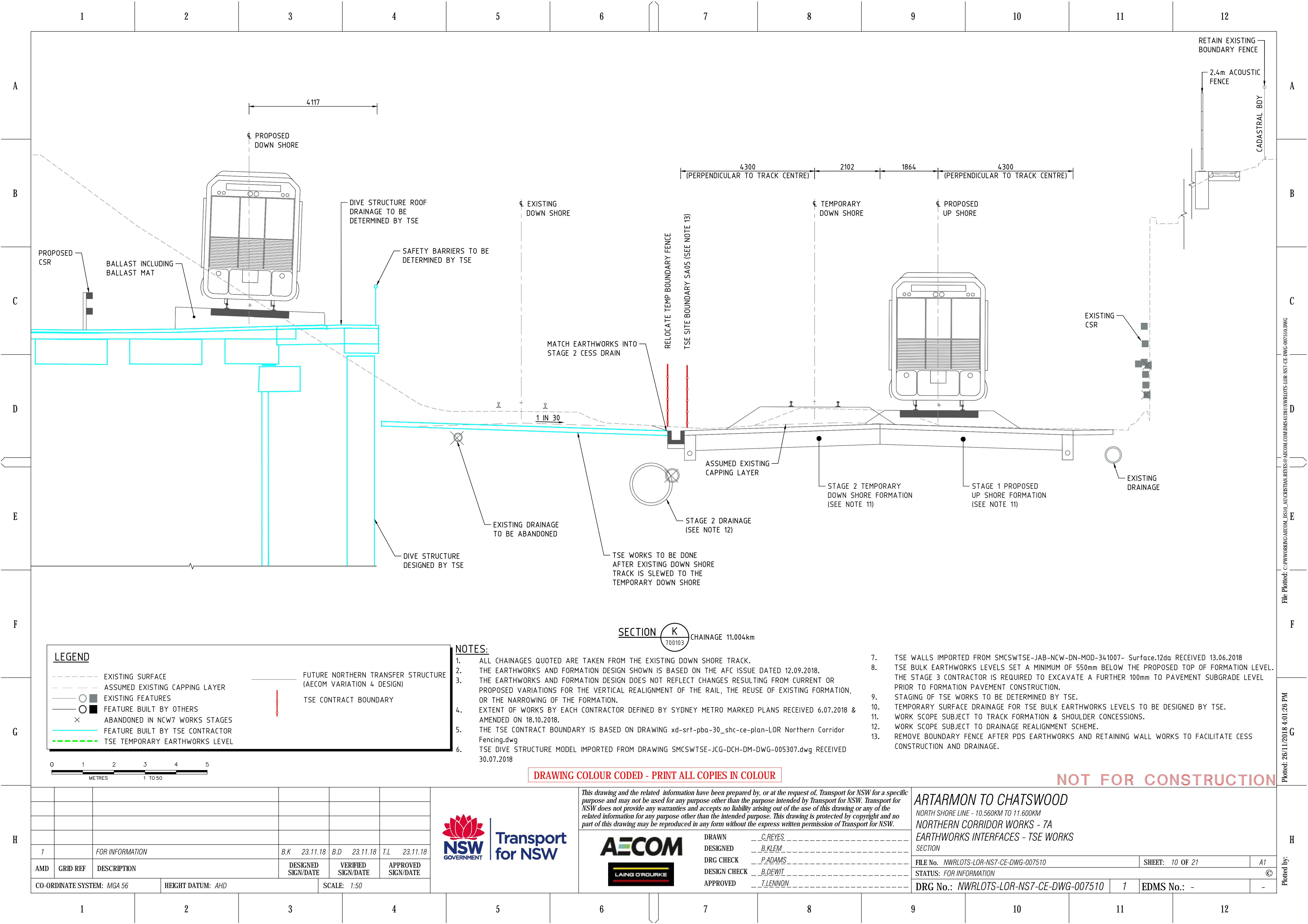


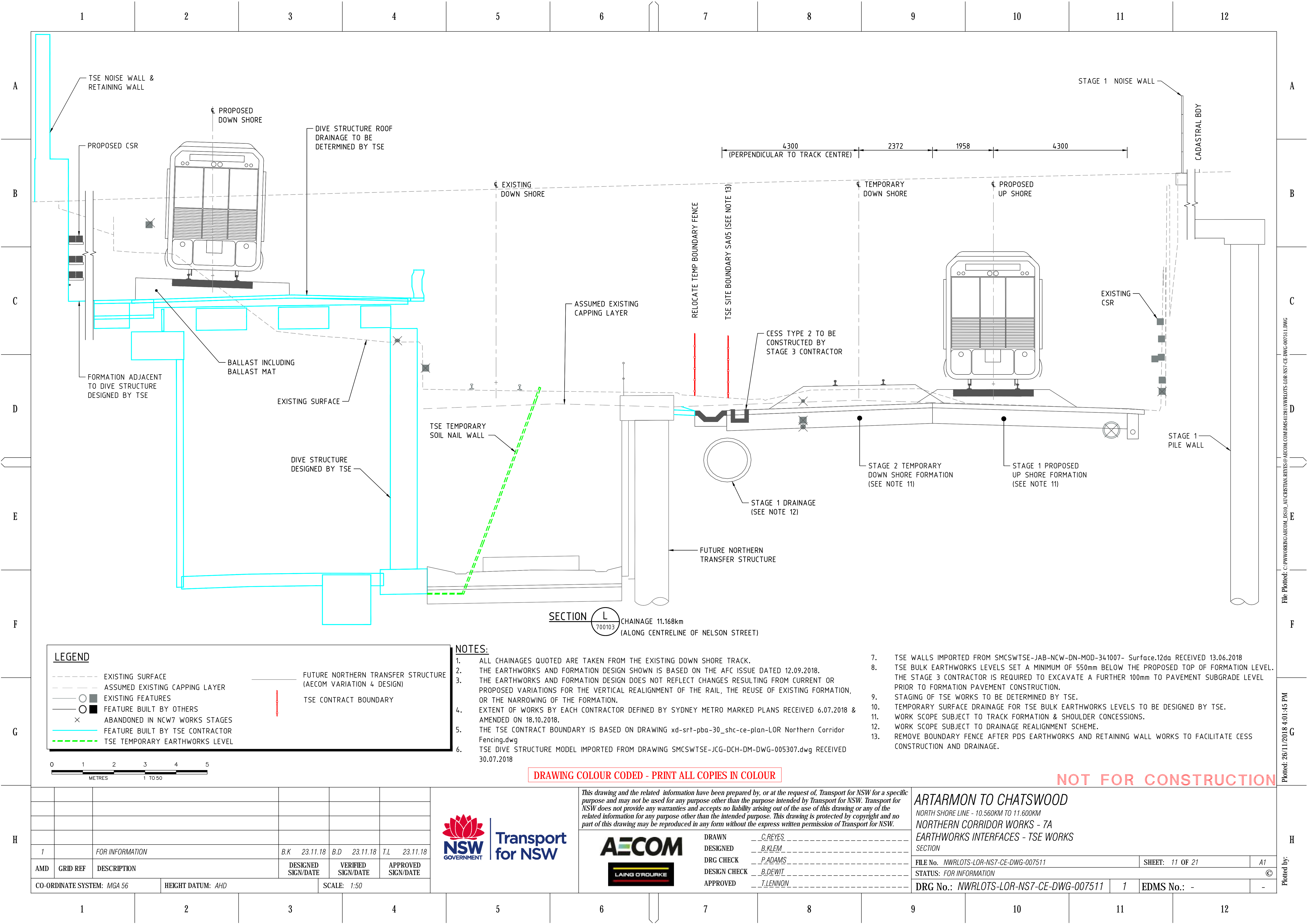




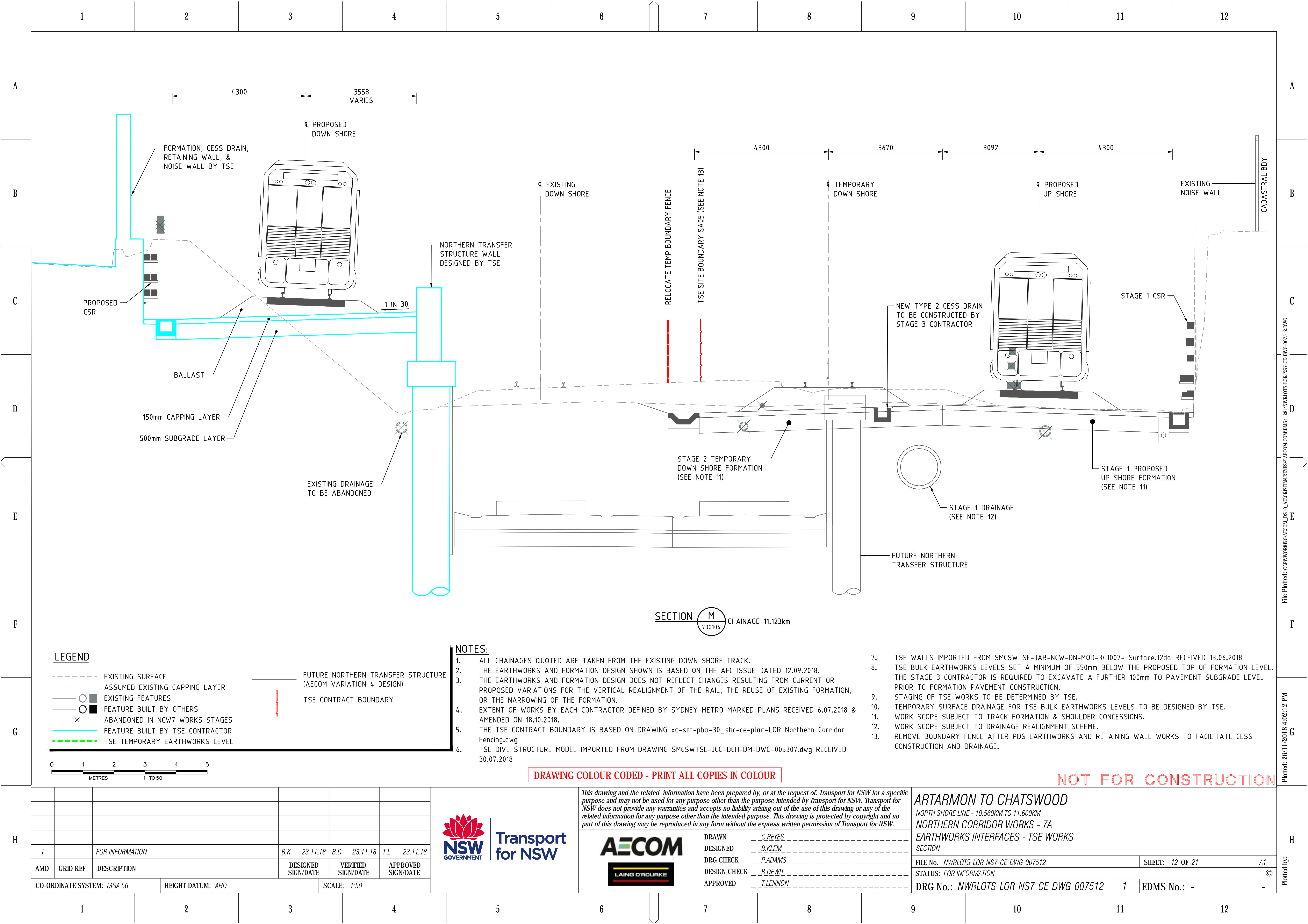


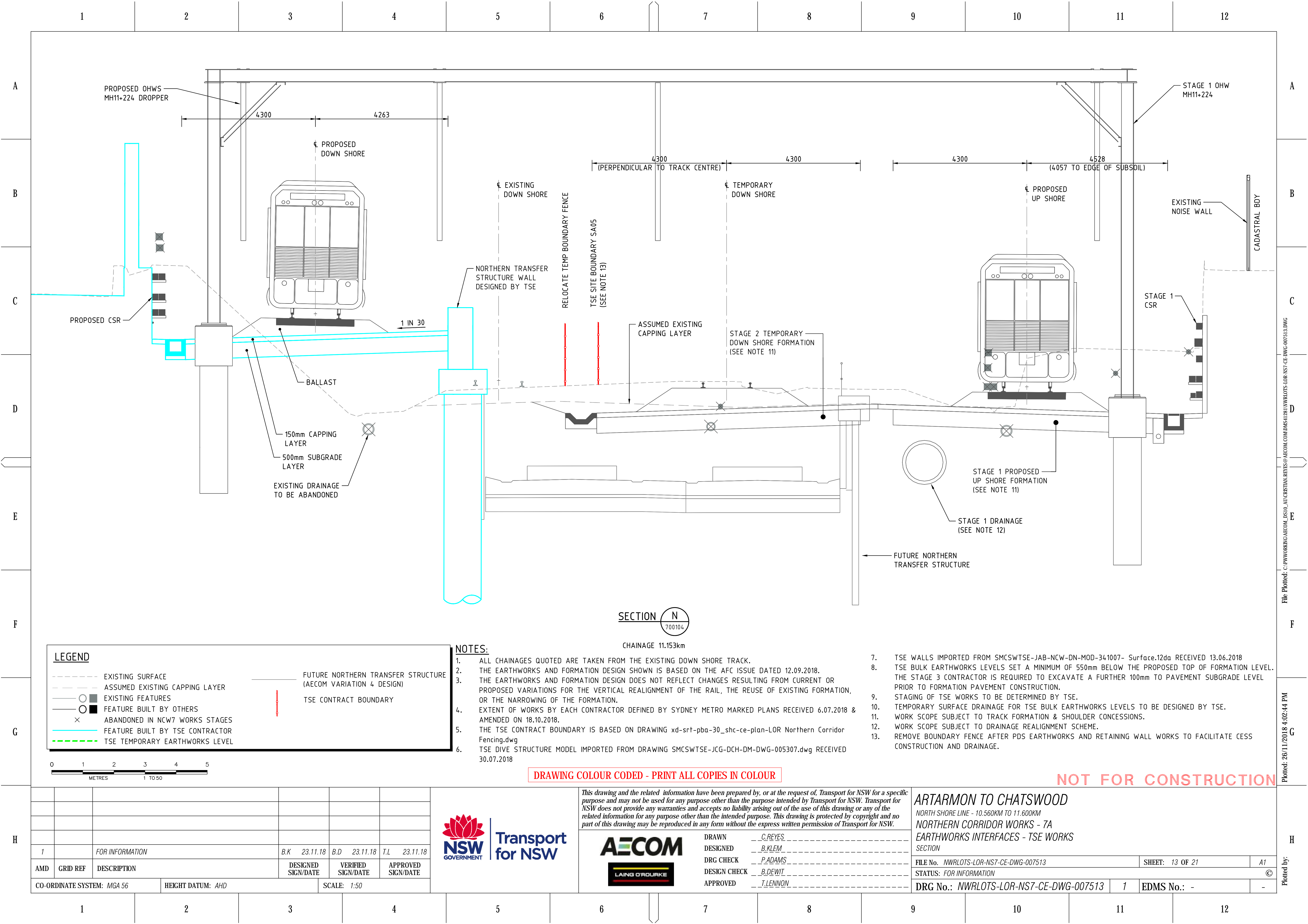




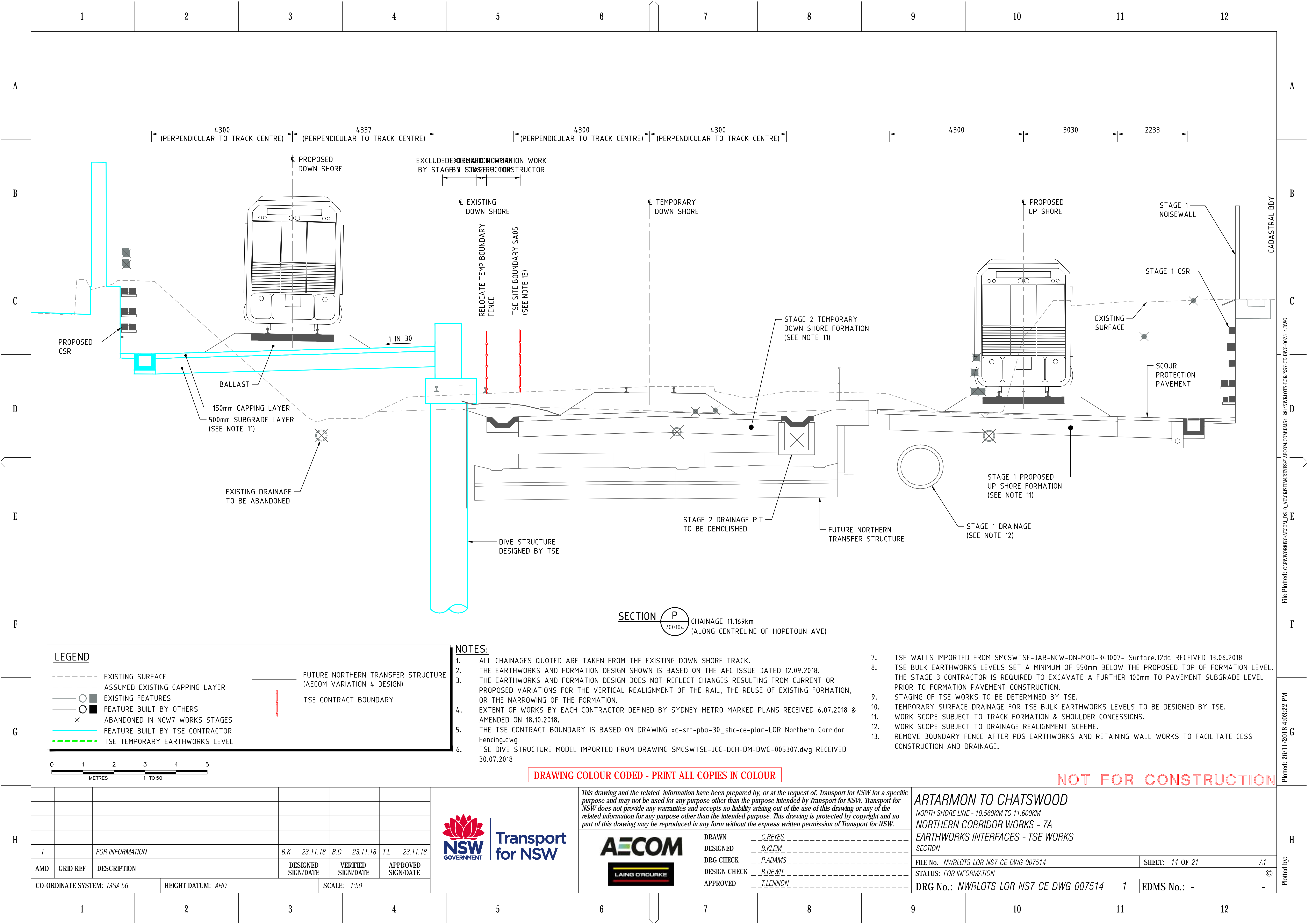






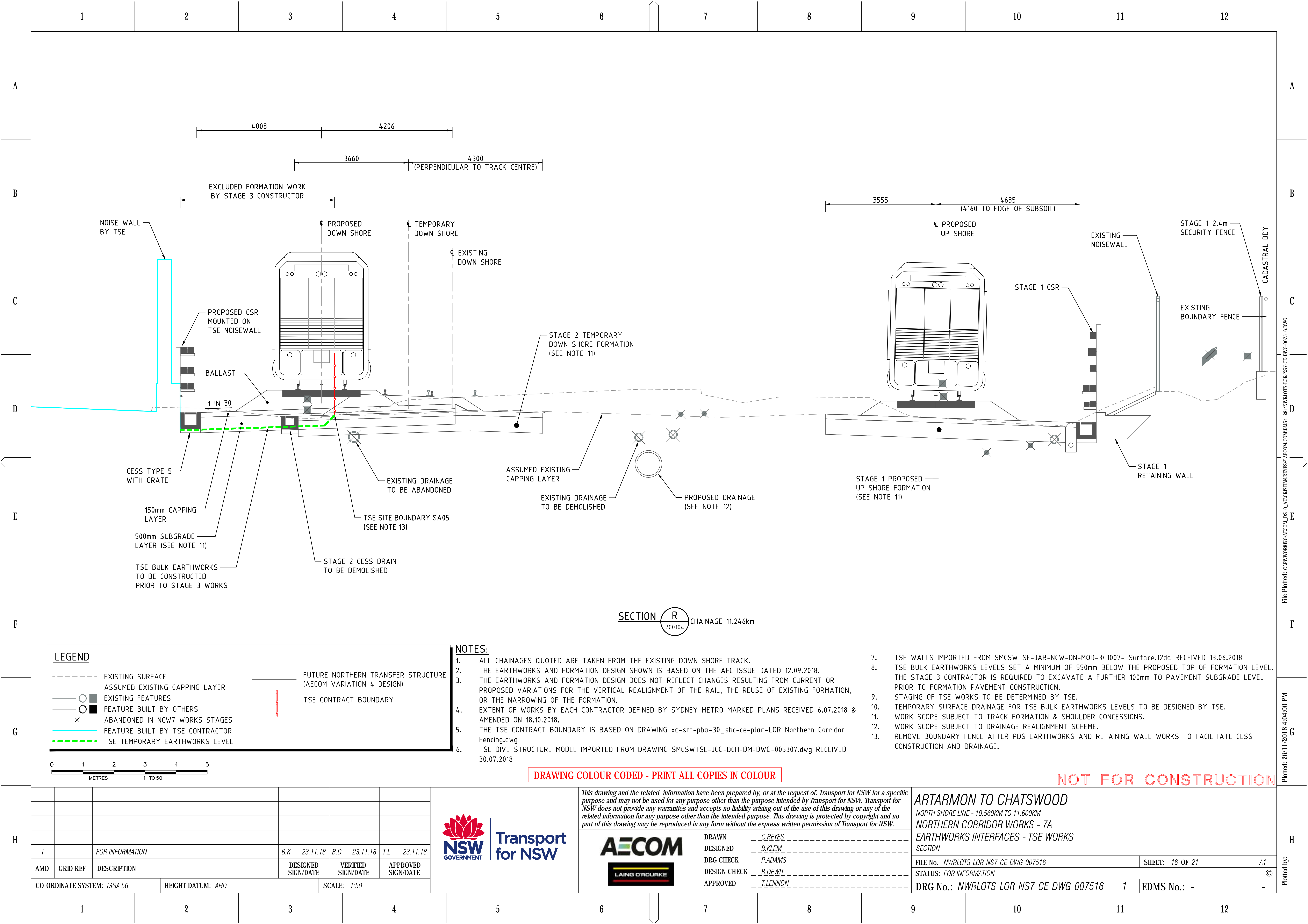


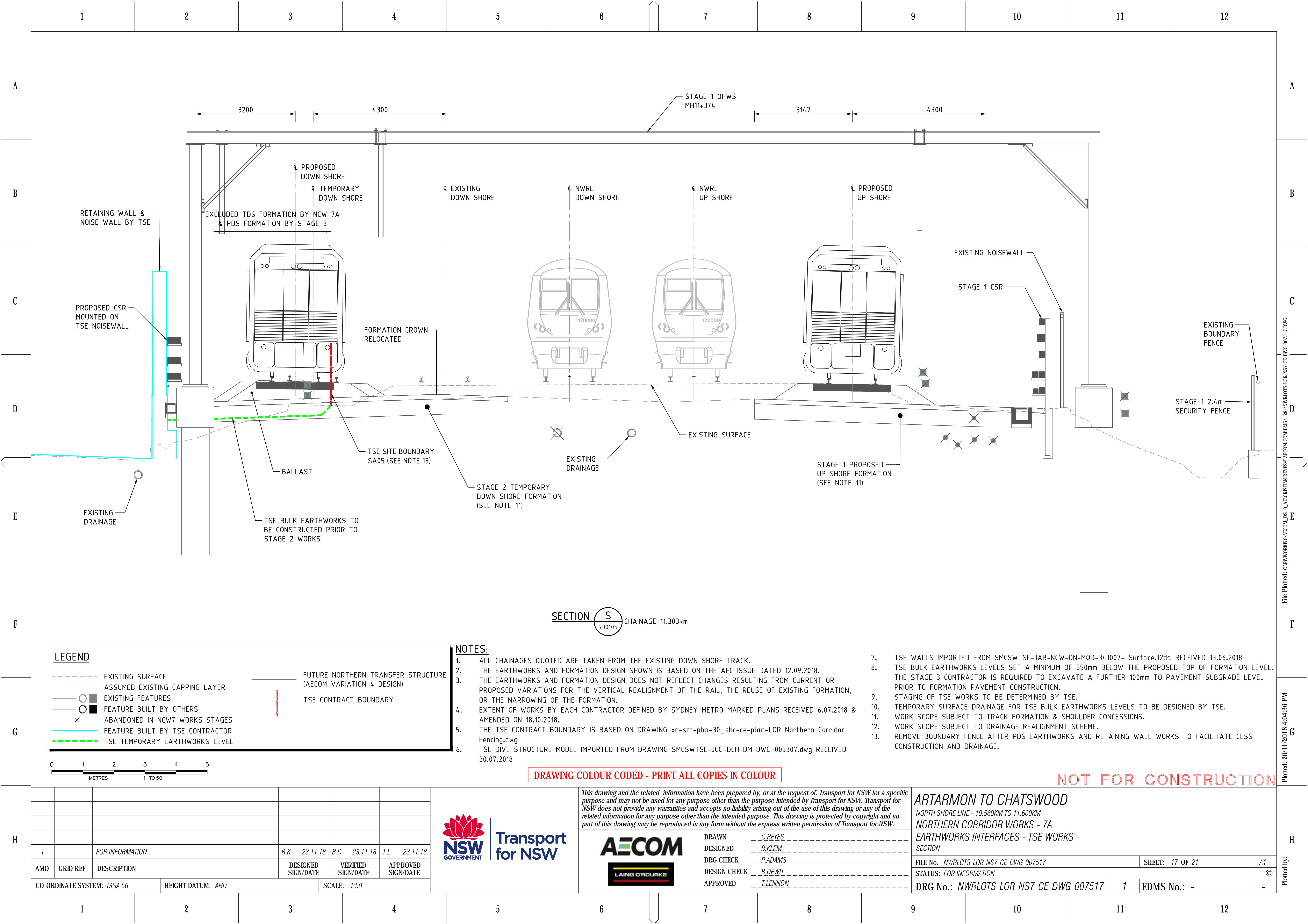












LEGEND

EXISTING SURFACE

ASSUMED EXISTING CAPPING LAYER

EXISTING FEATURES

FEATURE BUILT BY OTHERS

ABANDONED IN NCW7 WORKS STAGES

FEATURE BUILT BY TSE CONTRACTOR

TSE TEMPORARY EARTHWORKS LEVEL

FUTURE NORTHERN TRANSFER STRUCTURE (AECOM VARIATION 4 DESIGN)

TSE CONTRACT BOUNDARY

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TSE DIVE STRUCTURE MODEL IMPORTED FROM DRAWING SMC SWTSE-JCG-DCH-DM-DWG-005307.dwg RECEIVED 30.07.2018

7.

TSE WALLS IMPORTED FROM SMC SWTSE-JAB-NCW-DN-MOD-341007- Surface.12da RECEIVED 13.06.2018

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012345

METRES

1 TO 50

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AMD	GRID REF	DESCRIPTION	DESIGNED SIGN/DATE	VERIFIED SIGN/DATE	APPROVED SIGN/DATE			
CO-ORDINATE SYSTEM: MGA 56			HEIGHT DATUM: AHD		SCALE: 1:50			

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AECOM

LAING O'Rourke

DRAWN

DESIGNED

DRG CHECK

DESIGN CHECK

APPROVED

C.REYES

B.KLEM

P.ADAMS

B.DEWIT

T.LENNON

ARTARMON TO CHATSWOOD

NORTH SHORE LINE - 10.560KM TO 11.600KM

NORTHERN CORRIDOR WORKS - 7A

EARTHWORKS INTERFACES - TSE WORKS

SECTION

FILE No. NWRLOTS-LOR-NS7-CE-DWG-007517

STATUS: FOR INFORMATION

DRG No.: NWRLOTS-LOR-NS7-CE-DWG-007517

1

EDMS No.: -

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SHEET: 17 OF 21

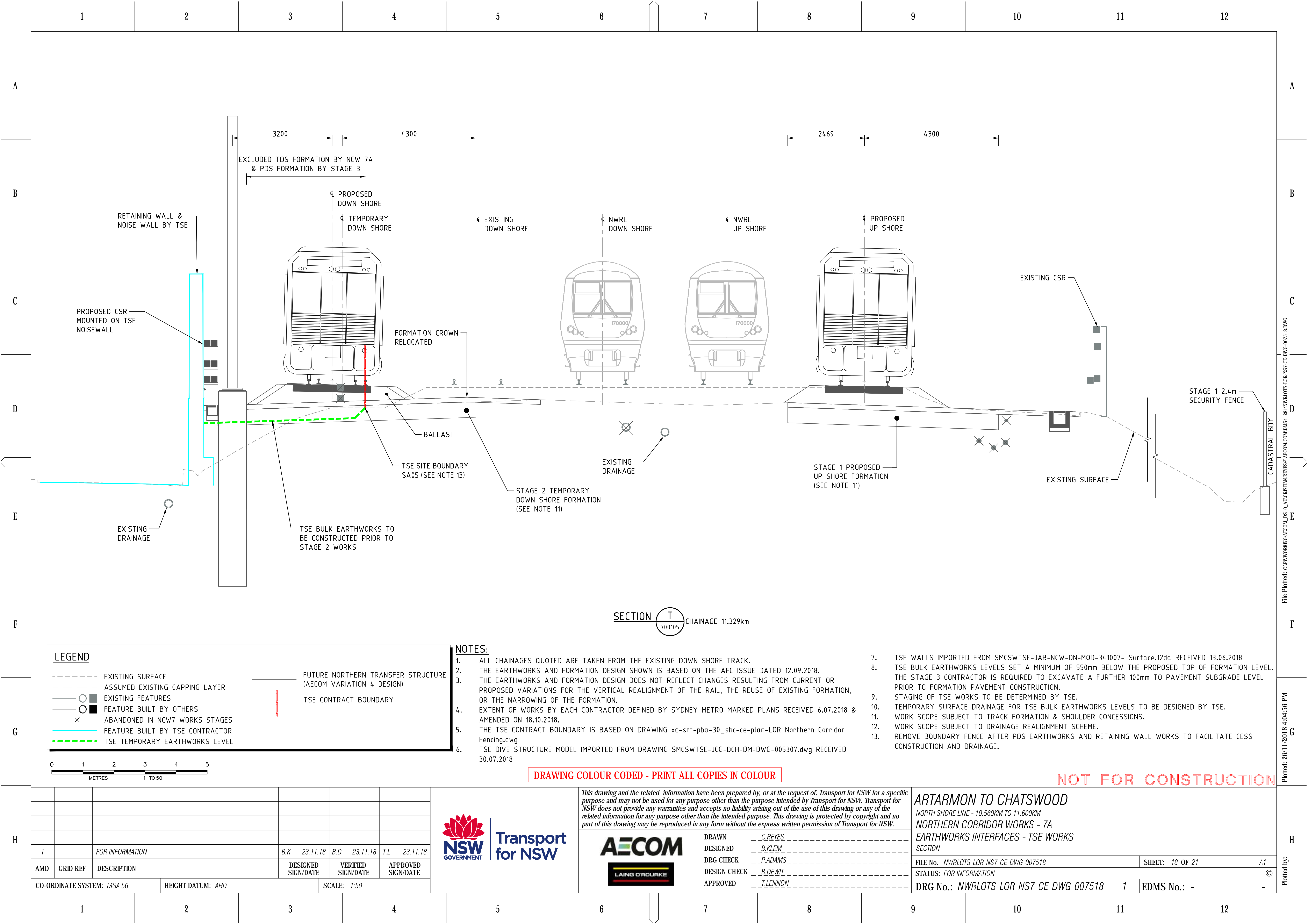
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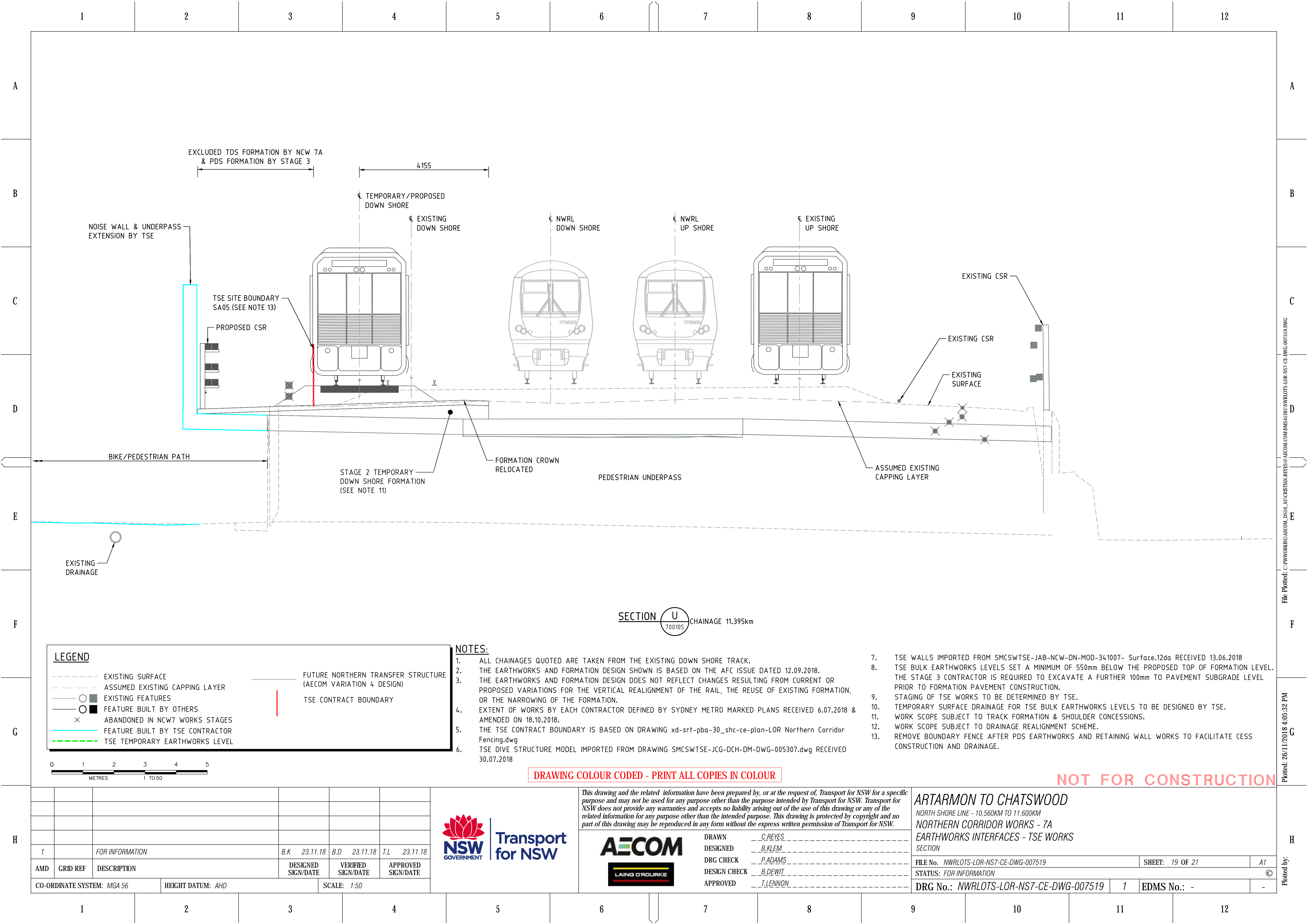
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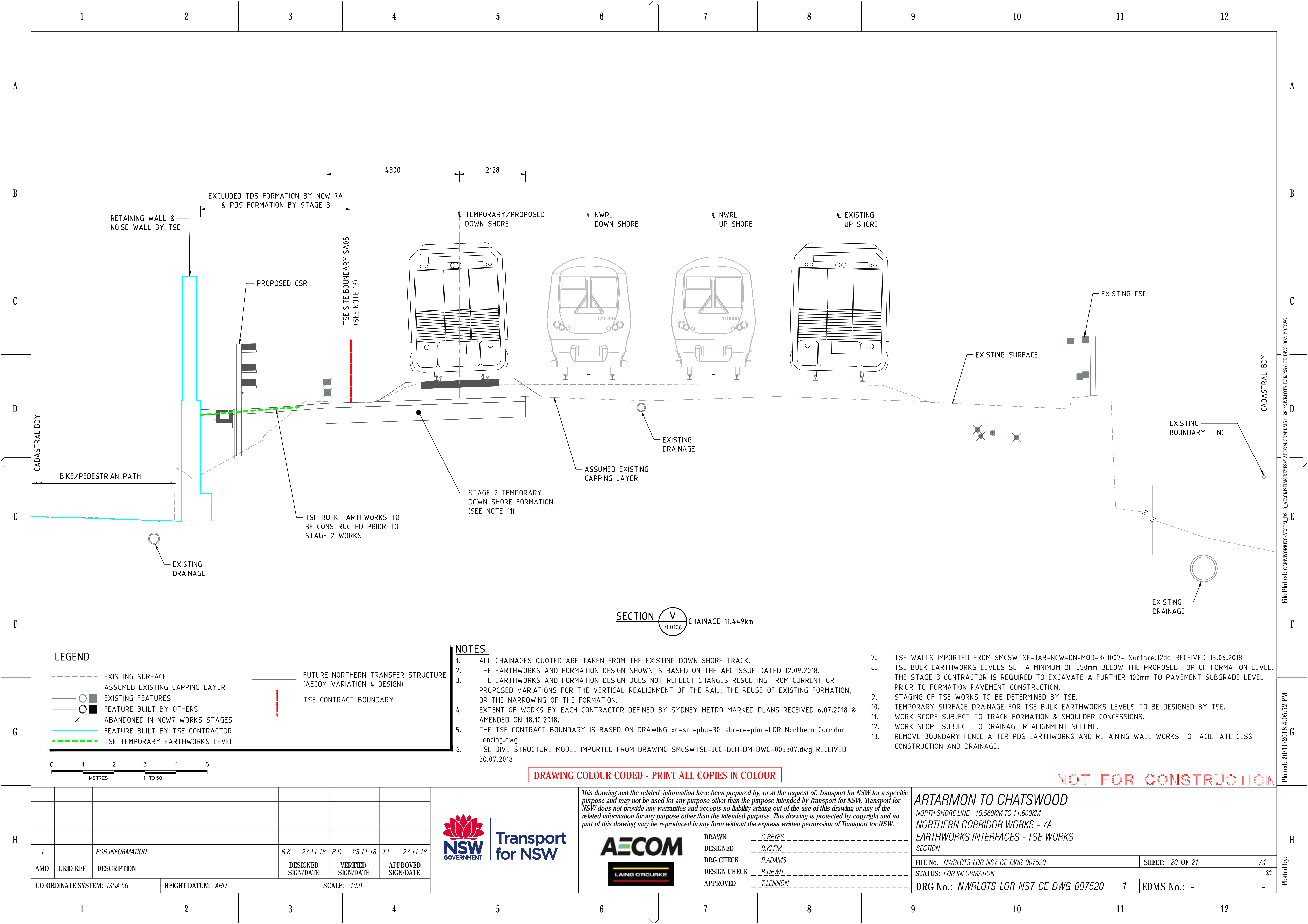
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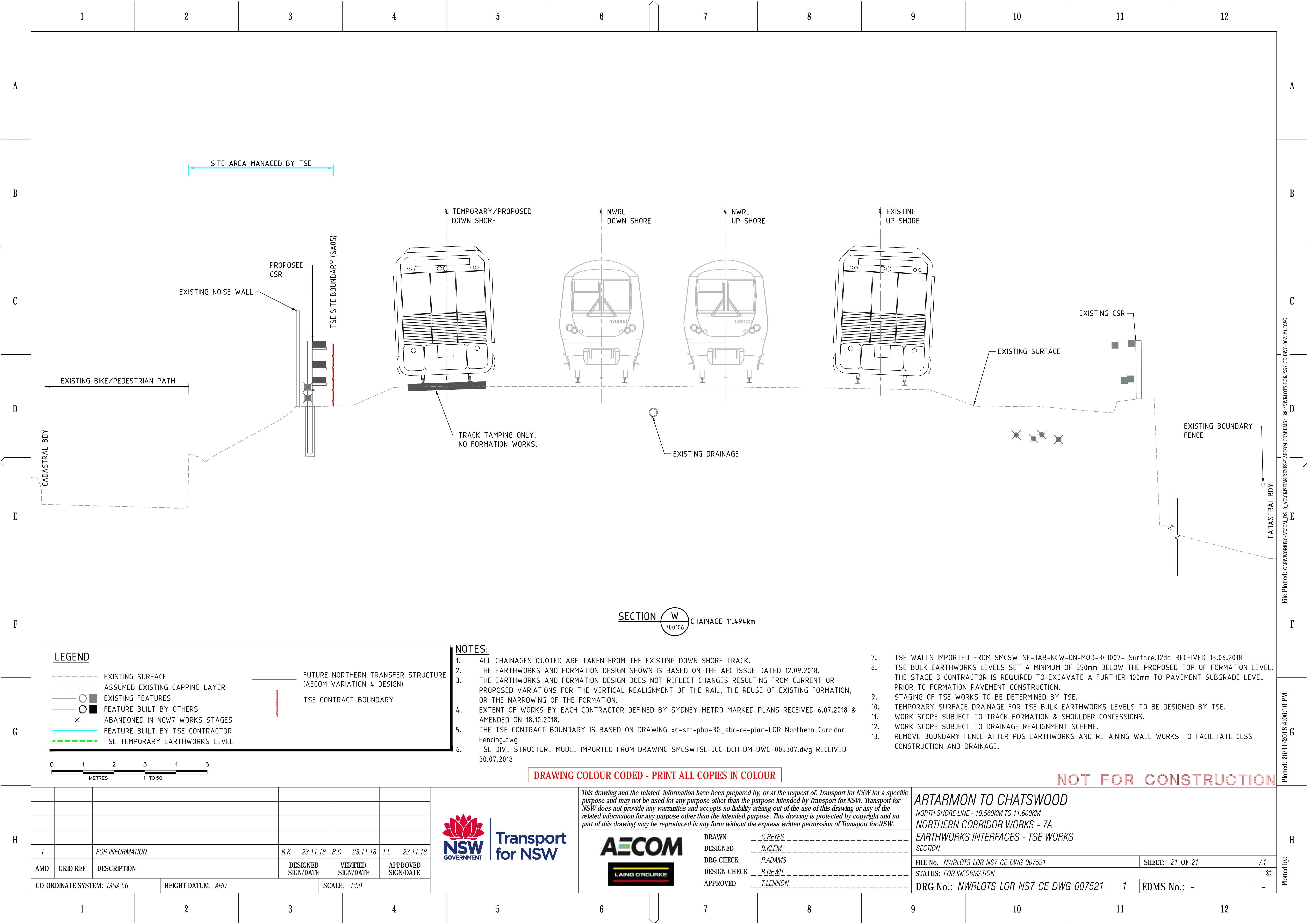












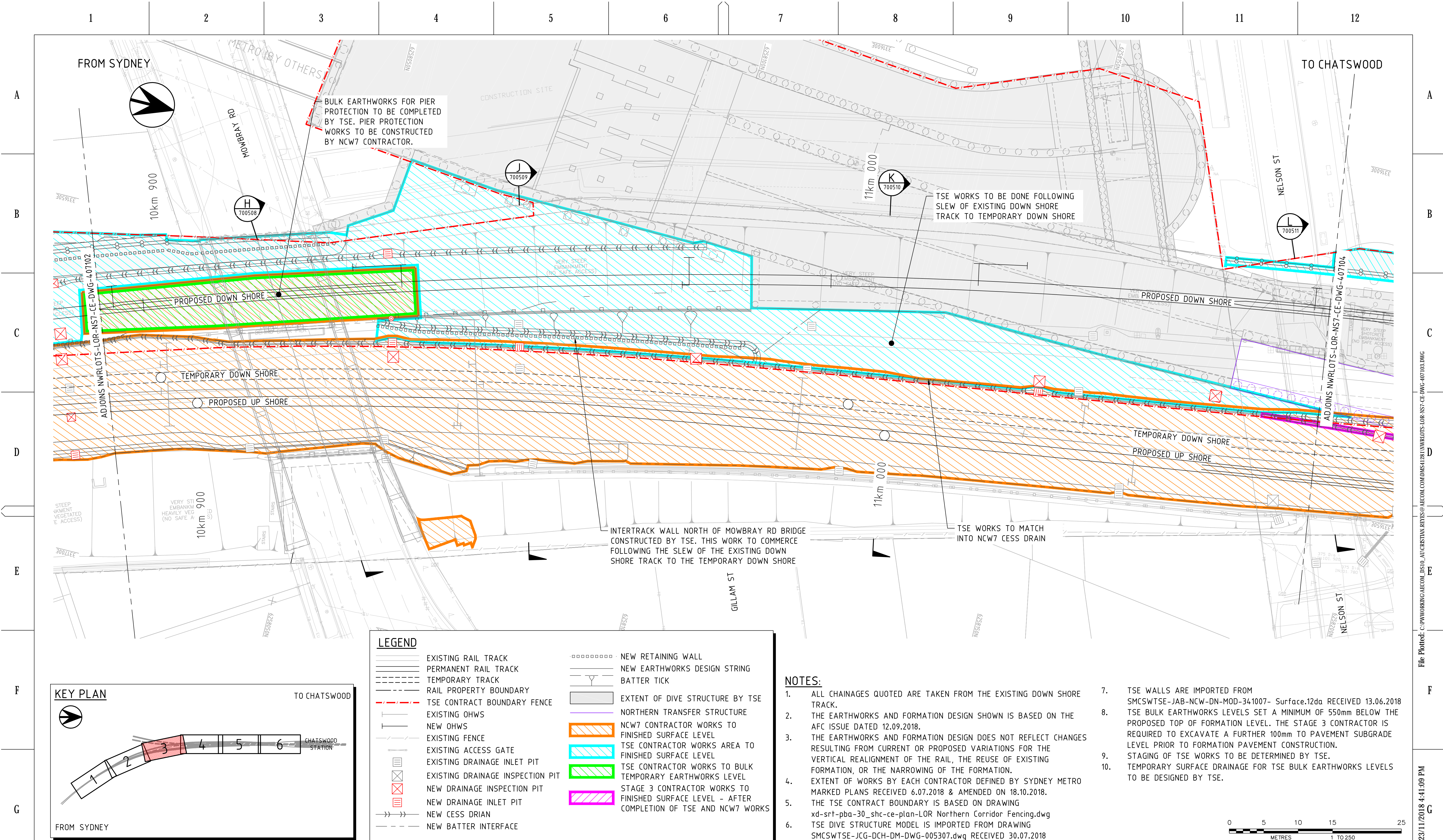










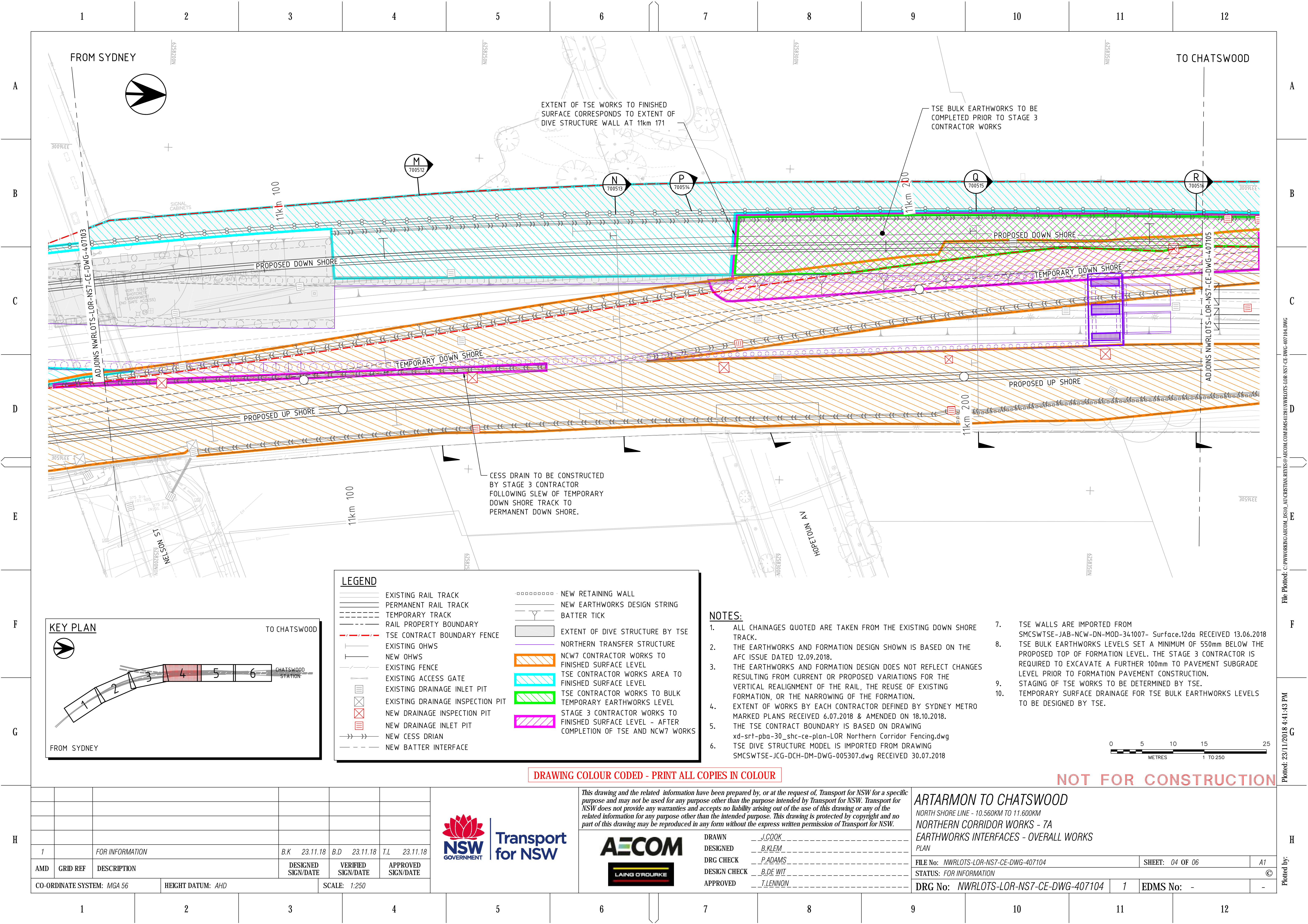


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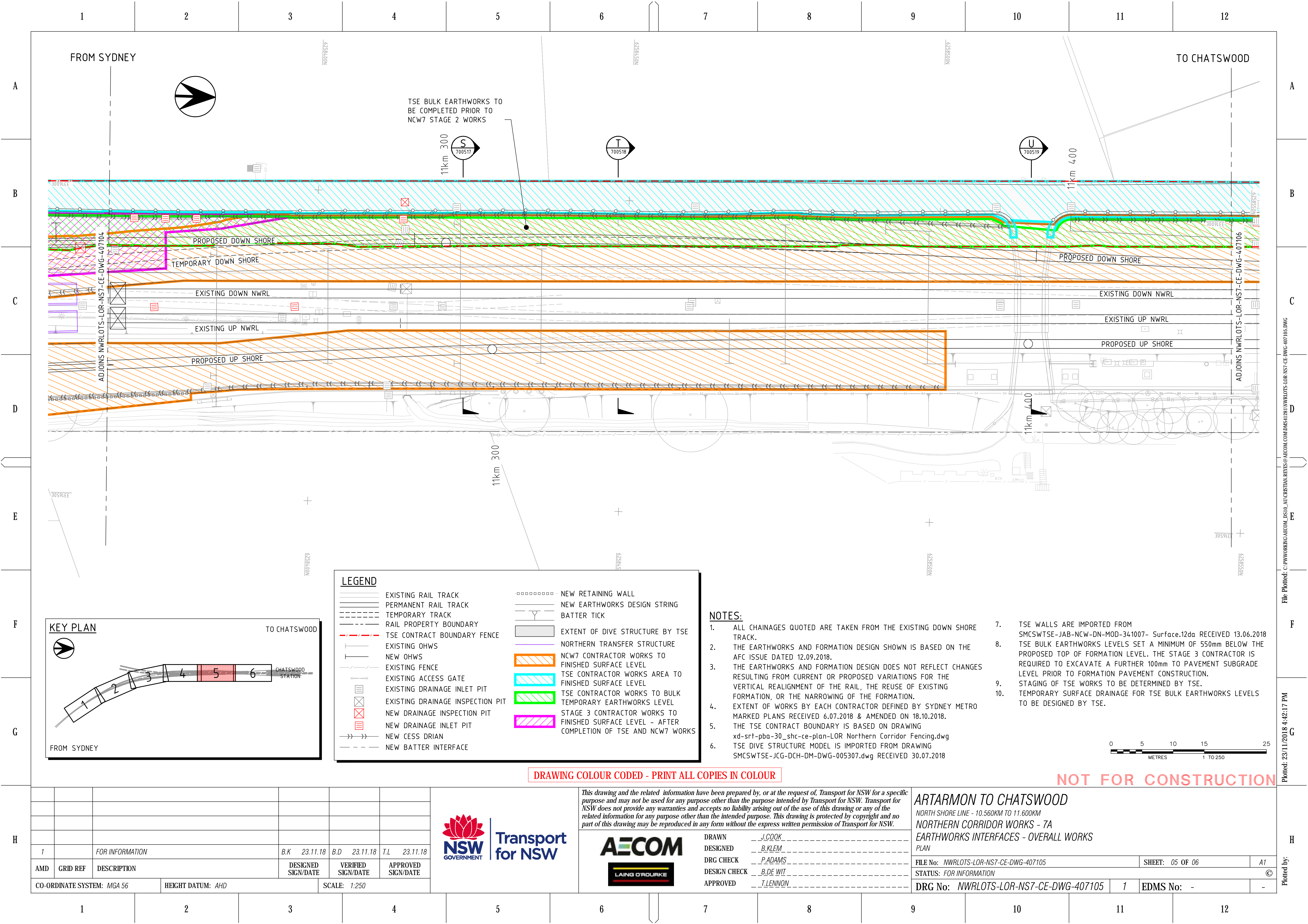
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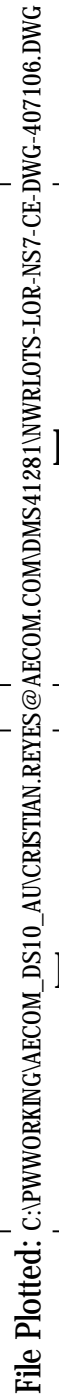












Plotted by:

1. ALL CHAINAGES QUOTED ARE TAKEN FROM THE EXISTING DOWN SHORE TRACK.
2. THE EARTHWORKS AND FORMATION DESIGN SHOWN IS BASED ON THE AFC ISSUE DATED 12.09.2018.
3. THE EARTHWORKS AND FORMATION DESIGN DOES NOT REFLECT CHANGES RESULTING FROM CURRENT OR PROPOSED VARIATIONS FOR THE VERTICAL REALIGNMENT OF THE RAIL, THE REUSE OF EXISTING FORMATION, OR THE NARROWING OF THE FORMATION.
4. EXTENT OF WORKS BY EACH CONTRACTOR DEFINED BY SYDNEY METRO MARKED PLANS RECEIVED 6.07.2018 & AMENDED ON 18.10.2018.
5. THE TSE CONTRACT BOUNDARY IS BASED ON DRAWING xd-srt-pba-30\_shc-ce-plan-LOR Northern Corridor Fencing.dwg
6. TSE DIVE STRUCTURE MODEL IS IMPORTED FROM DRAWING SMCSWTSE-JCG-DCH-DM-DWG-005307.dwg RECEIVED 30.07.2018

NOT FOR CONSTRUCTION



NSW  
GOVERNMENT

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for NSW



# ARTARMON TO CHATSWOOD

NORTH SHORE LINE - 10.560KM TO 11.600KM

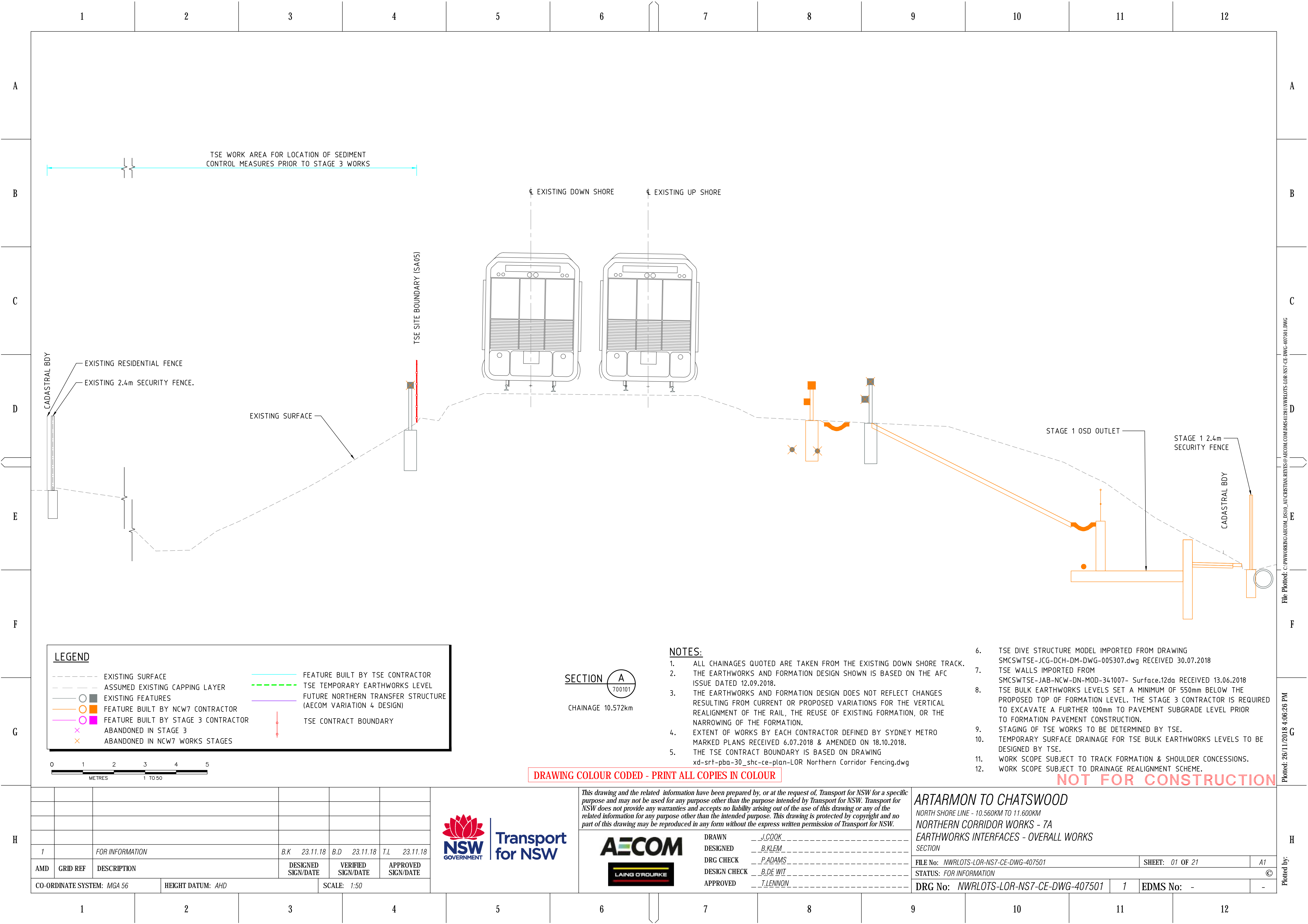
## NORTHERN CORRIDOR WORKS - 7A

### EARTHWORKS INTERFACES - OVERALL WORKS

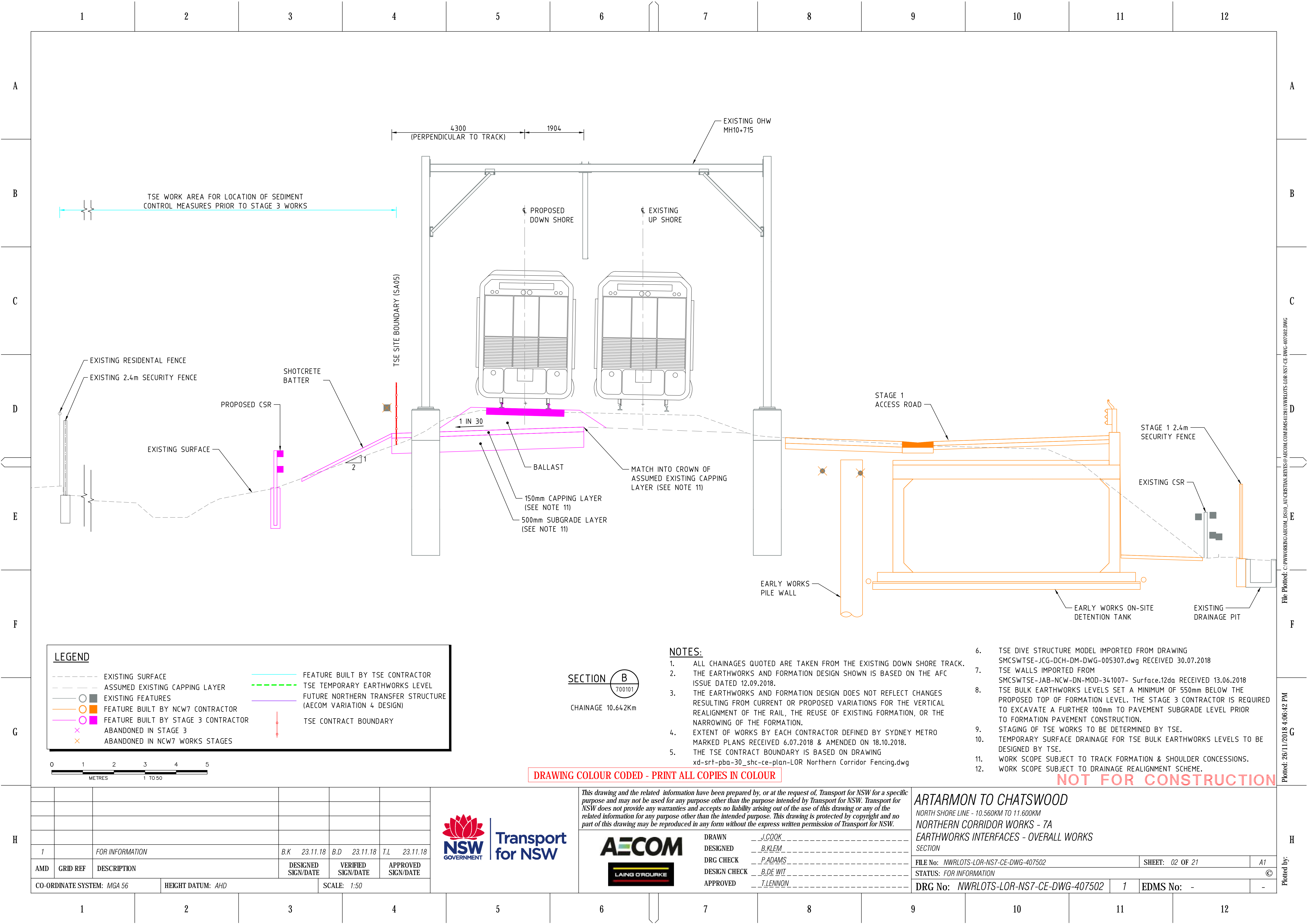
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FILE No: <i>NWRL0TS-L0R-NS7-CE-DWG-407106</i>		SHEET: <i>06 OF 06</i>		A1	
STATUS: <i>FOR INFORMATION</i>					©
DRG No: <i>NWRL0TS-L0R-NS7-CE-DWG-407106</i>		1	EDMS No: -		-



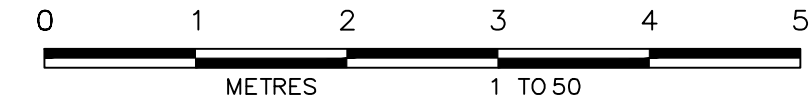






**LEGEND**

---	EXISTING SURFACE	---	FEATURE BUILT BY TSE CONTRACTOR
- - -	ASSUMED EXISTING CAPPING LAYER	- - -	TSE TEMPORARY EARTHWORKS LEVEL
—	EXISTING FEATURES	—	FUTURE NORTHERN TRANSFER STRUCTURE (AECOM VARIATION 4 DESIGN)
—	FEATURE BUILT BY NCW7 CONTRACTOR	—	TSE CONTRACT BOUNDARY
—	FEATURE BUILT BY STAGE 3 CONTRACTOR		
×	ABANDONED IN STAGE 3		
×	ABANDONED IN NCW7 WORKS STAGES		



SECTION B  
700101  
CHAINAGE 10.642Km

- NOTES:**
- ALL CHAINAGES QUOTED ARE TAKEN FROM THE EXISTING DOWN SHORE TRACK.
  - THE EARTHWORKS AND FORMATION DESIGN SHOWN IS BASED ON THE AFC ISSUE DATED 12.09.2018.
  - THE EARTHWORKS AND FORMATION DESIGN DOES NOT REFLECT CHANGES RESULTING FROM CURRENT OR PROPOSED VARIATIONS FOR THE VERTICAL REALIGNMENT OF THE RAIL, THE REUSE OF EXISTING FORMATION, OR THE NARROWING OF THE FORMATION.
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  - THE TSE CONTRACT BOUNDARY IS BASED ON DRAWING xd-srt-pba-30\_shc-ce-plan-LOR Northern Corridor Fencing.dwg
  - TSE DIVE STRUCTURE MODEL IMPORTED FROM DRAWING SMCSWTSE-JCG-DCH-DM-DWG-005307.dwg RECEIVED 30.07.2018
  - TSE WALLS IMPORTED FROM SMCSWTSE-JAB-NCW-DN-MOD-341007- Surface.12da RECEIVED 13.06.2018
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  - STAGING OF TSE WORKS TO BE DETERMINED BY TSE.
  - TEMPORARY SURFACE DRAINAGE FOR TSE BULK EARTHWORKS LEVELS TO BE DESIGNED BY TSE.
  - WORK SCOPE SUBJECT TO TRACK FORMATION & SHOULDER CONCESSIONS.
  - WORK SCOPE SUBJECT TO DRAINAGE REALIGNMENT SCHEME.

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1		FOR INFORMATION		B.K 23.11.18	T.L 23.11.18
AMD	GRID REF	DESCRIPTION		DESIGNED SIGN/DATE	APPROVED SIGN/DATE
CO-ORDINATE SYSTEM: MGA 56		HEIGHT DATUM: AHD		SCALE: 1:50	



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DRAWN J.COOK  
DESIGNED B.KLEM  
DRG CHECK P.ADAMS  
DESIGN CHECK B.DE WIT  
APPROVED T.LENNON

ARTARMON TO CHATSWOOD  
NORTH SHORE LINE - 10.560KM TO 11.600KM  
NORTHERN CORRIDOR WORKS - 7A  
EARTHWORKS INTERFACES - OVERALL WORKS  
SECTION

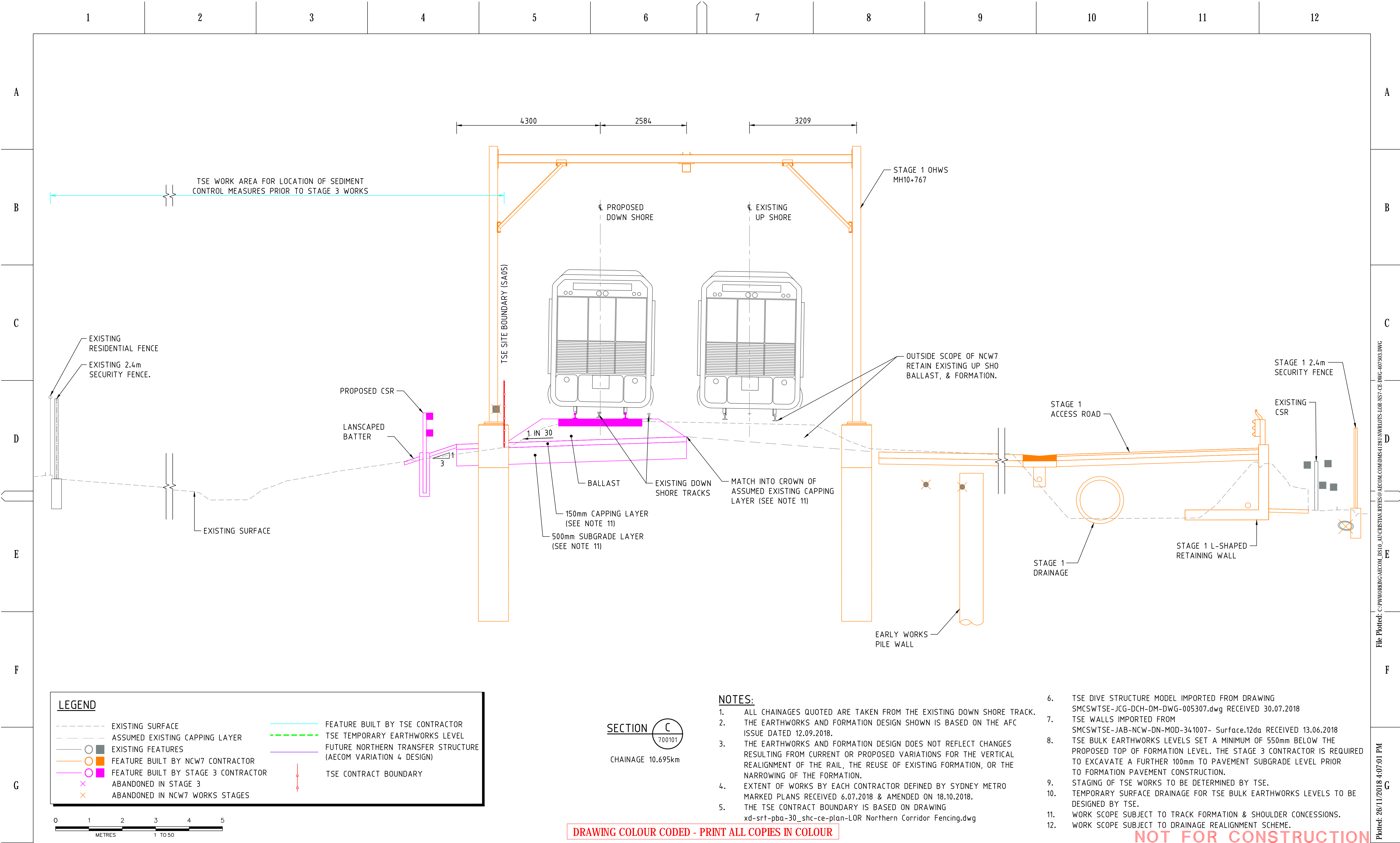
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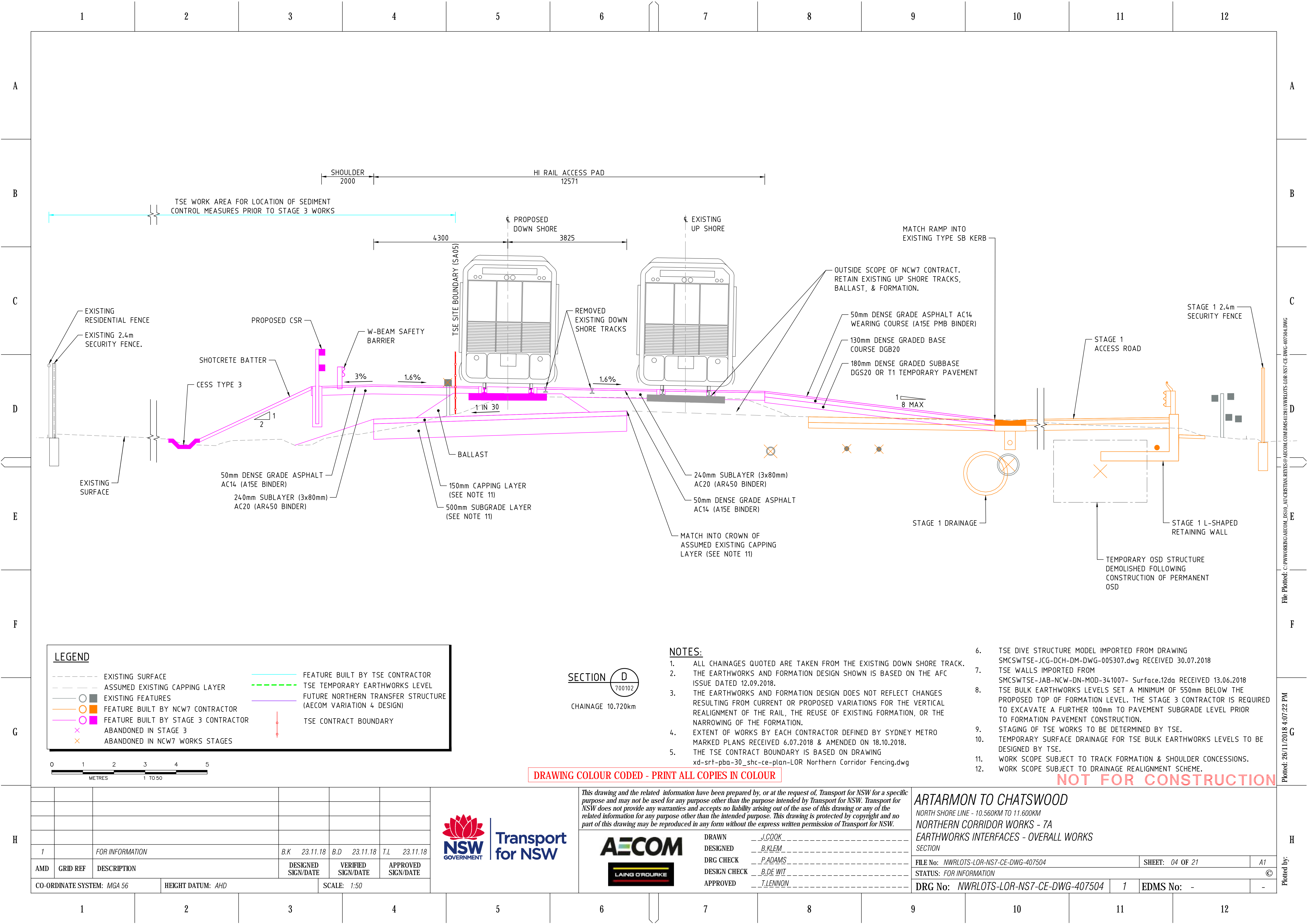
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LEGEND

EXISTING SURFACE

ASSUMED EXISTING CAPPING LAYER

EXISTING FEATURES

FEATURE BUILT BY NCW7 CONTRACTOR

FEATURE BUILT BY STAGE 3 CONTRACTOR

ABANDONED IN STAGE 3

ABANDONED IN NCW7 WORKS STAGES

FEATURE BUILT BY TSE CONTRACTOR

TSE TEMPORARY EARTHWORKS LEVEL

FUTURE NORTHERN TRANSFER STRUCTURE (AECOM VARIATION 4 DESIGN)

TSE CONTRACT BOUNDARY

SECTION **D**  
700102  
CHAINAGE 10.720km

NOTES:

1.

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2.

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TSE DIVE STRUCTURE MODEL IMPORTED FROM DRAWING SMC SWTSE-JCG-DCH-DM-DWG-005307.dwg RECEIVED 30.07.2018

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TSE WALLS IMPORTED FROM SMC SWTSE-JAB-NCW-DN-MOD-341007- Surface.12da RECEIVED 13.06.2018

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NOT FOR CONSTRUCTION

1		FOR INFORMATION	B.K	23.11.18	B.D	23.11.18	T.L	23.11.18
AMD	GRID REF	DESCRIPTION	DESIGNED SIGN/DATE	VERIFIED SIGN/DATE	APPROVED SIGN/DATE			
CO-ORDINATE SYSTEM: MGA 56			HEIGHT DATUM: AHD		SCALE: 1:50			

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AECOM

LAING O'Rourke

DRAWN

DESIGNED

DRG CHECK

DESIGN CHECK

APPROVED

J.COOK

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P.ADAMS

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T.LENNON

ARTARMON TO CHATSWOOD  
NORTH SHORE LINE - 10.560KM TO 11.600KM  
NORTHERN CORRIDOR WORKS - 7A  
EARTHWORKS INTERFACES - OVERALL WORKS  
SECTION

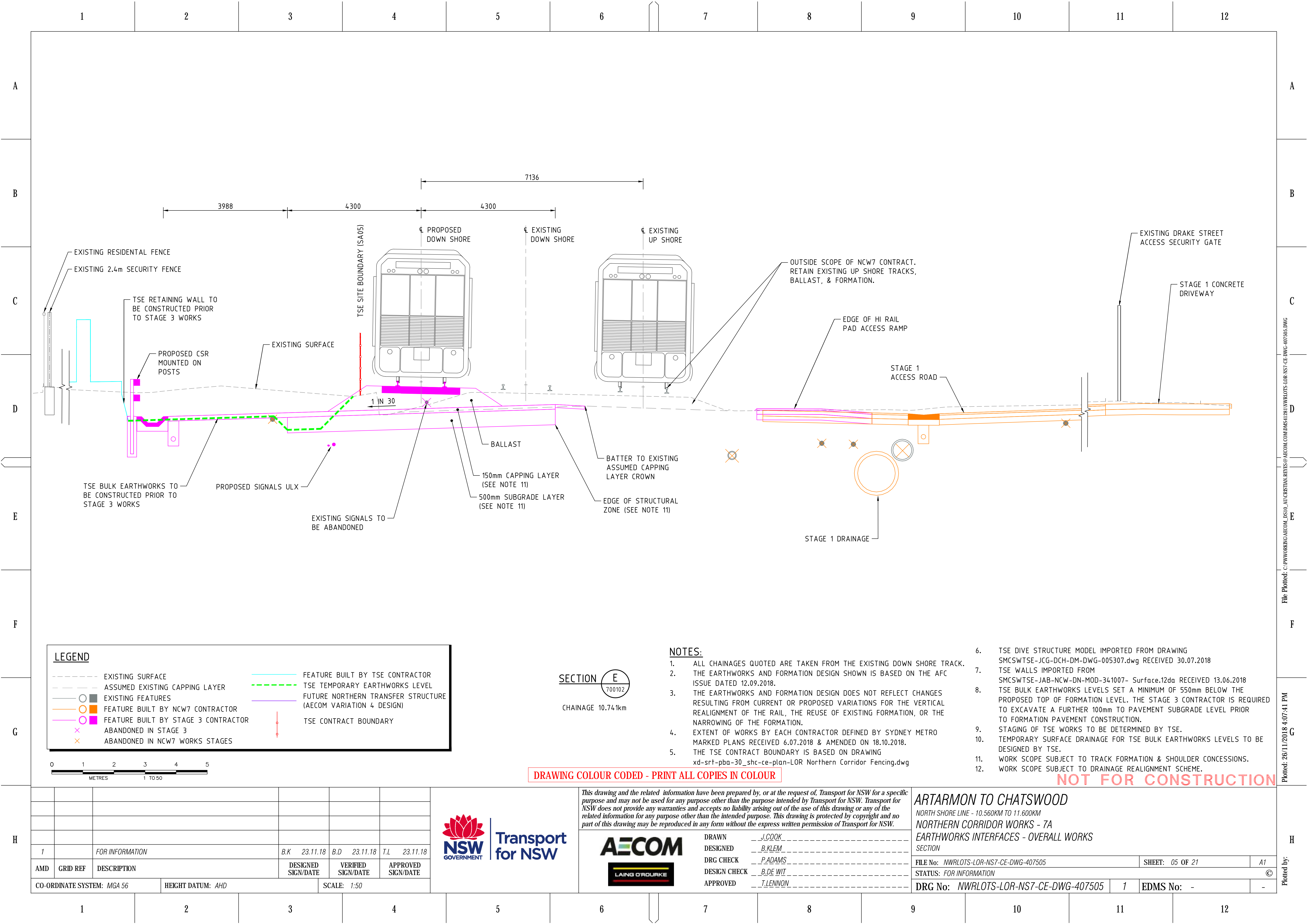
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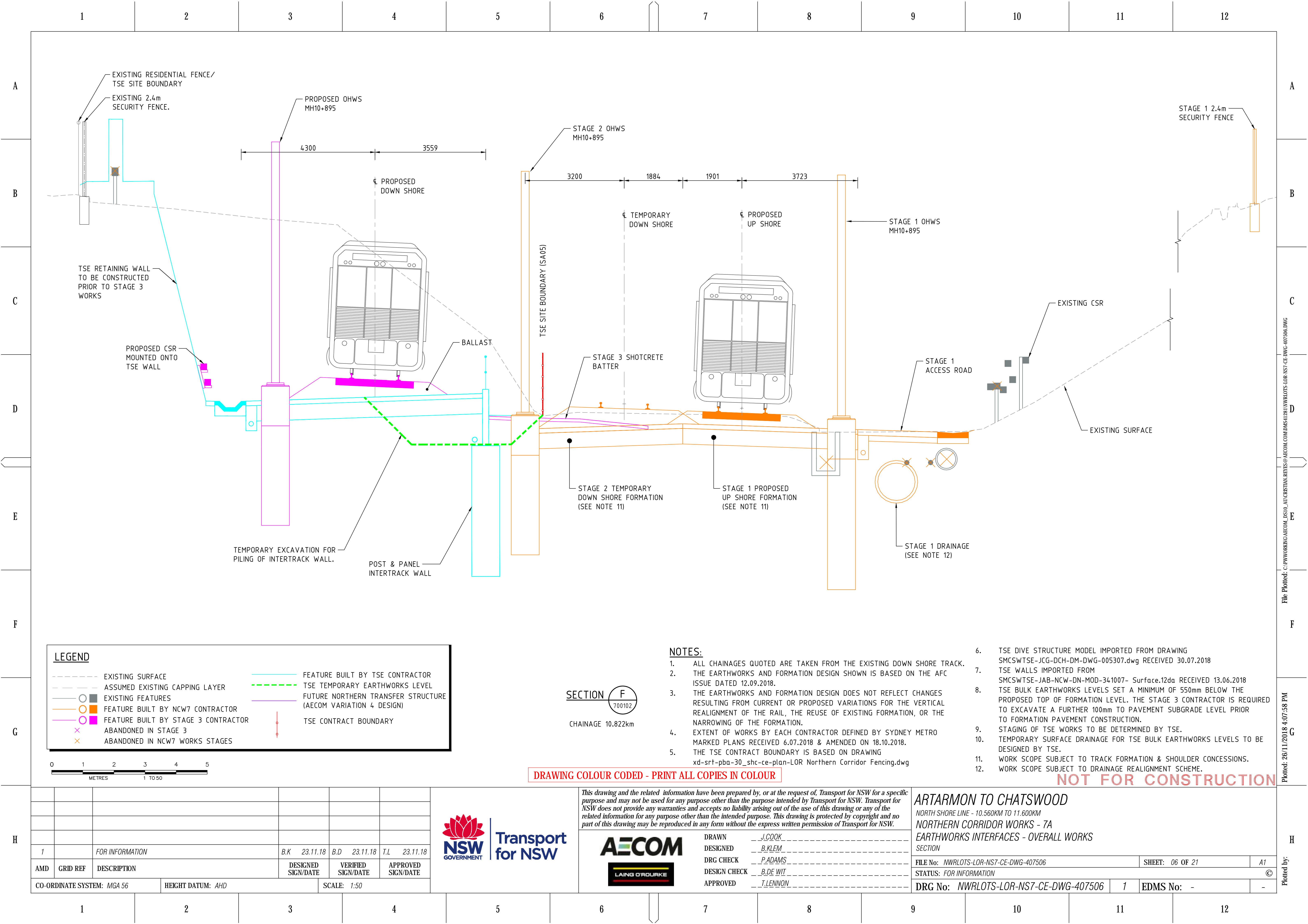
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Plotted by:









LEGEND

EXISTING SURFACE

ASSUMED EXISTING CAPPING LAYER

EXISTING FEATURES

FEATURE BUILT BY NCW7 CONTRACTOR

FEATURE BUILT BY STAGE 3 CONTRACTOR

ABANDONED IN STAGE 3

ABANDONED IN NCW7 WORKS STAGES

FEATURE BUILT BY TSE CONTRACTOR

TSE TEMPORARY EARTHWORKS LEVEL

FUTURE NORTHERN TRANSFER STRUCTURE (AECOM VARIATION 4 DESIGN)

TSE CONTRACT BOUNDARY

012345

METRES

1 TO 50

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THE EARTHWORKS AND FORMATION DESIGN SHOWN IS BASED ON THE AFC ISSUE DATED 12.09.2018.

3.

THE EARTHWORKS AND FORMATION DESIGN DOES NOT REFLECT CHANGES RESULTING FROM CURRENT OR PROPOSED VARIATIONS FOR THE VERTICAL REALIGNMENT OF THE RAIL, THE REUSE OF EXISTING FORMATION, OR THE NARROWING OF THE FORMATION.

4.

EXTENT OF WORKS BY EACH CONTRACTOR DEFINED BY SYDNEY METRO MARKED PLANS RECEIVED 6.07.2018 & AMENDED ON 18.10.2018.

5.

THE TSE CONTRACT BOUNDARY IS BASED ON DRAWING xd-srt-pba-30\_shc-ce-plan-LOR Northern Corridor Fencing.dwg

6.

TSE DIVE STRUCTURE MODEL IMPORTED FROM DRAWING SMC SWTSE-JCG-DCH-DM-DWG-005307.dwg RECEIVED 30.07.2018

7.

TSE WALLS IMPORTED FROM SMC SWTSE-JAB-NCW-DN-MOD-341007- Surface.12da RECEIVED 13.06.2018

8.

TSE BULK EARTHWORKS LEVELS SET A MINIMUM OF 550mm BELOW THE PROPOSED TOP OF FORMATION LEVEL. THE STAGE 3 CONTRACTOR IS REQUIRED TO EXCAVATE A FURTHER 100mm TO PAVEMENT SUBGRADE LEVEL PRIOR TO FORMATION PAVEMENT CONSTRUCTION.

9.

STAGING OF TSE WORKS TO BE DETERMINED BY TSE.

10.

TEMPORARY SURFACE DRAINAGE FOR TSE BULK EARTHWORKS LEVELS TO BE DESIGNED BY TSE.

11.

WORK SCOPE SUBJECT TO TRACK FORMATION & SHOULDER CONCESSIONS.

12.

WORK SCOPE SUBJECT TO DRAINAGE REALIGNMENT SCHEME.

SECTION F

700102

CHAINAGE 10.822km

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DRAWN

J. COOK

DESIGNED

B. KLEM

DRG CHECK

P. ADAMS

DESIGN CHECK

B. DE WIT

APPROVED

T. LENNON

ARTARMON TO CHATSWOOD

NORTH SHORE LINE - 10.560KM TO 11.600KM

NORTHERN CORRIDOR WORKS - 7A

EARTHWORKS INTERFACES - OVERALL WORKS

SECTION

FILE No: NWRL0TS-LOR-NS7-CE-DWG-407506	SHEET: 06 OF 21	A1
STATUS: FOR INFORMATION		
DRG No: NWRL0TS-LOR-NS7-CE-DWG-407506	1	EDMS No: -

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AMD	GRID REF	DESCRIPTION		DESIGNED SIGN/DATE	VERIFIED SIGN/DATE APPROVED SIGN/DATE
CO-ORDINATE SYSTEM: MGA 56		HEIGHT DATUM: AHD			SCALE: 1:50

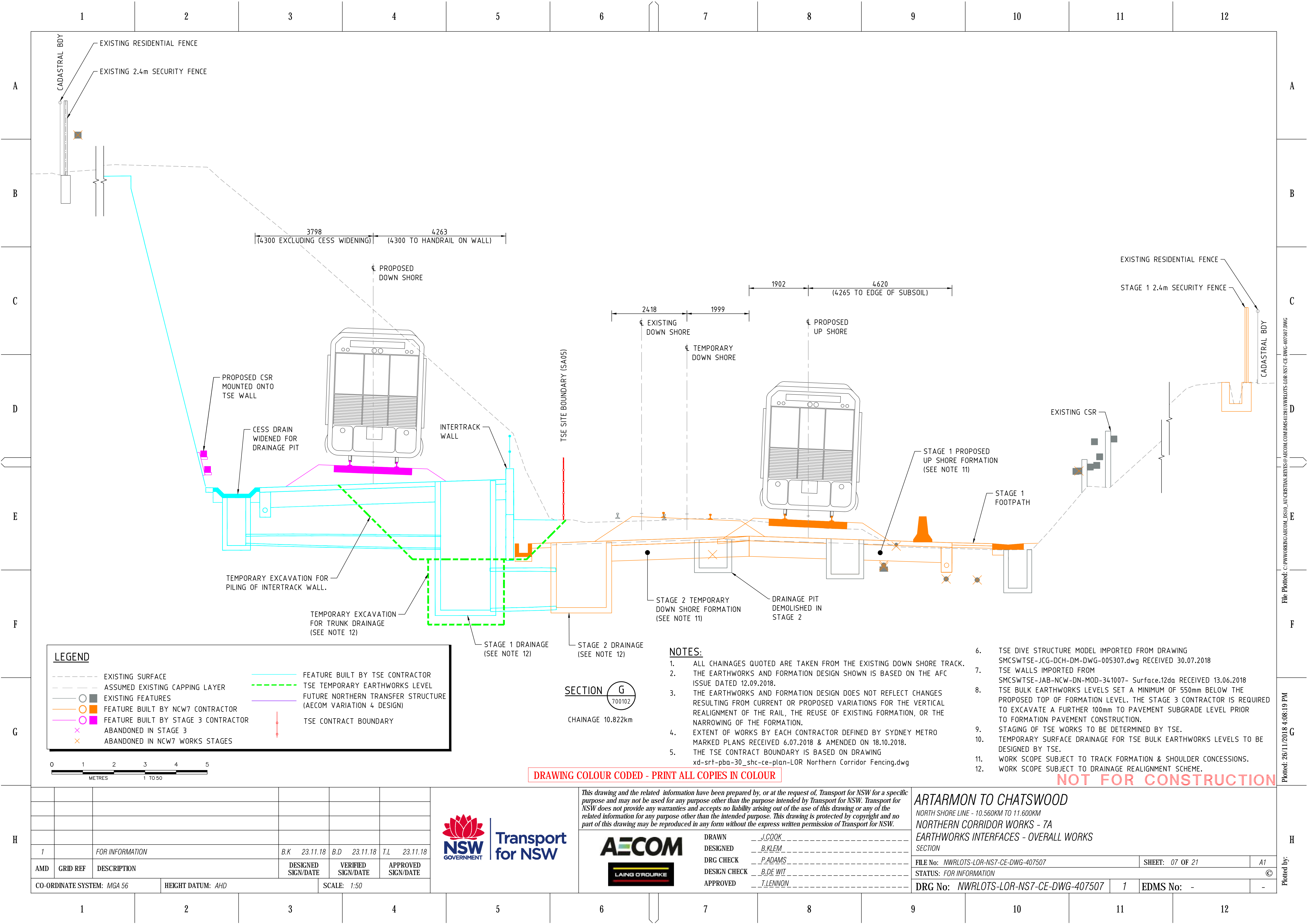


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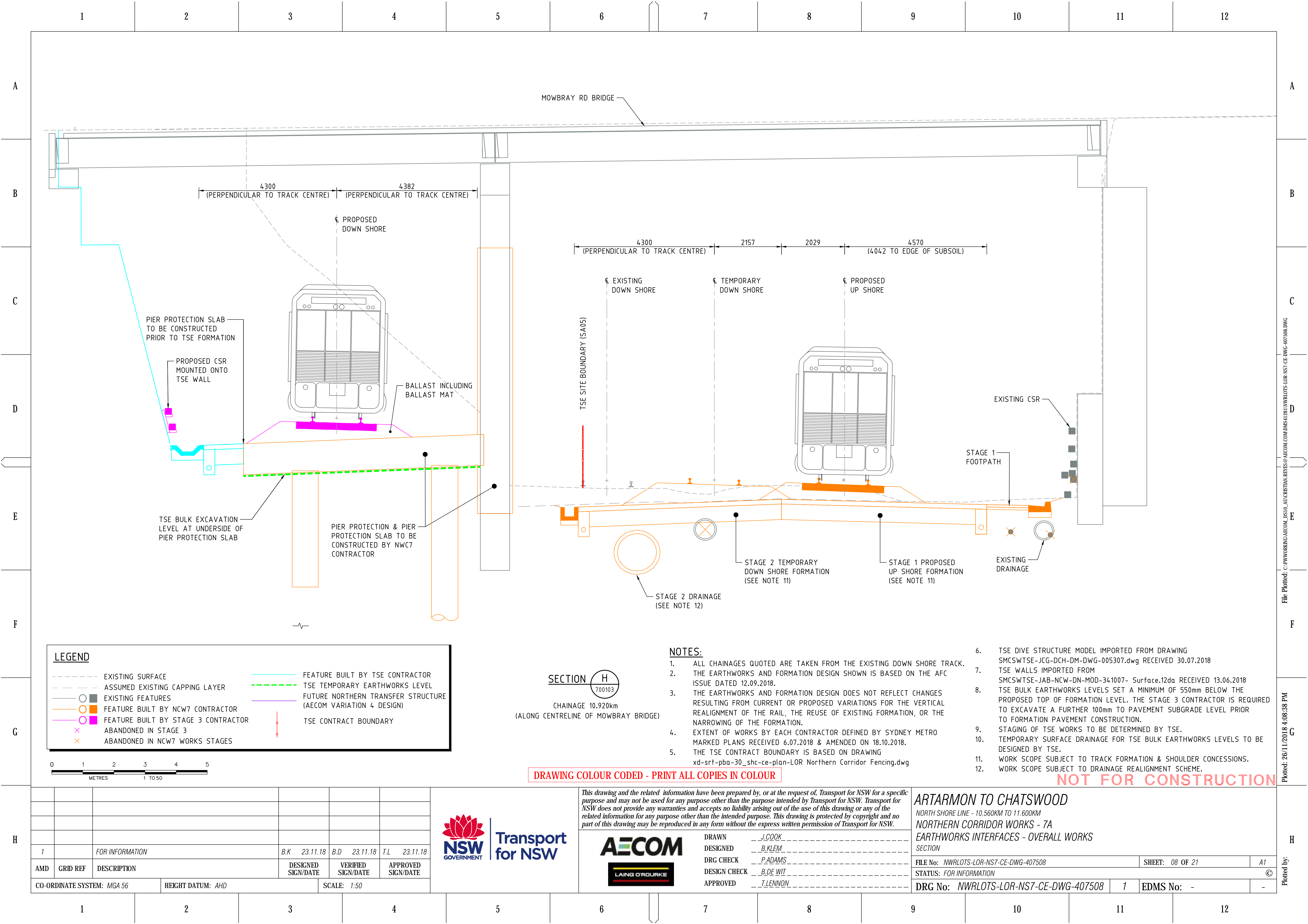
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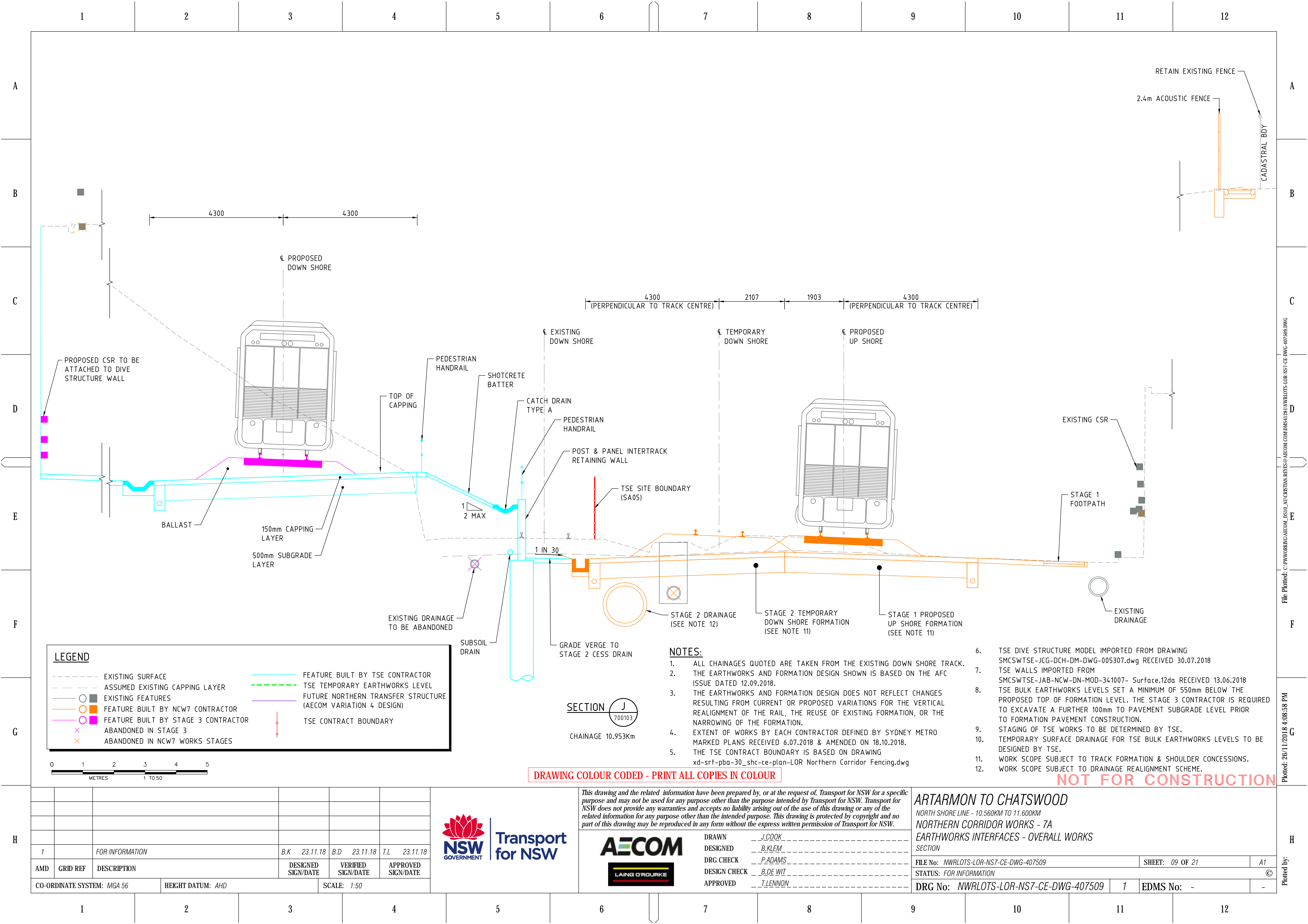




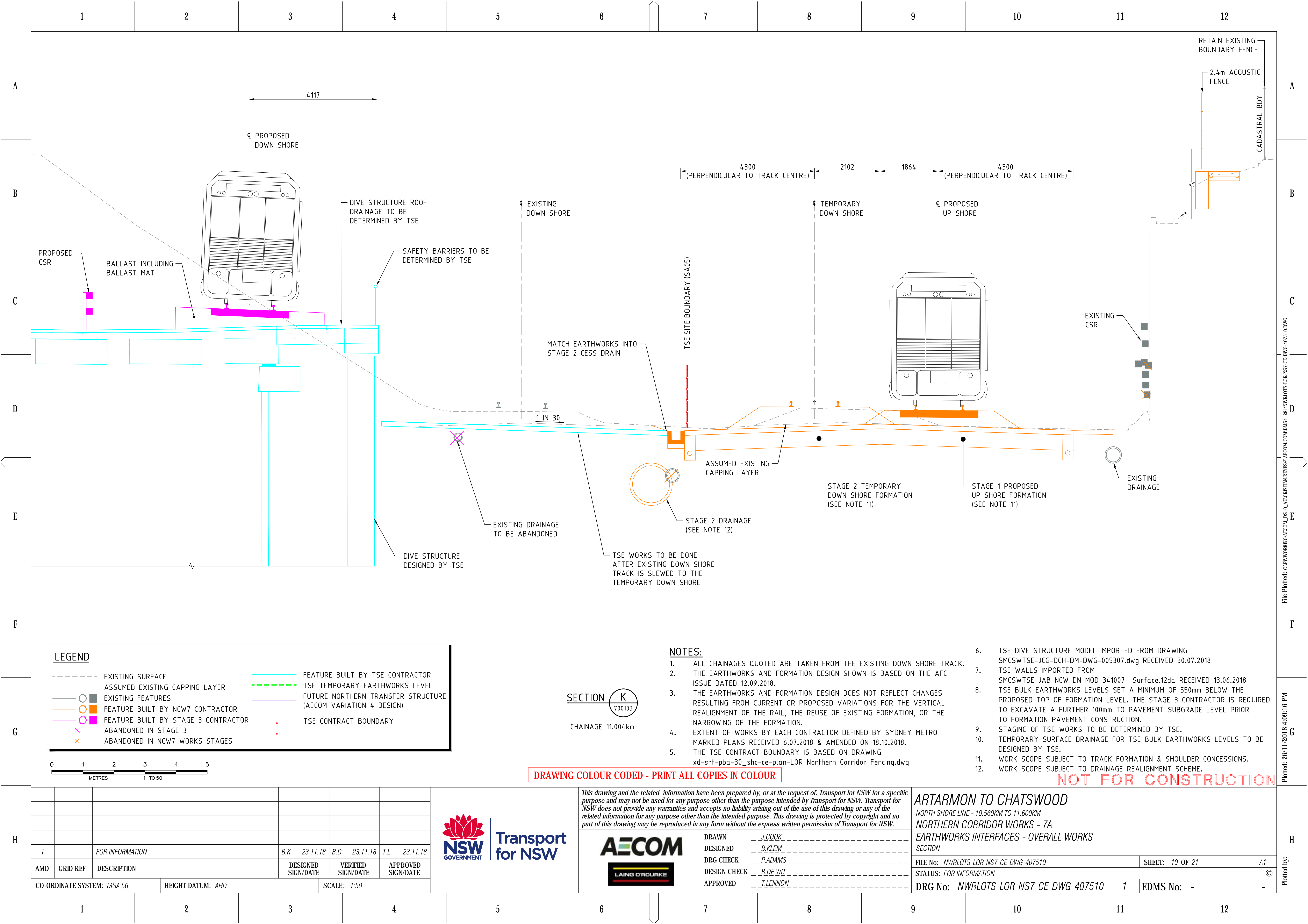








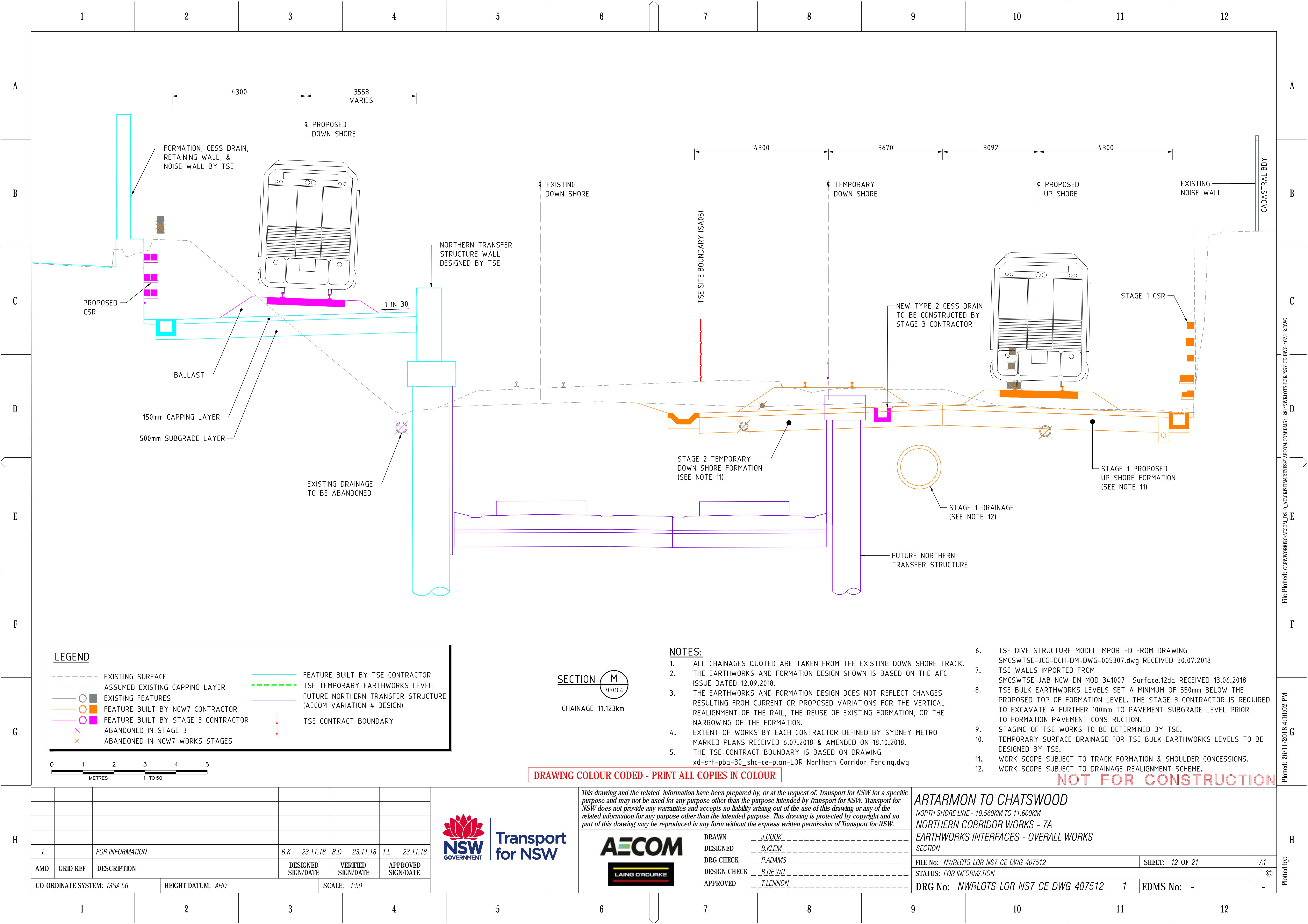




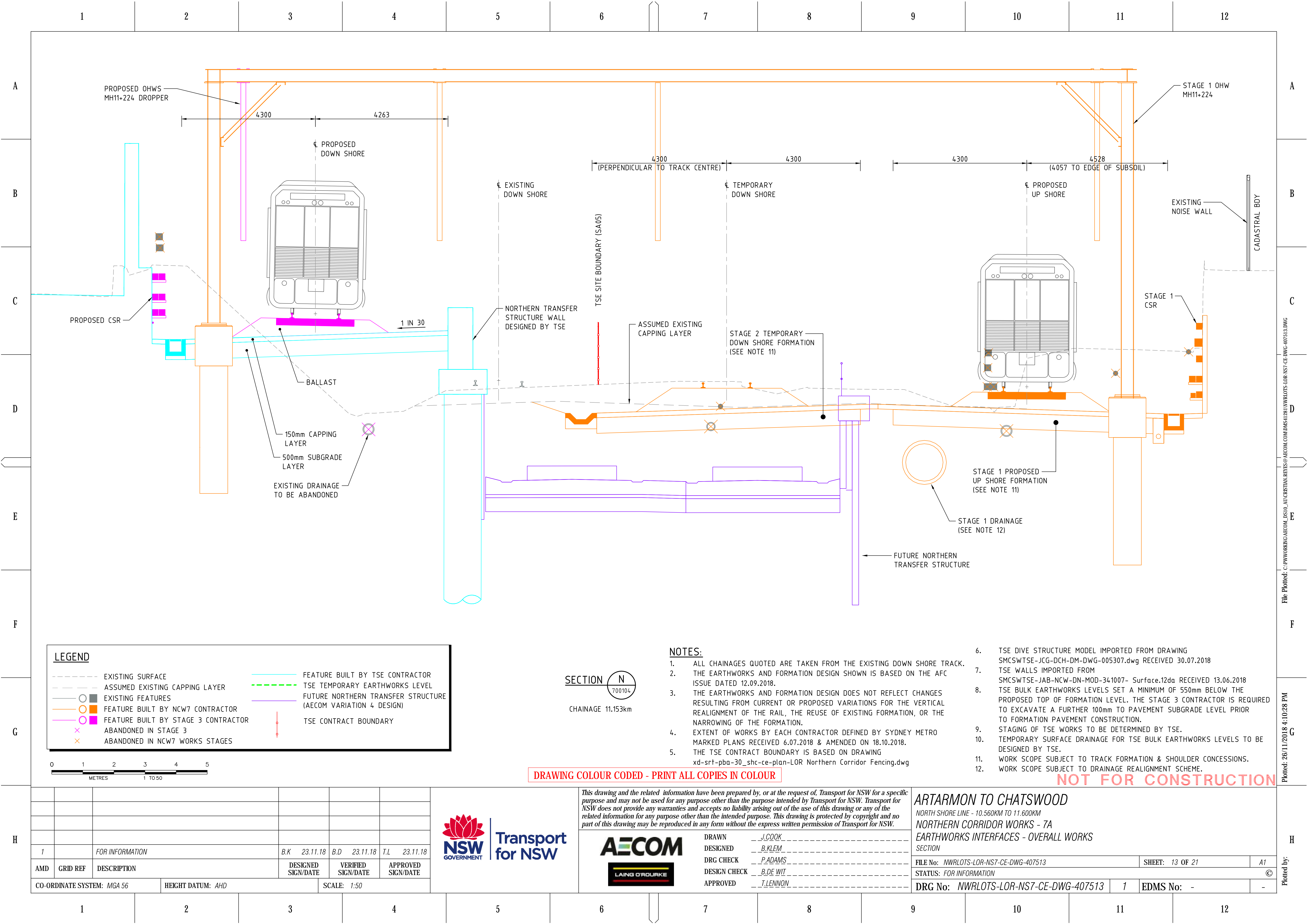




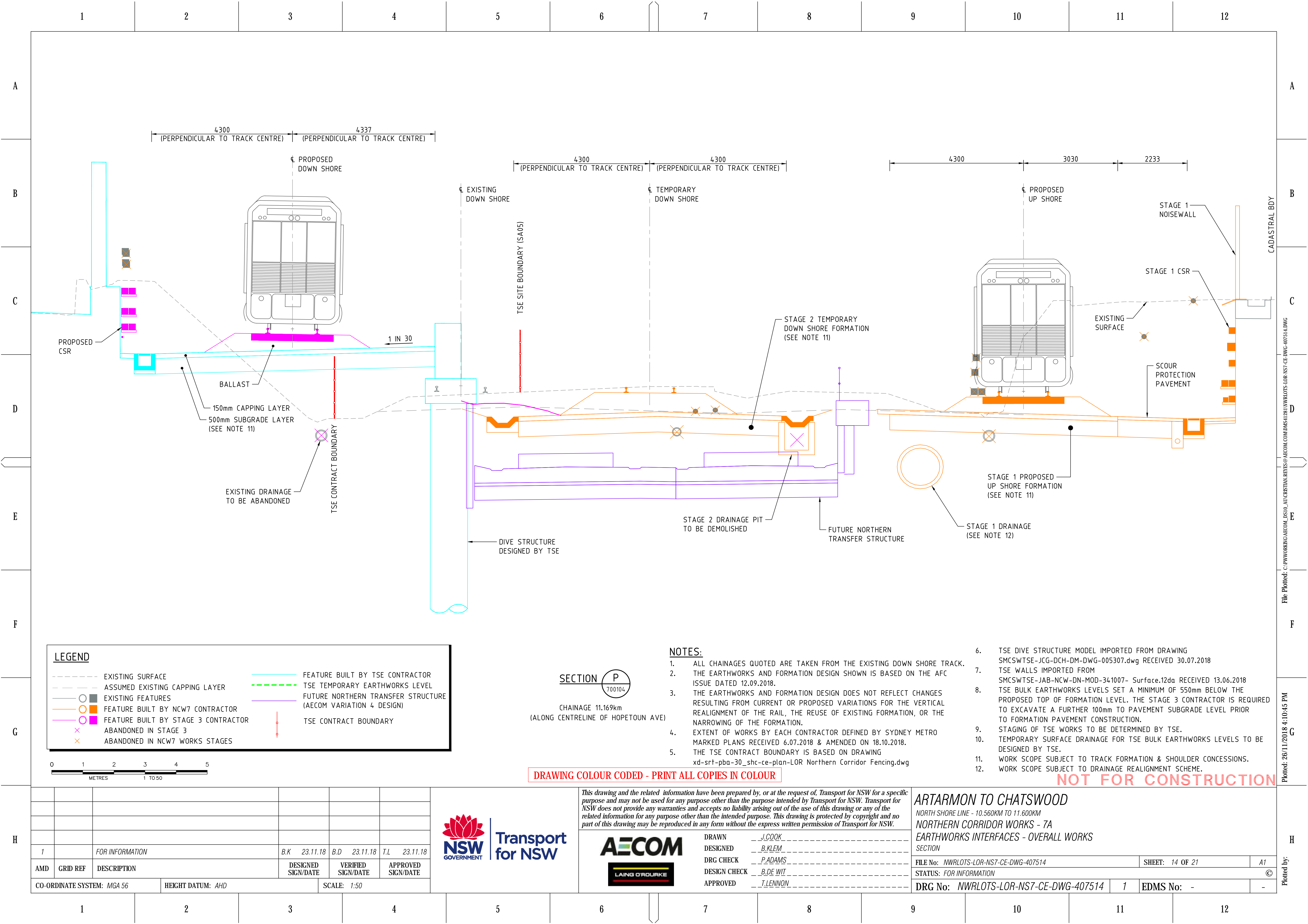




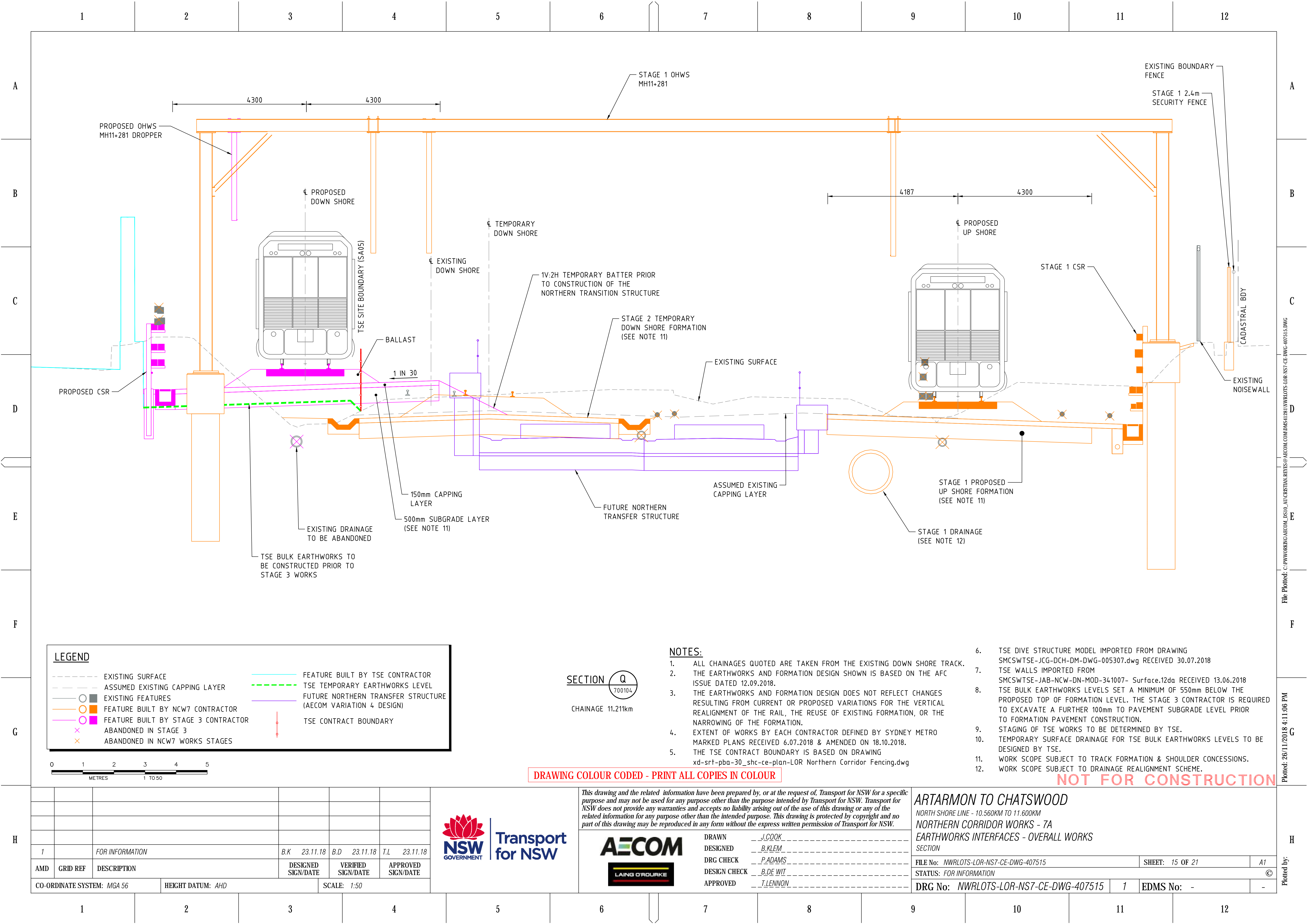




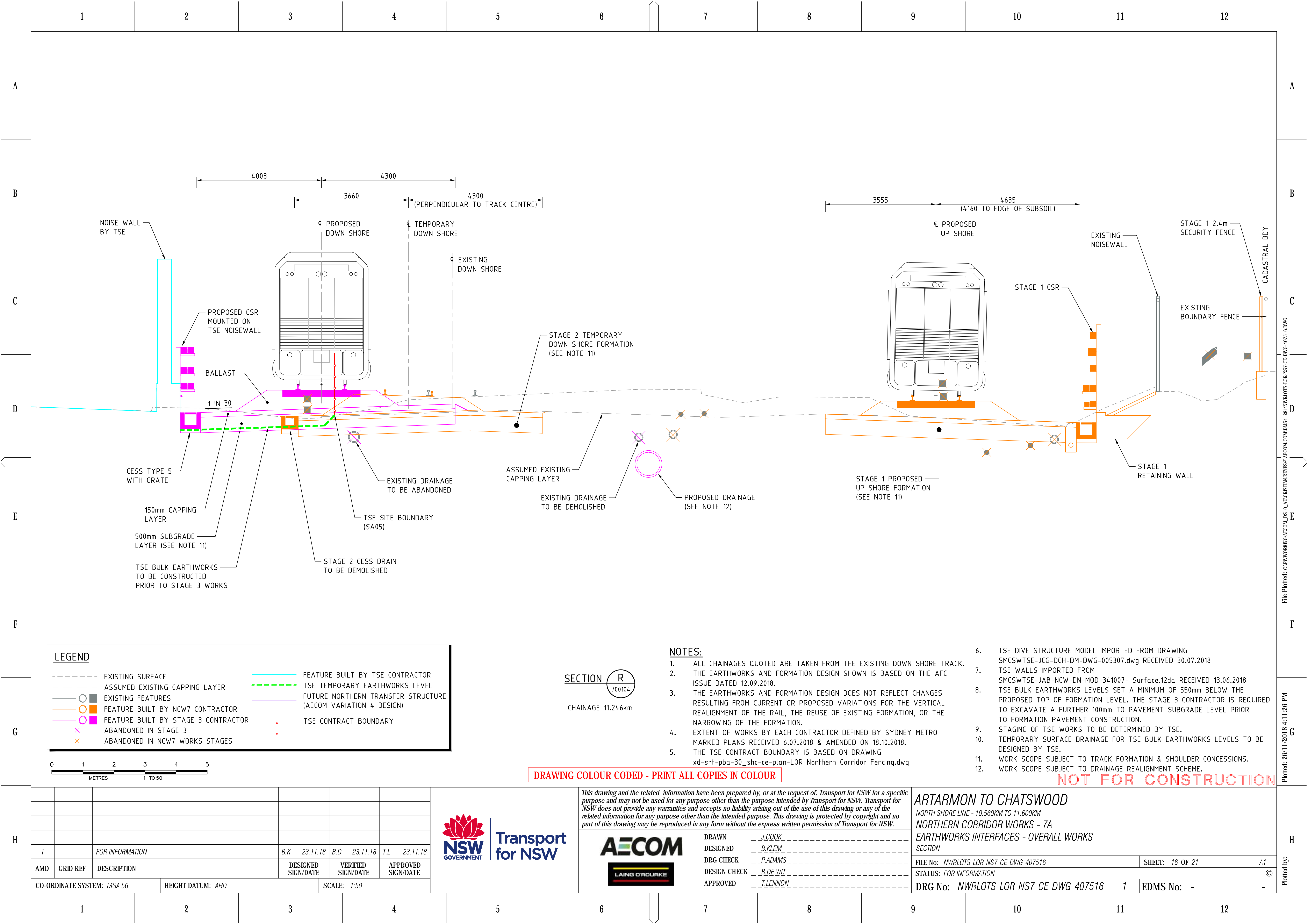




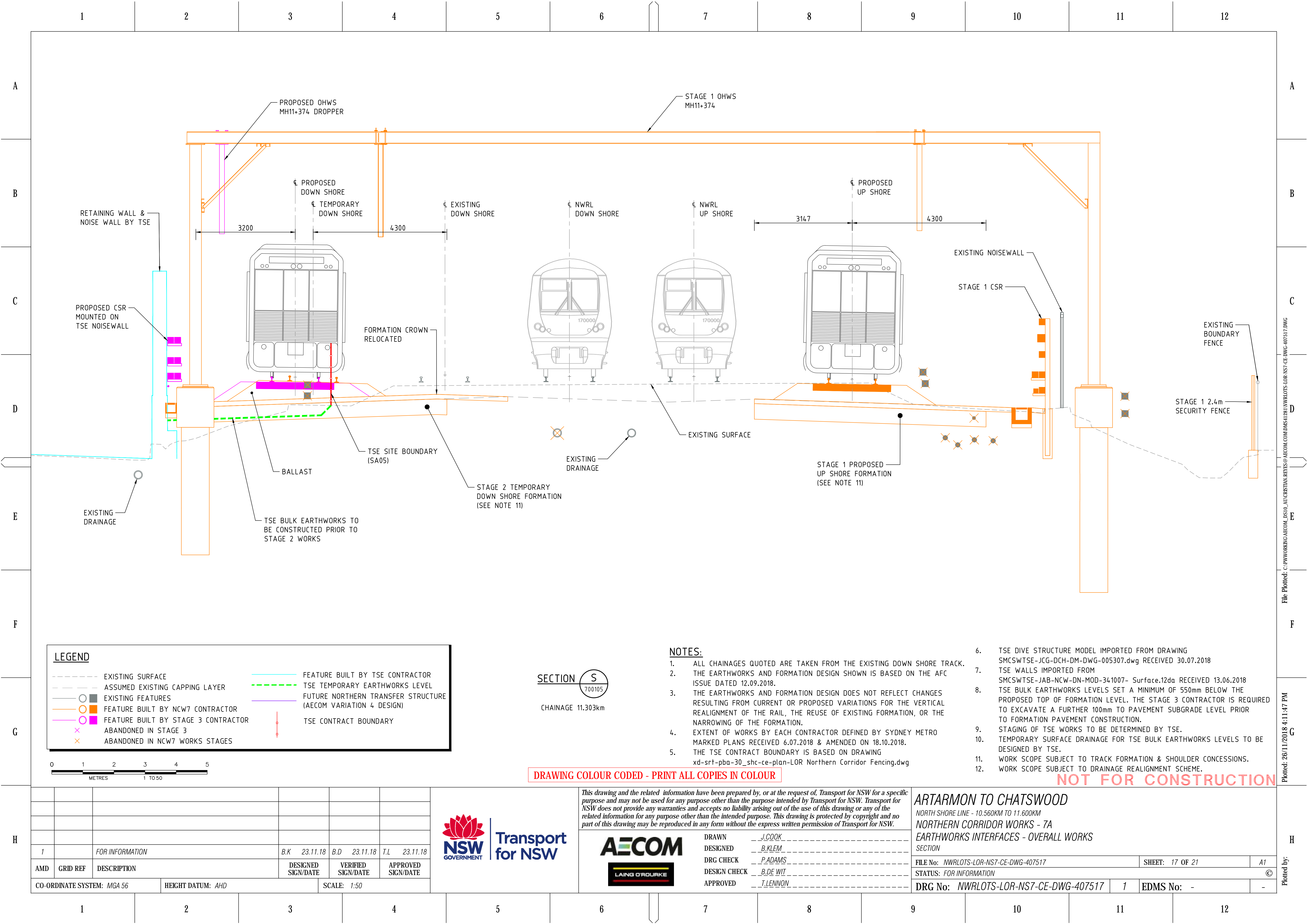




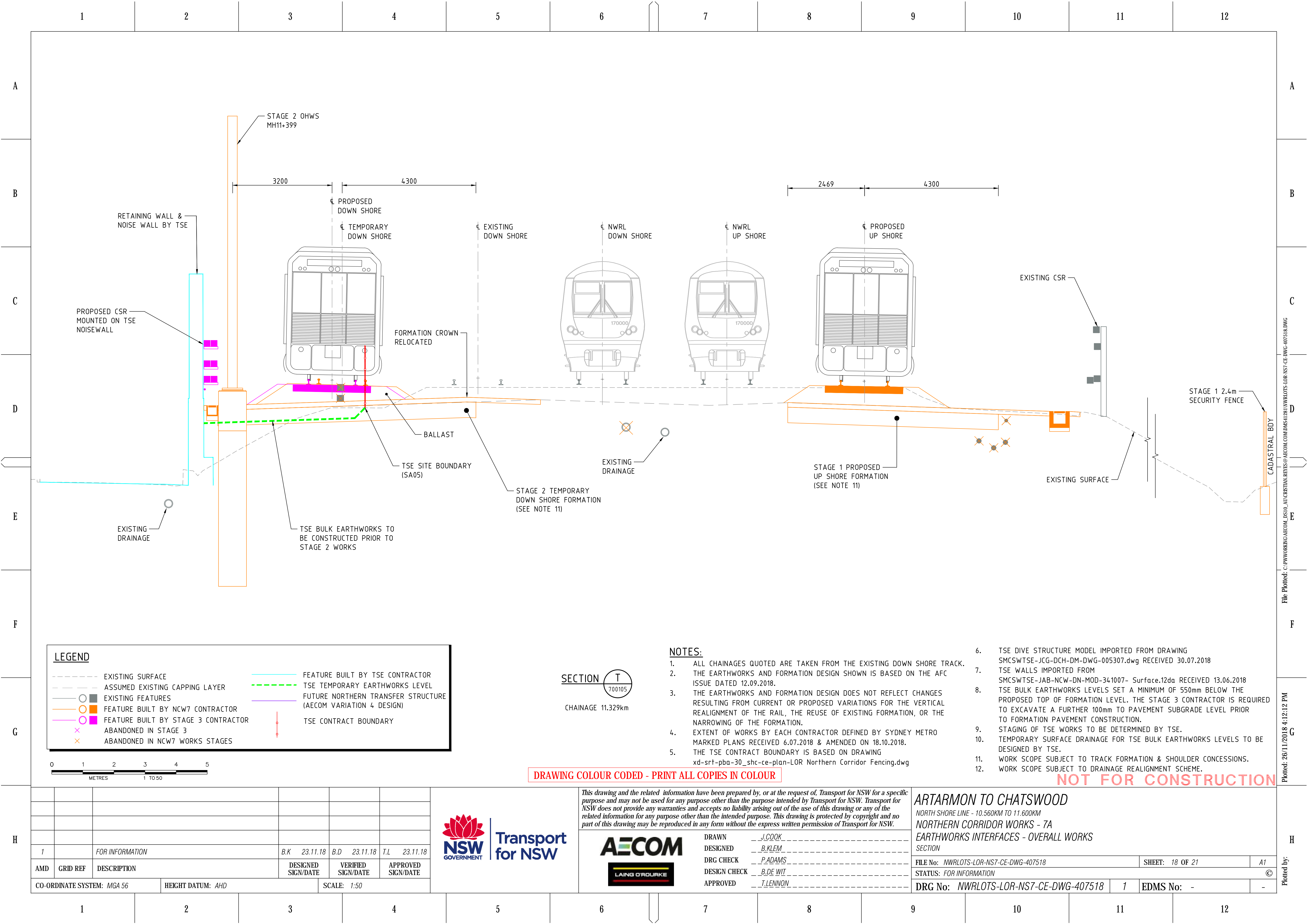




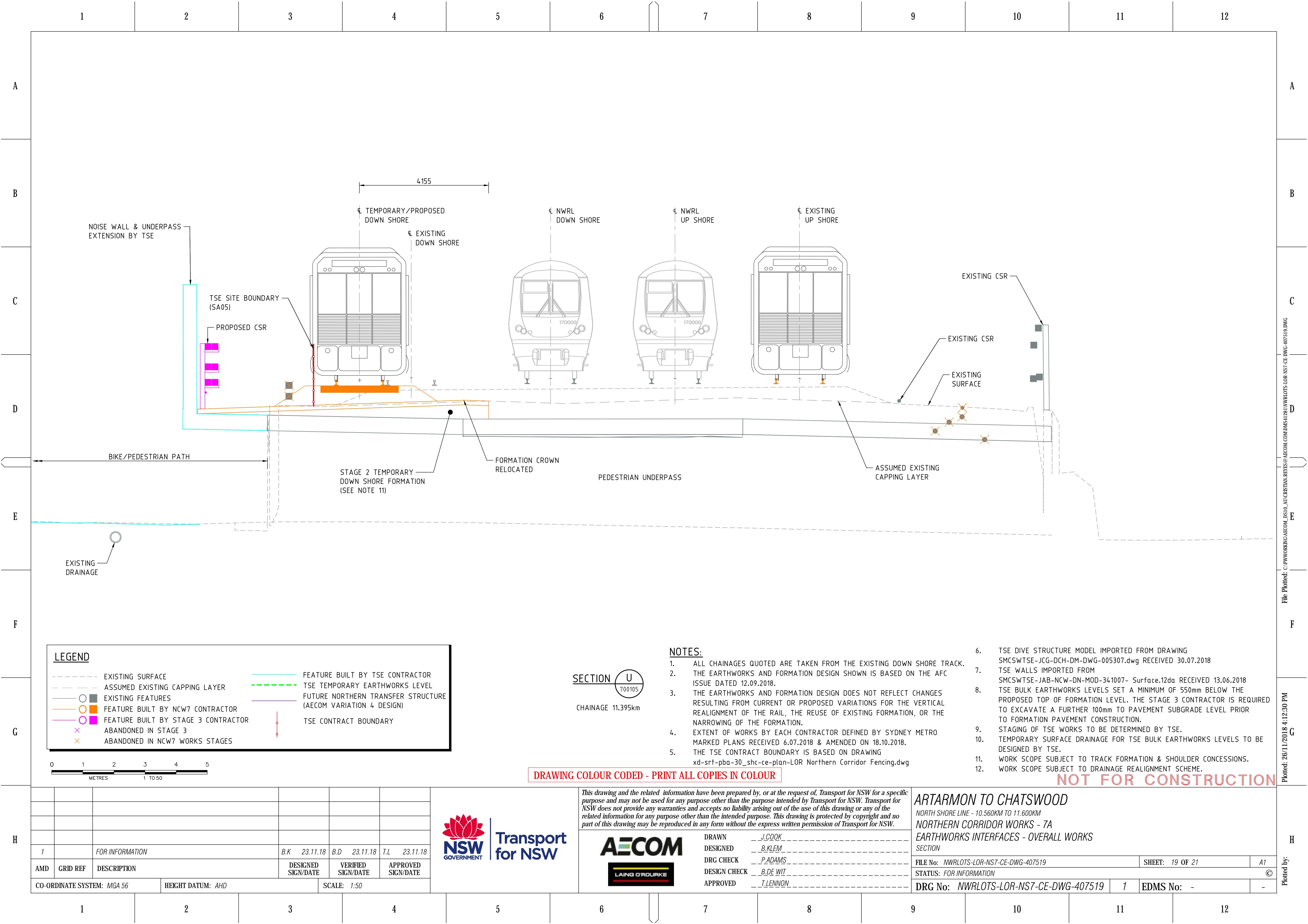




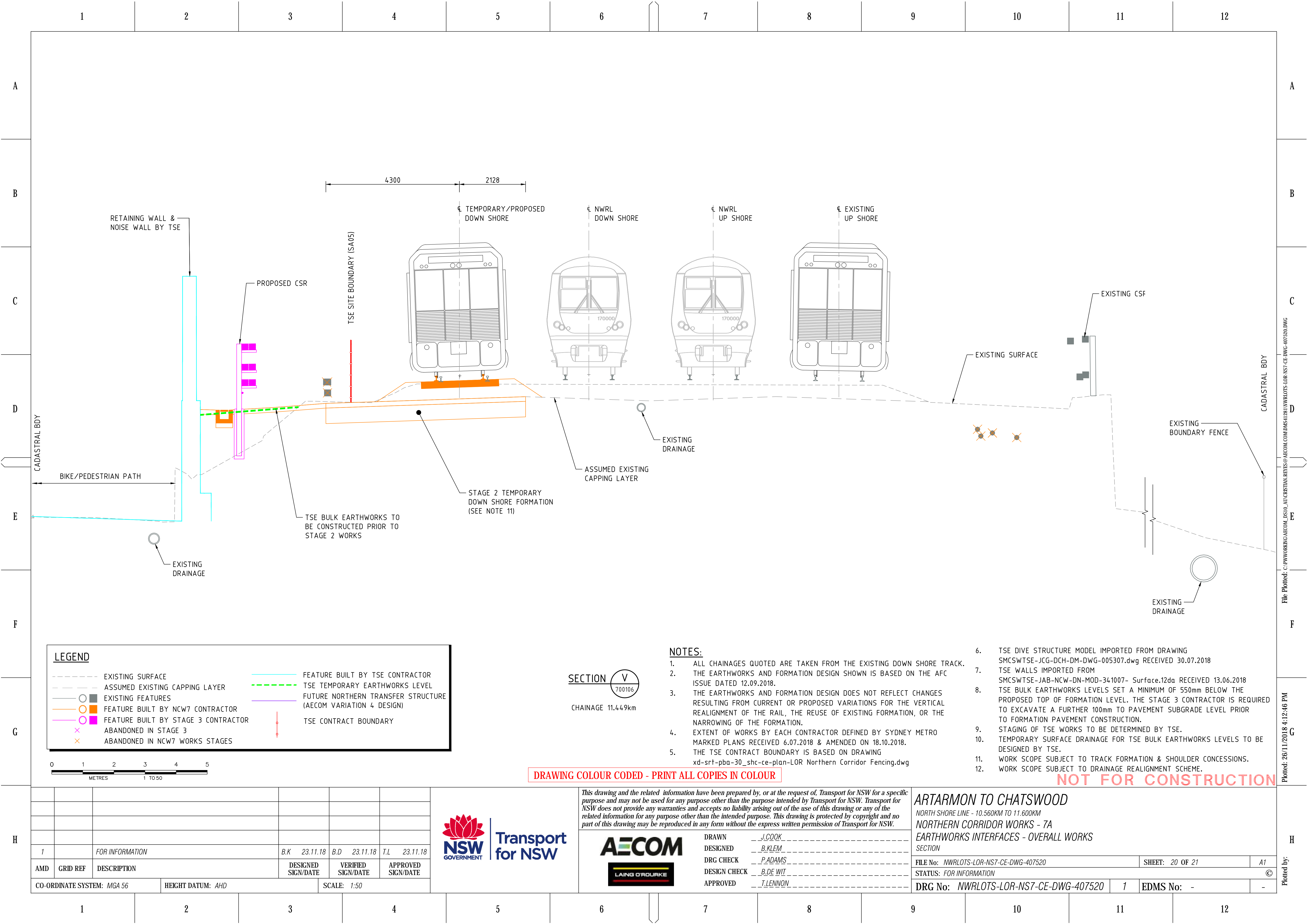












LEGEND

EXISTING SURFACE

ASSUMED EXISTING CAPPING LAYER

EXISTING FEATURES

FEATURE BUILT BY NCW7 CONTRACTOR

FEATURE BUILT BY STAGE 3 CONTRACTOR

ABANDONED IN STAGE 3

ABANDONED IN NCW7 WORKS STAGES

FEATURE BUILT BY TSE CONTRACTOR

TSE TEMPORARY EARTHWORKS LEVEL

FUTURE NORTHERN TRANSFER STRUCTURE (AECOM VARIATION 4 DESIGN)

TSE CONTRACT BOUNDARY

SECTION V  
700106

CHAINAGE 11.449km

NOTES:

- ALL CHAINAGES QUOTED ARE TAKEN FROM THE EXISTING DOWN SHORE TRACK.
- THE EARTHWORKS AND FORMATION DESIGN SHOWN IS BASED ON THE AFC ISSUE DATED 12.09.2018.
- THE EARTHWORKS AND FORMATION DESIGN DOES NOT REFLECT CHANGES RESULTING FROM CURRENT OR PROPOSED VARIATIONS FOR THE VERTICAL REALIGNMENT OF THE RAIL, THE REUSE OF EXISTING FORMATION, OR THE NARROWING OF THE FORMATION.
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- TSE DIVE STRUCTURE MODEL IMPORTED FROM DRAWING SMCWTSE-JCG-DCH-DM-DWG-005307.dwg RECEIVED 30.07.2018
- TSE WALLS IMPORTED FROM SMCWTSE-JAB-NCW-DN-MOD-341007- Surface.12da RECEIVED 13.06.2018
- TSE BULK EARTHWORKS LEVELS SET A MINIMUM OF 550mm BELOW THE PROPOSED TOP OF FORMATION LEVEL. THE STAGE 3 CONTRACTOR IS REQUIRED TO EXCAVATE A FURTHER 100mm TO PAVEMENT SUBGRADE LEVEL PRIOR TO FORMATION PAVEMENT CONSTRUCTION.
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- TEMPORARY SURFACE DRAINAGE FOR TSE BULK EARTHWORKS LEVELS TO BE DESIGNED BY TSE.
- WORK SCOPE SUBJECT TO TRACK FORMATION & SHOULDER CONCESSIONS.
- WORK SCOPE SUBJECT TO DRAINAGE REALIGNMENT SCHEME.

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NOT FOR CONSTRUCTION

1		FOR INFORMATION	B.K	23.11.18	B.D	23.11.18	T.L	23.11.18
AMD	GRID REF	DESCRIPTION	DESIGNED SIGN/DATE	VERIFIED SIGN/DATE	APPROVED SIGN/DATE			
CO-ORDINATE SYSTEM: MGA 56			HEIGHT DATUM: AHD		SCALE: 1:50			

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DRAWN	J.COOK
DESIGNED	B.KLEM
DRG CHECK	P.ADAMS
DESIGN CHECK	B.DE WIT
APPROVED	T.LENNON

ARTARMON TO CHATSWOOD

NORTH SHORE LINE - 10.560KM TO 11.600KM  
NORTHERN CORRIDOR WORKS - 7A  
EARTHWORKS INTERFACES - OVERALL WORKS  
SECTION

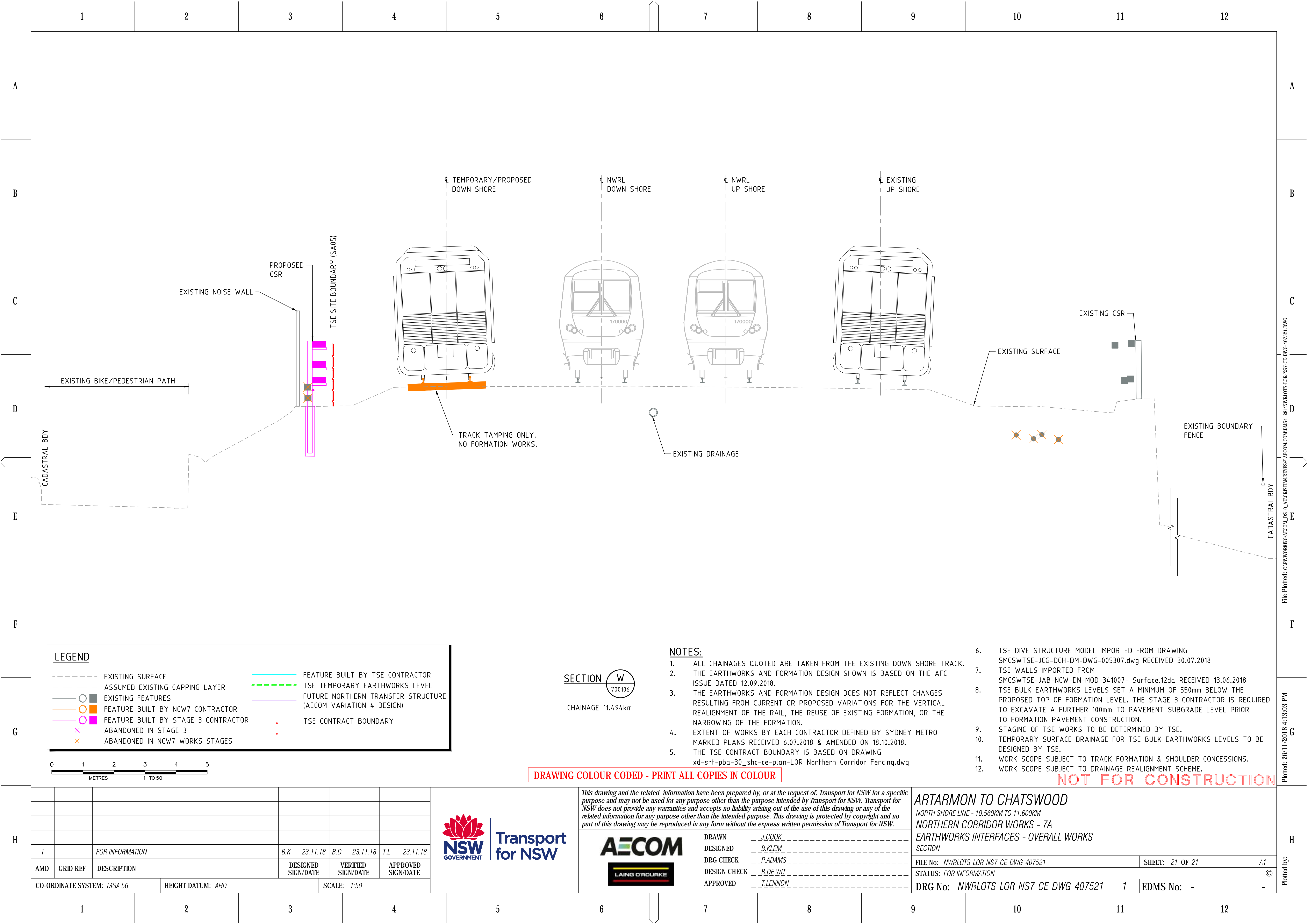
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STATUS: FOR INFORMATION		
DRG No: NWRL0TS-LOR-NS7-CE-DWG-407520	1	EDMS No: -

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Plotted by:







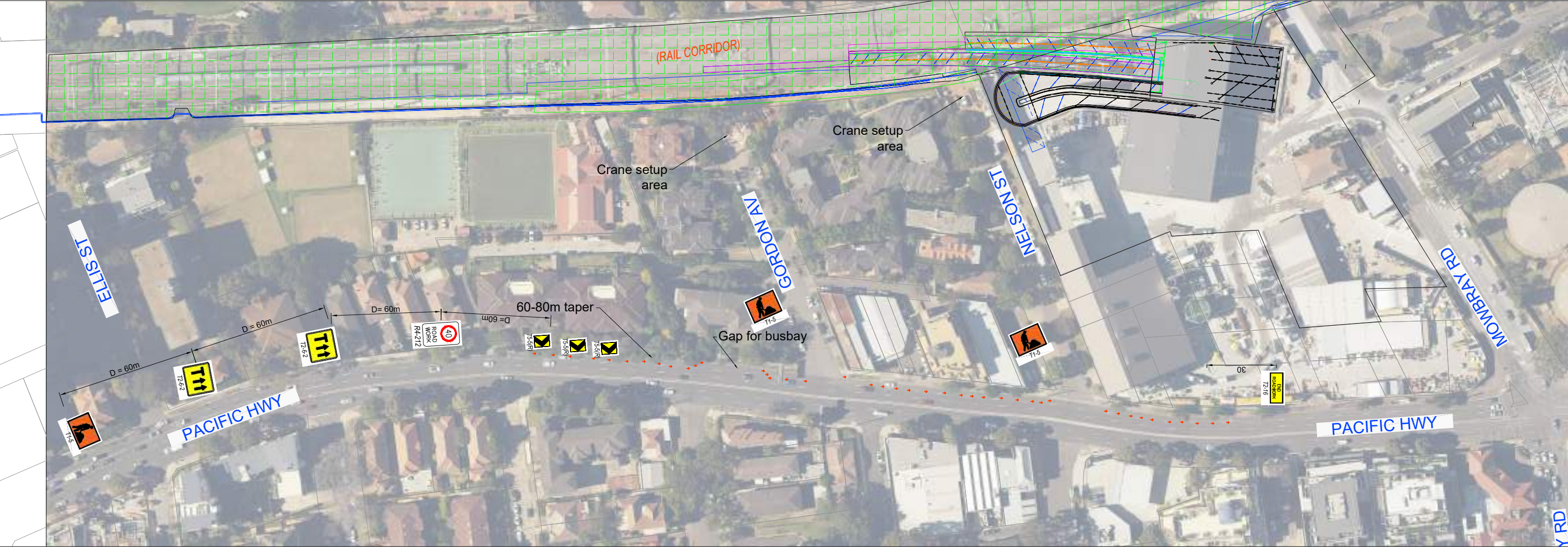
## Appendix B. Staging Plans and TCPs





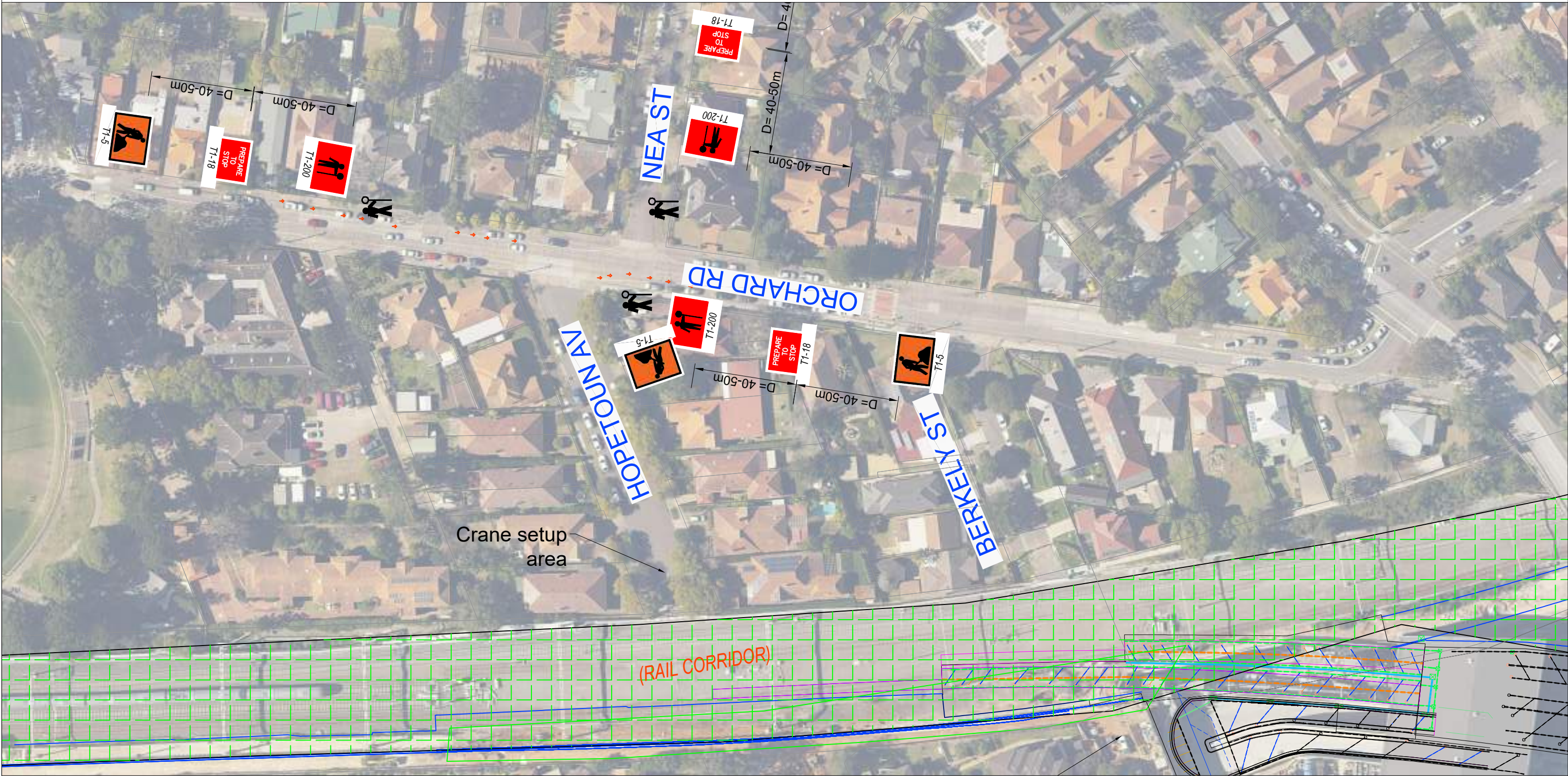
							NOTES	PLOT DATE / TIME			PLOT BY M SIM	CLIENT		Long Vehicle Maneuvering Plan into Gordon Ave, Nelson St, Hopetoun Ave and Berkeley Ct.			A3
LEGEND		REVISION DESC.	REV	DATE	APPROVAL	SCALES ON A3 SIZE DRAWING	DRAWINGS / DESIGN PREPARED BY		TITLE	NAME	DATE						
Notes: 1. Min. 1.2m gap between traffic lanes and edge of work area.									DRAWN	M.SIM	14/11/19						
									DRG CHECK	M.SIM	14/11/19						
									DESIGN								
									DESIGN CHECK			PREPARED FOR		Systems Connect			
									TRAFFIC MNGR								
														ISSUE STATUS	SHEET No.		ISSUE
														FOR INFORMATION	1 of 1		





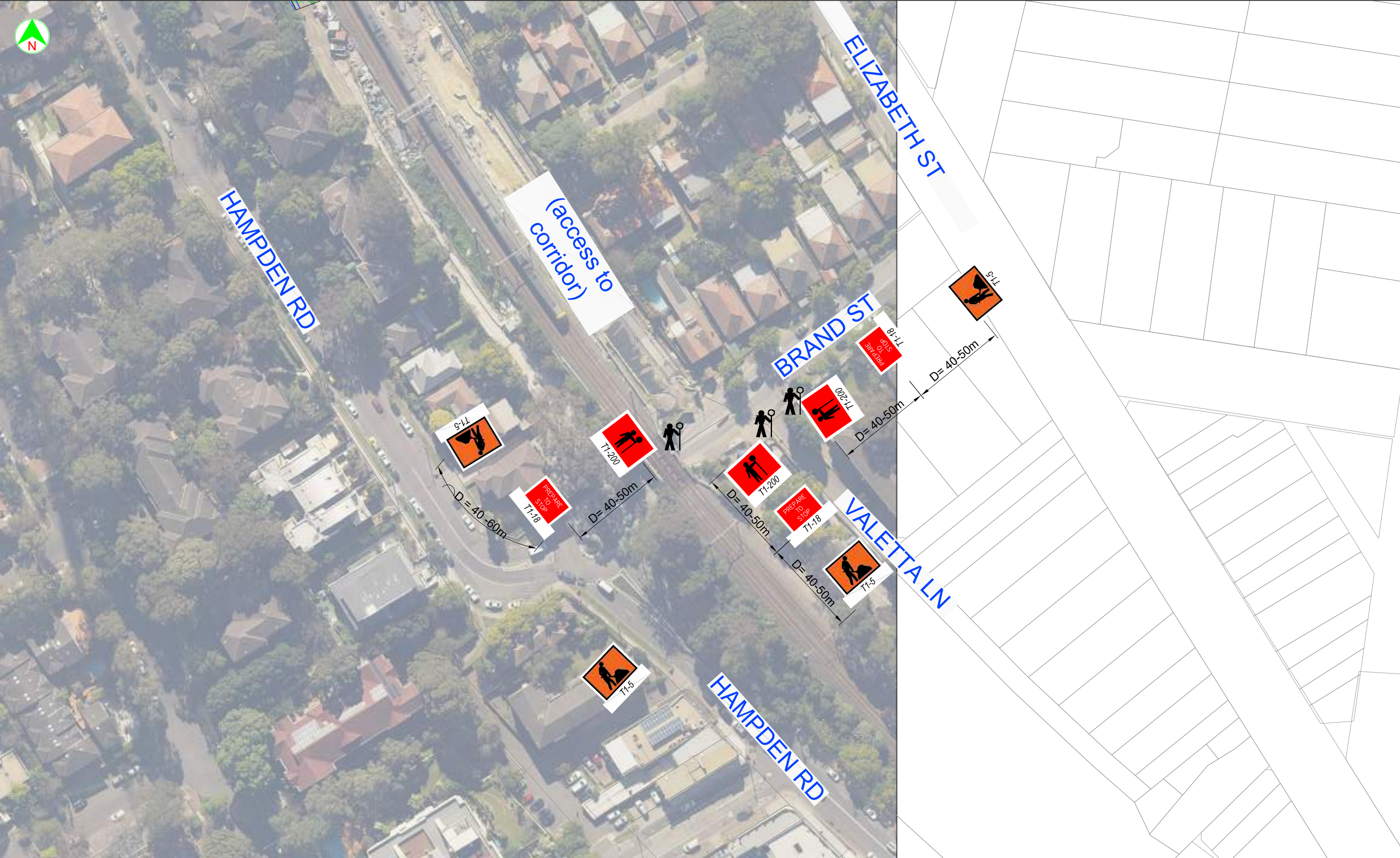
LEGEND											REVISION DESC.		REV	DATE	APPROVAL	SCALES ON A3 SIZE DRAWING		NOTES		PLOT DATE / TIME		PLOT BY M SIM		CLIENT		Pacific Hwy SB Lane 1 closure (to assist long vehicles) existing Gordon Ave and Nelson St		A3				
Notes:																N.T.S		Mong Sim. PWZTMP Card # 0037361001.		DRAWN		M.SIM		5/2/20		PREPARED FOR  Systems Connect		<div>SC TCP 1028</div> <div>ISSUE STATUS</div>		SHEET No. 1 of 1		ISSUE 2
1. Lane 1 closure remove when semi trailer has mobilised.																				DRG CHECK		M.SIM		5/2/20								
2. Signs spacing 60 - 70m. Adjust to suit site constrains.																				DESIGN												
3. Merge taper min. 60m.																				DESIGN CHECK												
4. Adjust cones for bus stop gap before Gordon Ave.																				TRAFFIC MNGR												
5. TCP prepared in accordance to TCAWS manual V5.																CO-ORDINATE SYSTEM MGA ZONE 56		HEIGHT DATUM AHD														





							NOTES	PLOT DATE / TIME			PLOT BY M SIM	CLIENT	Orchard Rd Stop Slow (to assist long vehicles) existing Hopetoun Ave and Berkeley Ct			A3		
LEGEND				REVISION DESC.	REV	DATE	APPROVAL	SCALES ON A3 SIZE DRAWING		DRAWINGS / DESIGN PREPARED BY						TITLE	NAME	DATE
Notes:								N.T.S		Mong Sim. PWZTMP Card # 0037361001.						DRAWN	M.SIM	5/2/20
1. Signs spacing D = 40 -60m. Adjust to suit local streets.																DRG CHECK	M.SIM	5/2/20
2. TCP prepared according TCAWS manual V5.																DESIGN		
												DESIGN CHECK			PREPARED FOR  Systems Connect	SC TCP 1029		
								CO-ORDINATE SYSTEM		HEIGHT DATUM		TRAFFIC MNGR				ISSUE STATUS	SHEET No.	ISSUE
								MGA ZONE 56		AHD							1 of 1	2





							NOTES	PLOT DATE / TIME			PLOT BY M SIM	CLIENT	Brand St Gate Stop Slow TCP			A3	
LEGEND		REVISION DESC.	REV	DATE	APPROVAL	SCALES ON A3 SIZE DRAWING	DRAWINGS / DESIGN PREPARED BY		TITLE	NAME	DATE						
Notes:							Mong Sim. PWZTMP Card # 0037361001.		DRAWN	M.SIM	5/2/20						
1. Intermittent stops only to assist work vehicles entering and exiting Brand St Gate.									DRG CHECK	M.SIM	5/2/20						
									DESIGN								
									DESIGN CHECK								
2. Signs spacings 40 - 60m. Adjust to suit site constrains.									TRAFFIC MNGR			PREPARED FOR	SC TCP 1027				
3. TCP prepared in accordance to TCAWS manual V5.												Systems Connect	ISSUE STATUS FOR INFORMATION		SHEET No. 1 of 1		ISSUE 2
						CO-ORDINATE SYSTEM MGA ZONE 56	HEIGHT DATUM AHD										



## Appendix C. Contruction Vehicles Route





						NOTES		PLOT DATE / TIME			PLOT BY M SIM		CLIENT		Construction Vehicles Route - Northern Connection			A3									
LEGEND					REVISION DESC.	REV	DATE	APPROVAL	SCALES ON A3 SIZE DRAWING										DRAWINGS / DESIGN PREPARED BY					TITLE	NAME	DATE	
<p>Notes:</p> <p>1. Constuction vehicles &gt;3.5 ton to use Herbert St - Pacific Highway - Mowbray Rd - Brand St. as shown.</p> <p> Construction Vehicles Route &gt;3.5 ton</p>																			DRAWN	M.SIM	15/9/20						
																			DRG CHECK	M.SIM	15/9/20						
															DESIGN												
															DESIGN CHECK			PREPARED FOR		Systems Connect			ISSUE STATUS		SHEET No. 1 of 1		ISSUE 1
TRAFFIC MNGR																											
					</																						



## Appendix D. Compliance Matrix



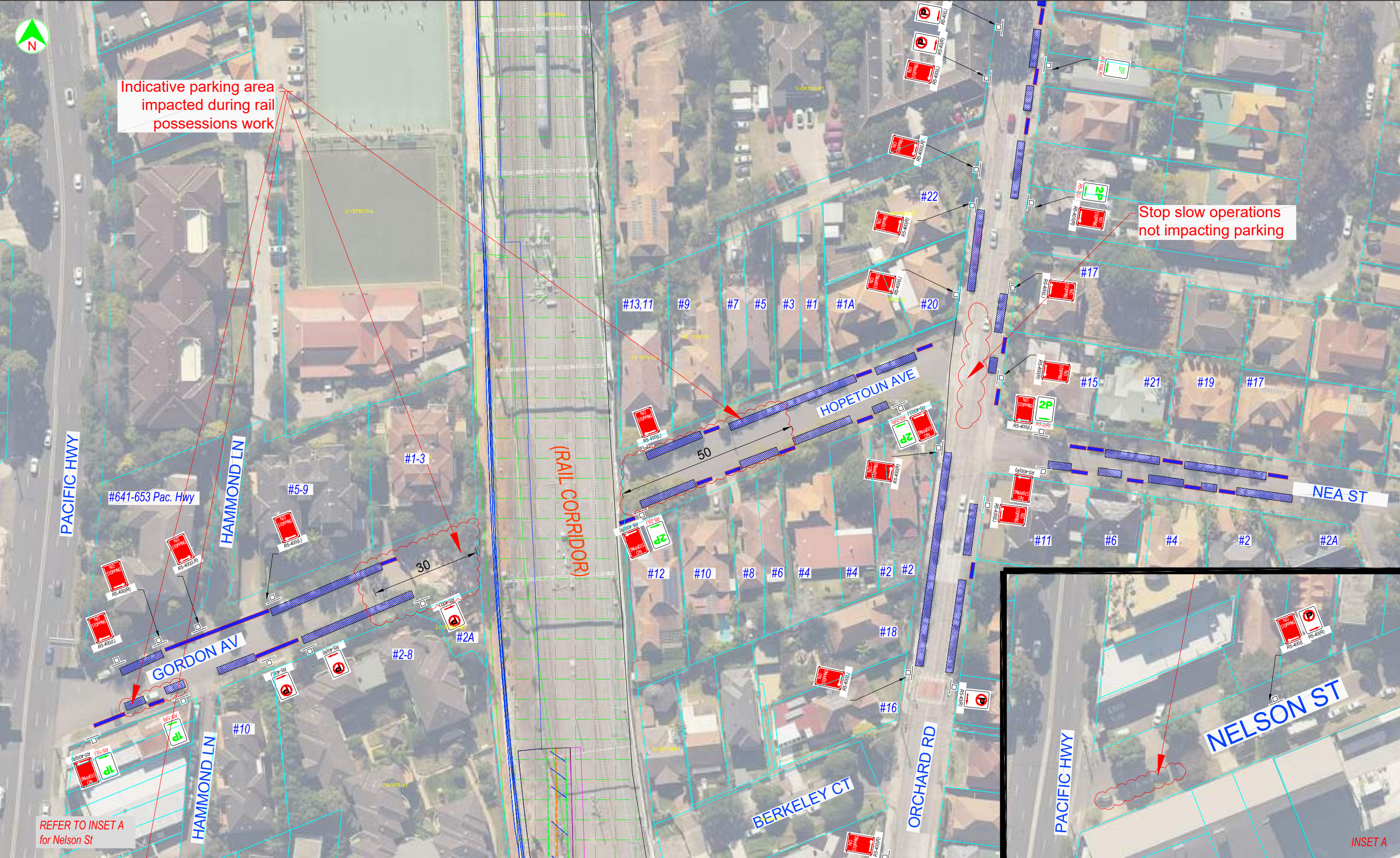
## Relevant conditions of approval.

Line	Conditions	SC Notes	Compliance
E79	The Proponent must consult with the Relevant Road Authority regarding the use of any weight restricted road by heavy vehicles.	Routes proposed were proposed on the CTMP. Proposed routes were presented on TCG on 5 Nov and TTLG on 27 Nov.	Y
E80	The Proponent must minimise truck movements during peak periods within commercial centres. Peak periods are 7am to 10am and 4pm to 7pm Monday to Friday.	Spread of trucks movement for this specific area is not within commercial centres.	Y
E81	The Proponent must prepare and implement a Construction Traffic Management Framework (CTMF). The CTMF must be prepared in consultation with TTLG(s) and submitted to the Secretary for approval no later than one (1) month before the commencement of construction (or within any other timeframe agreed with the Secretary). The CTMF will set out the approach to managing issues across the CSSI and include but not be limited to:	CTMF prepared by Sydney Metro. CTMP was prepared with the guidelines provided.	Y
E81(a)	construction site access, including the efficient and safe egress and ingress of vehicles, consistent relevant Austroads, Australian Standards and RMS requirements;	Refer to CTMP. Work area description and traffic requirement was mentioned on section 3.	Y
E81(b)	the erection and maintenance of hoardings, scaffolds and associated structures on roads;	No such structures are installed on road. Not applicable.	n/a
E81(c)	short and long term lane and road closures including those associated with plant, crane and other operations between the road reservation and construction site;	Refer to CTMP. Crane set up, gates and temporary traffic control locations were nominated.	Y
E81(d)	cumulative construction vehicle management from surrounding developments;	TSE work is completed before handing over to LW. No other known development at this stage.	Y
E81(e)	bus stop and associated facilities relocation and service rerouting;	No bus stop along Pacific Highway needs to be relocated or impacted.	n/a
E81(f)	short and long term works zones on roads adjacent to the construction site;	Same as E81(a).	Y
E81(g)	mail zone and associated facilities relocation;	Not applicable.	n/a
E81(h)	short and long term works within the road reservation;	No road upgrade within LW scope for Northern Corridor upgrade.	Y
E81(i)	regulatory, advisory and other signage changes and modifications;	Only during temporary traffic control set up with reduced speed limit.	Y
E81(j)	parking management, including on and off street and remote parking and access;	No impact except during concrete pump set up. Effective and precise comms strategy available for Hopetoun Ave residents during the planned work.	Y
E81(k)	heavy vehicle management, the restriction (unless otherwise approved) of heavy vehicles to certain routes and the minimisation of heavy vehicle traffic in peak traffic periods;	(same as E80)	Y
E81(l)	special event management;	n/a along Pacific Hwy or Elizabeth St vicinity.	n/a
E81(m)	the retention and reinstatement of emergency and property access;	Access is maintained. No modification to any access or driveways.	Y
E81(n)	the retention of user and passenger safety, including pedestrians, cyclists, public transport users, including at stops and related facilities;	No road is closed.	Y
E81(o)	incident response planning around construction work sites; and	Previously identified on Section 1.2 bullet point 5.	Y
E81(p)	monitoring of transport and access related impacts attributable to the CSSI.	Previously identified on Section 1.2 bullet point 6.	Y
E82	Construction Traffic Management Plans (CTMPs), consistent with the CEMF and CTMF required in Condition E81, must be prepared for each construction site in consultation with the TTLG(s), and submitted to the RMS for approval following Sydney Coordination Office endorsement before construction commences at the relevant construction site. A copy of any Construction Traffic Management Plans approved by the RMS must be submitted to the Secretary for information.	Refer to E81. CTMP prepared with CTMP guidelines.	Y
E83	Where construction results in a worsening of the matters identified in Condition E81(a)-(o), the Proponent must review the measures identified in the CTMPs in consultation with the TTLG(s), as relevant. Any changes to the CTMPs must be submitted to the RMS for approval following Sydney Coordination Office endorsement and implemented.	Previously identified on Section 1.2 bullet point 9.	Y
E85	Heavy vehicle haulage must not use local roads unless no feasible alternatives are available.	This is not considered a haul route but construction vehicles do need to use local road to access to the construction area as it the only accessible routes. There is possible option to use rail to transport material.	Y
E86	During construction, measures must be implemented to maintain pedestrian and vehicular access to, and parking in the vicinity of, businesses and affected properties. Alternative pedestrian and vehicular access, and parking arrangements must be developed in consultation with affected businesses. Such arrangements must be outlined in the Business Management Plan required in Condition E64 and implemented as required. Adequate signage and directions to businesses must be provided before, and for the duration of, any disruption.	The CTMP does not propose any road closures etc.	Y
E88	Details of haulage routes and heavy vehicle sizes to transport material to and from any construction site must be specified in the Construction Traffic Management Plan(s) and be approved by the RMS following endorsement by Sydney Coordination Office and consultation with the TTLG(s).	Note northern connections is not a typical mass haul program. Transportation details available on Section 4.7 in the CTMP with relevant information regarding proposed vehicle routes and estimated vehicles movements.	Y
E89	The Proponent must implement traffic and transport management measures with the aid of a truck marshalling and logistics facility located within close proximity to the Sydney and North Sydney CBDs. The facility must be operational in advance of tunnel spoil generation. Details of the facility must be documented in the Ancillary Facilities Management Plan required by Condition A16.	(not applicable for this site)	Y
E90	A Road Dilapidation Report must be prepared for local roads proposed to be used by heavy vehicles for the purposes of the CSSI before the commencement of use by such vehicles. Copies of the Road Dilapidation Report must be provided to the Relevant Council within three (3) weeks of completing the surveys and no later than one (1) month before the use of local roads by heavy vehicles.	Willough Council's has mentioned to complete road dilapidation survey for Nelson St, Gordon St, Hopetoun Ave and Berkeley Ct during TCG on 5 Nov 2019.	Y
E91	If damage to roads occurs as a result of construction of CSSI, the Proponent must either (at the landowner's discretion):	Before and after assessment of the conditions from E90 to be assessed.	Y
E91(a)	compensate the landowner for the damage so caused. The amount of compensation may be agreed with the landowner; or	No action unless E91 is then became applicable.	Y
E91(b)	rectify the damage so as to restore the road to at least the condition it was before construction commenced as identified in the Road Dilapidation Report(s).	No action unless E91 is then became applicable.	Y
T1	Ongoing consultation would be carried out with (as relevant to the location) the CBD Coordination Office, Roads and Maritime Services, Sydney Trains, NSW Trains, the Port Authority of NSW, Barangaroo Delivery Authority, local councils, emergency services and bus operators in order to minimise traffic and transport impacts during construction.	In addition to CTMP Section 1.2, an active on going communications with the group in place.	Y
T2	Road Safety Audits would be carried out at each construction site. Audits would address vehicular access and egress, and pedestrian, cyclist and public transport safety.	Refer to E76.	Y
T3	Directional signage and line marking would be used to direct and guide drivers and pedestrians past construction sites and on the surrounding network. This would be supplemented by Variable Message Signs to advise drivers of potential delays, traffic diversions, speed restrictions, or alternate routes.	Not applicable as no pavement realignment is to be completed.	Y
T4	In the event of a traffic related incident, co-ordination would be carried out with the CBD Coordination Office and / or the Transport Management Centre's Operations Manager.	Report traffic related incident to TMC command centre not to "CBD /Coordination Office".	Y
T5	The community would be notified in advance of proposed road and pedestrian network changes through media channels and other appropriate forms of community liaison.	On going community notification is in early progress.	Y
T6	Vehicle access to and from construction sites would be managed to ensure pedestrian, cyclist and motorist safety. Depending on the location, this may require manual supervision, physical barriers, temporary traffic signals and modifications to existing signals or, on occasions, police presence.	Site access to have traffic management as required.	Y



## Appendix E. Potential parking impact diagram





LEGEND				REVISION DESC. REV DATE APPROVAL				SCALES ON A3 SIZE DRAWING		NOTES		PLOT DATE / TIME		PLOT BY M SIM		CLIENT		A3	
Parallel parking								1:125		DRAWINGS / DESIGN PREPARED BY		TITLE		NAME		DATE		SHEET	
Driveways												DRAWN		M.SIM		5/2/20		Parking Area Mapping	
												DRG CHECK		M.SIM		5/2/20		During Rail and Non-rail Possessions at vicinity of Gordon Av, Hopetoun Av, Drake St and Brand St	
												DESIGN							
												DESIGN CHECK						SC PLN 1000	
												TRAFFIC MNGR						ISSUE STATUS	
																		FOR INFORMATION	
																		SHEET No.	
																		1 of 3	
																		ISSUE	
																		0	





										NOTES	PLOT DATE / TIME			PLOT BY M SIM	CLIENT		Parking Area Mapping During Rail and Non-rail Possessions at vicinity of Gordon Av, Hopetoun Av, Drake St and Brand St			A3					
LEGEND					REVISION DESC.	REV	DATE	APPROVAL	SCALES ON A3 SIZE DRAWING					DRAWINGS / DESIGN PREPARED BY							TITLE	NAME	DATE		
<div><div></div>Parallel parking</div> <div><div></div>Driveways</div>										1:125													DRAWN	M.SIM	5/2/20
																							DRG CHECK	M.SIM	5/2/20
															DESIGN										
															DESIGN CHECK										
															TRAFFIC MNGR										





							NOTES	PLOT DATE / TIME			PLOT BY M SIM	CLIENT	Parking Area Mapping During Rail and Non-rail Possessions at vicinity of Gordon Av, Hopetoun Av, Drake St and Brand St			A3			
LEGEND					REVISION DESC.	REV	DATE	APPROVAL	SCALES ON A3 SIZE DRAWING		DRAWINGS / DESIGN PREPARED BY					TITLE	NAME	DATE	
<div><div></div>Parallel parking</div> <div><div></div>Driveways</div>					1:125						DRAWN					M.SIM	5/2/20		
											DRG CHECK					M.SIM	5/2/20		
											DESIGN			PREPARED FOR  Systems Connect	SC PLN 1000		ISSUE STATUS FOR INFORMATION	SHEET No. 2 of 3	ISSUE 0
											DESIGN CHECK								
										TRAFFIC MNGR									



**Appendix F. Correspondence (attach as required)**





## General Correspondence

**Reference No.:** LWW-GEN-SCLWW-002866  
**Project Title:** Sydney Metro Linewide Works

---

**Date:** 27 February 2020, 07:33:43 AM +11:00      **Response required by:**  
**To:** Melanie Bowden, Systems Connect  
**CC:** Patrick Giblin, Systems Connect  
 Mong Sim, Systems Connect  
**From:** Mathew Billings, Systems Connect  
**Subject:** **FW: SMCSW3LWC - Construction Traffic Management Plan - Northern Corridor Upgrade - approval**

---

Mel.  
 FYI (as per previous outlook)  
 Mathew Billings  
 Environment Manager - Systems Connect  
 Sydney Metro City & Southwest Line-wide Works  
 M 0428781599 E Mathew.Billings@sclww.com.au

---

**Discipline:** Traffic Management      **Work Package:**  
**Originator's**  
**Reference No.:**      **Location:**

**Function:** DC-Document Control  
**File Location:** DC52-Support

----- Original Message -----



General Correspondence

**Reference No.:** LWW-GEN-SCLWW-002864  
**Project Title:** Sydney Metro Linewide Works



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Date: 26 February 2020, 07:04:28 PM +11:00 Response required by:

To: Mong Sim, Systems Connect  
Paul Ryan, Systems Connect  
Mathew Johnston, Systems Connect  
Helena Orel, Systems Connect  
Mathew Billings, Systems Connect

CC: Jill Downing, Systems Connect


From: Kirimaru Friscan, Systems Connect

Subject: SMCSW3LWC - Construction Traffic Management Plan - Northern Corridor Upgrade - approval

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This mail item is received via EMAIL from Quac Minh LA on 2020-02-26 03:46:10 PM +11:00 and processed by Kirimaru Friscan of Systems Connect on 2020-02-26 7:01:27 PM +11:00.

**From:** Quac Minh LA<system@teambinder.com>  
**Sent:** Wednesday, 26 February 2020 03:46:11 PM  
**To:**  
**Cc:** Transmittal SM OpenAccess<nwrl.informationmanagement@transport.nsw.gov.au>, LWC Systems Connect Transfer<LWW@tbupload.com>  
**Subject:** SMCSW3LWC - Construction Traffic Management Plan - Northern Corridor Upgrade - approval

 Could not load the

## LWC General Correspondence

**Reference No:** SMCSWLWC-RMS-LWC-GEN-000015  
**Project Title:** Sydney Metro City & Southwest - LWC, TSOM  
**Contract No:** LWC - Line Wide Contracts  
**Sub Contract:** -  
**Orig Ref No:**  
**DLM:**

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Date: 26 February 2020, 03:46 PM Response required by:

From: Quac Minh LA (Roads and Maritime Services)

To: Susan Dai (Systems Connect)

Cc: Chris Berg (Sydney Metro) ; Ken Hind (Sydney Metro) ; JOSE ARGUETADOMINGUEZ (Sydney Metro) ; Phil Brogan (Sydney Metro) ; Nathan Hoffmeister (Sydney Metro) ;



Deepak Shahani (Sydney Metro) ; Errol Pather (Sydney Metro) ; Jake Coles (Sydney Coordination Office) ; Carl Mella (Roads and Maritime Services) ; Hayden Wright (Sydney Metro) ; Transmittal SM OpenAccess (Sydney Metro) ; Mathew Billings (Systems Connect) ; Mark Marriott (Sydney Metro) ; Jill Downing (Systems Connect) ; Kirimaru Friscan (Systems Connect) ; LWC Systems Connect Transfer (Systems Connect) ; Paul Ryan (Systems Connect) ; Helena Orel (Systems Connect) ; Mathew Johnston (Systems Connect) ; Mong Sim (Systems Connect) ; Scott Brown (Systems Connect)

**Subject: SMCSW3LWC - Construction Traffic Management Plan - Northern Corridor Upgrade - approval**

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Hi Susan,

With reference to your transmittal SMCSWLWC-SYC-TX-001696 dated 07/02/20.

In accordance with Schedule C1 Appendix A.9 Section 2.1 ( c ) and 2.2 ( c ) of the Principal's General Specifications G10 - Traffic and Transport Management and Minister's Condition of Approval E82 for the Sydney Metro City & South West, Transport for NSW - Greater Sydney - Planning and Programs, and the Sydney Coordination Office approve the Sydney Metro City & South West Traffic Management Plan - Line Wide Works - Northern Corridor Upgrade (SMCSWLWC-SYC-NCW-TF-PLN-002507.C.RVW.C.01) for the Sydney Metro City & South East project subject to the following requirements:

- obtaining Road Occupancy Licenses (RoLs) from the Transport Management Centre as required;
- a Road Safety Audit being undertaken and addressing any safety issues identified within the Road Safety Audit review for this CTMP, in advance of any works commencing and;
- addressing any issues raised by Council, STA, Taxi Council, residents/businesses or Emergency Services in the CTMP approval process;
- addressing the requirements arising as an outcome of the Local Traffic Committee meeting;
- promptly addressing any SCO and/or TMC and/or TfNSW issue that eventuates during the works

regards,  
Minh

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#### Design Series:

**Discipline:**

**Design Lots:**

**Location:**

Discipline: Traffic Management  
Originator's  
Reference No.:

Work Package:  
Location:

Function:DC-Document Control  
File Location:DC52-Support







## Sim, Mong

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**From:** Farrelly, Gordon <Gordon.Farrelly@Willoughby.nsw.gov.au>  
**Sent:** Tuesday, 11 February 2020 3:19 PM  
**To:** Sim, Mong  
**Cc:** Philip Brogan  
**Subject:** Construction Traffic Management Plan - Northern Connections - Traffic Operations  
7 February 2020 Revision C

CAUTION: This email originated from outside of the Organisation.

Hi Mong

I wish to advise that Willoughby Council has no objections to the abovementioned CTMP subject to consideration of the following:

- The use of non-rail corridor access roads i.e. Nelson Street, Berkeley Court etc is limited to maintain local safety and amenity. It is noted that this appears to be the approach taken in the CTMP.
- Street parking is considered a valuable asset by the local community, it is requested that every effort is made to minimise the loss of street parking as a result of the implementation of the CTMP. If street parking loss is necessary it is requested that Line-wide works with the local residents to identify alternate parking of the same or similar capacity, and in reasonably close proximity, as the street parking capacity removed.
- Access to residential properties is essential, it is requested that every effort is made to ensure vehicle access is maintained at all times to properties impacted by the implementation of the CTMP. If property access is not available then it is requested that Line-wide works with the local residents to identify satisfactory alternate access arrangements for the period.

Thanks

Gordon

**Gordon Farrelly** - *Traffic & Transport Team Leader*

**WILLOUGHBY CITY COUNCIL**

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**CHATSWOOD  
YEAR OF THE RAT FESTIVAL**





Northern Corridor Upgrade  
TMP Comments Up to Rev B

No.	DATE	COMPANY	RAISED BY	REVIEW DOC. NO.*	DOCUMENT REF*	DEED REF*	COMMENTS / RESPONSE	COMMENT CATEGORY*	CLOSED OUT	RESPONSE
1	6/12/2019	SMD	CBERG	SMCSWL WC-SYC-NCW-TF-PLN-002507			The subtitle of the CTMP is confusing: the term Northern Corridor Upgrade works was previously used by other contractors undertaking upgrades along the entire Northern Corridor. Elsewhere, LW referred to Northern Connection works, which is more appropriate. Also 'Site Operations' suggest that this is an operational management plan, rather a CTMP. I suggest to review and revise the terminology. Part A - it is not clear that this CTMP is only covering the Northern Connection Works for the Northern Dive between Gordon Avenue and Brand Street in Chatswood. I suggest to make this clearer and define the purpose of this plan upfront.	Document title is changed to Northern Connections - Traffic Operations. The CTMP template are divided into - Part A referring to the overall SC scope. Part B is referring to content (this case the northern connections - traffic operations). Part C are all the appendices.		
2	6/12/2019	SMD	CBERG	SMCSWL WC-SYC-NCW-TF-PLN-002508			Section 1.5: Line Wide Works is initially abbreviated as 'LW', then below 'LWW' is used. I suggest to decide on one abbreviation and use it consistently through the CEMP and all sub-plans. Add a Glossary at the beginning of the CTMP defining all abbreviation used in the document. Sydney Metro City & Southwest was abbreviated as SMCSW in the Waste MP, not(SM C&SW). I suggest to make this consistent through all plans.	Noted. Section 1.5 revised to LW (Line-wide) works and SMCSW. Abbreviations in the CTMP were spelled out at the beginning before it was used subsequently on the document. Abbreviation used on this document is not extensive. Addition of a glossary not deemed necessary.		
3	6/12/2019	SMD	CBERG	SMCSWL WC-SYC-NCW-TF-PLN-002509			there is no Compliance Matrix as provided in other sub-plans. Can this be added?	Compliance matrix added in Appendix D.		
4	6/12/2019	SMD	CBERG	SMCSWL WC-SYC-NCW-TF-PLN-002510			Section 3.1 - this section needs revision. It does not make sense to have it as a sub-section of the Work Area Description. This is more methodology.	The subsection separates the regular closure to the rail closure. This section remains.		
5	6/12/2019	SMD	CBERG	SMCSWL WC-SYC-NCW-TF-PLN-002511			Section 4.1. This section requires revision. Provide the reference in the correct style format.	Section 4.1 is a statement of attainment for all TCPs are in accordance to TCAWs. Reference to clauses into a Table format is not required. These are all noted on the TCPs. Section 4.1 is rephrased.		
6	6/12/2019	SMD	CBERG	SMCSWL WC-SYC-NCW-TF-PLN-002512			Section 4.6 - has consultation been undertaken? where are the nearest Emergency Services? provide more details	Emergency services does not to be consulted as no roads (access) are closed. No access is closed. Detailed procedures with Fire Services etc are only conducted if a road is going to be totally inaccessible so they could preplan their response route in the event of emergencies.		
7	6/12/2019	SMD	CBERG	SMCSWL WC-SYC-NCW-TF-PLN-002513			Section 4.7 - provide more details ie number and type of vehicles, hours etc	Section 4.7 is updated with estimated movements per gate during normal and rail possessions work.		
8	6/12/2019	SMD	CBERG	SMCSWL WC-SYC-NCW-TF-PLN-002514			Figure 5 - why does it state Figure 3.7 above? remove	Figure 5 is referring to a graph exerpted from an EIS document which was named as Figure 3.7. Figure 5 is correct.		
9	6/12/2019	SMD	CBERG	SMCSWL WC-SYC-NCW-TF-PLN-002515			Section 6 - have key stakeholders been identified? can they be listed here?	CTMP was presented in TTLG and TCG meetings which key stakeholder have attended. The listing is listed on Section 5.		
10	6/12/2019	SMD	CBERG	SMCSWL WC-SYC-NCW-TF-PLN-002516			Section 7 - what about OOHW? there should be at least a reference to the OOHW procedure. What about Planned rail closure in June 2020, August 2020, November 2020, January 2021, May 2021, August 2021, August 2021, November 2021, May 2022?	Out of hours information to be applied and assessed in details by the environmental procedures and kept separate from the CTMP. Table on Section 7 is as a guide or high level information only.		

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11	6/12/2019	SMD	CBERG	SMCSWLWC-SYC-NCW-TF-PLN-002517			Section 8 - this section needs revision.	Table is reformatted in Rev B with adjusted margin settings.			Rev A
12	6/12/2019	SMD	CBERG	SMCSWLWC-SYC-NCW-TF-PLN-002518			Part C - Appendix C - is this the same map as Figure 4?	Appendix C is a tab created for all the attachments in the document.			Rev A
13	4/12/2019	RMS	Minh La		SMCSWLWC-RMS-LWC-GEN-000008		TCPs must be prepared by an appropriately certified person	Ticketed person information added to the TCP template.			Rev A
14	4/12/2019	RMS	Minh La		SMCSWLWC-RMS-LWC-GEN-000009		TCPs must be prepared in accordance with RMS Traffic Control at Work Sites manual v 5.0	A note stating TCP is in accordance to the TCAWS manual is added and also stated on Section 1.4 as a general note.			Rev A
15	4/12/2019	RMS	Minh La		SMCSWLWC-RMS-LWC-GEN-000010		TCPs must show spacing between signs, which must be appropriate for the speed environment	Sign spacings shown in updated revision.			Rev A
16	4/12/2019	RMS	Minh La		SMCSWLWC-RMS-LWC-GEN-000011		TCPs must show position of traffic controllers for when vehicle reverse movements are being undertaken	Position of TCs are indicated on the TCPs.			Rev A
17	4/12/2019	RMS	Minh La		SMCSWLWC-RMS-LWC-GEN-000012		Traffic Controller Ahead signage should be in place to advise of traffic controllers managing truck reverse movements	Local streets added with advanced warning signs.			Rev A
18	4/12/2019	RMS	Minh La		SMCSWLWC-RMS-LWC-GEN-000013		Demonstrate that each traffic controller is only responsible for one lane of traffic at any given time	Tapers were used to ensure traffic merges into one lane only on the TCPs demonstrating TC to stop and/or control only one lane of traffic.			Rev A
19	17/12/2019	Willoughby C	Gordon F			email 17/12/19	Overview. It appears that there is extensive use of Council's local roads for construction layover and operation. This has not occurred in the past and is under strict control by Council with the current works being undertaken by the Joint Venture. There needs to be more consultation and demonstration that the use use of local roads not traditionally used for rail activities and secondly for the use of standing and operation of plant.	The highlighted routes were identified routes for construction traffic however it does not quite represent frequencies of the usage. The highest frequencies will be at Drake St and Brandt St for daily construction traffic. Nelson St, Gordon St, Berkeley Ct and Hopetoun are idenfied as special areas for plant set up during planned rail closures. Logistic planning is still on going at this stage for sourcing the largest pumps where it could be possibly set up at Hopetoun Ave only. Until the resourcing is confirmed, comms team will advise accordingly for the impacted residents. The CTMP is written to be robust and to identify all possible scenarios. Raleigh St is taken off the list on Rev B.			Rev A
20	17/12/2019					email 17/12/19	Section 3. The section refers to streets that provide access into the rail corridor from current existing operational corridor gates including Nelson Street and Berkeley Court. A number of the streets mentioned ever provided access into the rail corridor. Can it be explained why these street are planned to be used? A number of streets mentioned have barriers at the rail corridor - is it the intention to remove the barriers? Actual existing access streets should only be used to enter the rail corridor. Council is not in favour of the use of local roads that have not traditionally been used for rail corridor maintenance/ works due the detrimental safety, parking and amenity impacts.	Similar to response # 19 above, concrete pump will have to boom over the concrete noise wall from Nelson St and Gordon Ave if concrete pump is not possible to be set up at Hopetoun Ave. Under normal construction, Drake St, Brand St are main access point to the site.			Rev A
21	17/12/2019	Willoughby C	Gordon F			email 17/12/19	Section 3.1 and 3.2. Why are local roads being used for Sydney Metro plant set up and operation to support works in the rail corridor? All vehicles and plant should be located within the rail corridor.Council is not in favour of the use of local roads that have not traditionally been used for rail corridor maintenance/ works due the detrimental safety, parking and amenity impacts.	The proposed plant setup locations at end of Gordon,Nelson, Berkeley OR Hopetoun are to reach the bore pile and capping beam locations from the outside of the rail corridor. These 4 street are used only during planned rail possessions (total of 8 times in 3 years). Logistic planning is still on going at this stage for sourcing the largest pumps where it could be possibly set up at Hopetoun Ave only. Community consultation will be timed accordingly to relay the right messages at the right time and required locations.			Rev A
22	17/12/2019	Willoughby C	Gordon F			email 17/12/19	Section 4.3. Frank Channon Walk is a shared path and an important north south bicycle route into and out of the Chatswood CBD, also provides a link to Artarmon local centre. Orchard Road currently is under investigation for a shared path to support important north south bicycle route into and out of the Chatswood CBD, also provides a link to Artarmon local centre. There is a high likelihood it will be formalised as a shared path during the CTMP lifecycle (subject to community consultation, Local Traffic Committee consideration and Council approval).	Proposal of the potential cycleway developemnt at Orchard Road is noted. Future possible interaction with the proposed cycleway work is to be re-assessed against the CTMP. No further assessment beyond this CTMP at this stage regarding the cycleway development plan by others.			Rev A



23	19/12/2019	SCO	Jake C		email 19/12/19		State explicitly the commencement time and expected removal time of the Pacific Highway Lane closure, state the day (i.e Friday, Saturday etc) that it is intended to implement this arrangement.	Pacific Highway southbound Lane 1 between Nelson St and Gordon Street is proposed to be closed from 21:00 Fri night. Expected to be removed by 05:00 Sat for the mobilisation of mobile crane componenents. Demobilisation will be from Sunday night (21:00) till Monday morning 05:00. The need for Pacific Highway southbound lane closure is dependent on the crane/concrete pump logistics. The team is sourcing the largest possible plant to be setup at Hopetoun Ave instead. If the sourcing is possible, there is no need for Pacific Highway southbound lane closure.			Rev A
24	19/12/2019	SCO	Jake C		email 19/12/19		Explain the process of the closure of the 2nd lane of the pacific highway during this operation. Document does not indicate clearly how this will be achieved.	In addition to closed Lane 1, Lane 2 to be intermittently blocked by at least 2 tail vehicles. (TCAWS Section 9.1.2 and Appendix A1 for intermittent work).			Rev A
25	19/12/2019	SCO	Jake C		email 19/12/19		State how many trucks would will be required and the arrival frequency.	See revised Section 4.7.			Rev A
26	31/01/2020	SCO	S Brown	SMCSWL WC-SYC- NCW-TF- PLN- 002507 Rev B.	LWW-TRN-SCLWW-002256		As Orchard Rd provides a key corridor to and from Chatswood CBD, it is unlikely that stop/slow operations will be permitted during AM and PM peak periods. ROL permits for weekdays would generally be between 10am and 3pm	Noted. Traffic control at Orchard Road is only planned for usage during rail possessions that are normally from Friday night 21:00 to Mon morning 05:00 over the 50+ hours operations. There are currently only 8 planned rail closures through the 2 year + period between March 2020 and May 2022.			Rev B
27	31/01/2020	SCO	S Brown	SMCSWL WC-SYC- NCW-TF- PLN- 002507 Rev B.	LWW-TRN-SCLWW-002256		As per above comment, any stop/slow lane closures are unlikley to be approved during peak periods.	Agreed.			Rev B
28	31/01/2020	SCO	S Brown	SMCSWL WC-SYC- NCW-TF- PLN- 002507 Rev B.	LWW-TRN-SCLWW-002256		Section 3.1. Planning & Environment - Conditions of Approval (E80).  This section should be expanded with detail about Incident Management and Response. This should include (but not limited to) how an incident is to be managed by Linewide; notification with TMC / SCO/Sydney Trains should an incident impact the road or rail network	Risk of incident impacting the rail and the road network is extremely low. The chance of late handover to Sydney Trains by Mon 5am is managed by checks against the program by the hour. Any work delays will be assessed by the supervisor against time. Work scope reduction will then apply as required to allow the timely completion. Close coordination with Sydney Trains is done with progress reporting against key activities. In the unlikely event the work can't handed over on time, Sydney Trains via their procedures will activate their contingency plan.			Rev B
29	31/01/2020	SCO	S Brown	SMCSWL WC-SYC- NCW-TF- PLN- 002507 Rev B.	LWW-TRN-SCLWW-002256		Appendix D (T2).  Explain why this Condition does not need to apply	E76 refers to permanent work. Ausroads' Guide to Road Safety Part 6: Road Safety Audit has published "... <i>Great effort has been taken by road authorities to provide adequate safety by the development of worksite safety manuals and roadworks code of practice. It may considered that these practices provide sufficient safety without the need for audits of temporary traffic arrangement.</i> " RSA on a temporary traffic management may not be providing any beneficial value as the work are very short term and changes.			Rev B
30	31/01/2020	SCO	S Brown	SMCSWL WC-SYC- NCW-TF- PLN- 002507 Rev B.	LWW-TRN-SCLWW-002256		Appendix B.  Further detail will be required on these TCPs when ROLs are applied for. The TSE contractor may be able to assist with previous TCPs that have been utilised.	Noted.			Rev B
31	31/01/2020	SCO	S Brown	SMCSWL WC-SYC- NCW-TF- PLN- 002507 Rev B.	LWW-TRN-SCLWW-002256		Section 4.3.  It is understood a shared path exists along Frank Channon Walk between Nelson St and Mowbray Rd	Please also note the Frank Channon is on the northern side of the rail corridor between Nelson St and Mowbray Rd.			Rev B
32	3/02/2020	SM	K Hind	SMCSWL WC-SYC- NCW-TF- PLN- 002507 Rev B	SMCSWLWC-SMD-TX-001707		Section 2.1 - Site description - the extremeities of the work is better described as between Ellis Street and Drake Street, the northern and southern extents of the work area.	Section 2.1 updated with the extremities limit has Ellis St and Drake St changed from Gordon Av and Brand St respectively.			Rev B



33	3/02/2020	SM	K Hind	SMCSWL WC-SYC- NCW-TF- PLN- 002507 Rev B	SMCSWLWC-SMD-TX-001707		A diagram should be provided on the extent of parking impacts during rail possessions or at any time for the works. Stakeholders should be provided with as much information on impacts for residents as possible in order to make an informed decision.	Only during rail possession parking within local street is impacted at Hopeturn Ave and maybe at Gordon Ave. A drawing showing the extend of the parking impact at the vicinity of Gordon Ave, Hopetoun Ave, Orchard Rd, Brand St and Drake St are attached on Appendix E on Rev C.			Rev B
34	7/02/2020	RMS	Minh L	SMCSWL WC-SYC- NCW-TF- PLN- 002507 Rev B	email 7/2/20		It is noted that the planned rail closure dates are indicated, but please confirm which dates are the proposed Pacific Hwy lane closures for mobilisation/demobilisation	SC to provide min. 2-3 weeks notice to RMS/SCO if lane closure is required for Pacific Highway as an ongoing coordination.			Rev B
35	7/02/2020	RMS	Minh L	SMCSWL WC-SYC- NCW-TF- PLN- 002507 Rev B	email 7/2/20		Number of semi-trailer reversing movements required on Pacific Hwy during mobilisation/demobilisation should be included	Number of movement stated on Section 3.1 in Rev C. (max of 2).			Rev B
36	7/02/2020	RMS	Minh L	SMCSWL WC-SYC- NCW-TF- PLN- 002507 Rev B	email 7/2/20		Based on swept paths provided, parking should be removed on Gordon Avenue and Nelson Street to cater for the semi-trailer movements.	Appendix E is updated in Rev C.			Rev B



**Appendix F. Correspondence (attach as required)**



## **Appendix G: Brand Street Drainage Crossing and associated civil works**



## Table of Contents

<b>1.</b>	<b>Brand Street Drainage works implementation.....</b>	<b>3</b>
1.1.	Brand Street drainage crossing and its associated civil works .....	3
1.2.	Stage 1 Details	4
1.3.	Stage 2 and 3 Details .....	5
1.4.	Stage 4 Details	5
1.5.	Stage 5 Details	5
1.6.	Stage 6 Details	5
<b>2.</b>	<b>Traffic and Transport Management .....</b>	<b>5</b>
2.1	Pedestrian	5
2.2	Resident Access	5
2.3	Bus Operations	6
2.4	Emergency Services .....	6
2.5	Traffic Modelling	6
<b>3.</b>	<b>Systems Connect and Stakeholder Key Contacts.....</b>	<b>6</b>
<b>4.</b>	<b>Communications and Community Strategy .....</b>	<b>6</b>
<b>5.</b>	<b>Working Hours.....</b>	<b>7</b>
<b>6.</b>	<b>Manage Emergencies.....</b>	<b>8</b>
<b>7.</b>	<b>Appendices .....</b>	<b>9</b>
	Appendix A. Design Drawings, Existing Signs, VMS Plan.....	9
	Appendix B. TCP Stage 1 and 6 .....	10
	Appendix C. TCP Stage 2 and 3, Pedestrian Plan, Detour .....	11
	Appendix D. TCP Stage 4 and 5 .....	12
	Appendix E. Misc - Work Program, Turning Path .....	13
	Appendix F. Correspondence (attach as required).....	14



## 1. Brand Street Drainage works implementation

### 1.1. Brand Street drainage crossing and its associated civil works

Drainage installation scope for the Northern Dive corridor area requires a transverse section of Brand Street to be excavated for the placement of the 650mm diameter (twin 2 row) drainage pipe approximately 1.4m below road level. The proposed methodology for the drainage pipe installation is by temporarily converting Brand Street traffic flow as one-direction eastbound (eastbound direction is from forward travelling direction along Brand Street from Hampden Street to Elizabeth Street) during the duration of the work. Various traffic control plans will be applied to suit the scope of work.



Figure 1 – View of the work area across Brand St (looking towards Hampden Road).





pavement marking, road signages, survey set out and the like. Prior to Stage 1, advanced notification (2 week in advanced) in the use variable message signs (VMSs) or temporary signages to display any necessary messages prior to the One-Way implementation.

### **1.3. Stage 2 and 3 Details**

To facilitate the long term one way (day and night) temporary arrangement, series of temporary long term signs are to be installed along Brand Street, Hampden Road and Mowbray Road as depicted in TCP # 2. Extensive consultation with nearby residents for the proposed work will be completed prior. Traffic controllers will be floating at Brand Street at all times during the initial stages (first 1 – 2 week) to assist and allow residents, locals, deliveries and service personnel familiarise with the changed traffic conditions. Residents access are maintained at all times. Drainage concrete pipes and cast in situ pits installation requires a temporary lane rearrangement (one way) to be in place for approximately 30 working days. Completion of Stage 2 and 3 work will return the changed traffic conditions (one way) to its existing conditions (2 way). There will be gap before the implementation of Stage 4 due to remaining utility works by Sydney Water after completion of Stage 3.

### **1.4. Stage 4 Details**

Stage 4 for the installation of median island is relatively short (2 – 3 days of work) and requires a short term one way setup similar to Stage 2 and 3. The one way proposed will be undone at the end of every shifts. Whilst the median island work is considered minimal, it is still not feasible to complete the work via a standard stop slow. Brand Street on Hampden Road side has a very short holding area and will very likely to cause traffic to be saturated at the roundabout area causing long queue beyond the roundabout.

Traffic controllers will be manning Brand Street during working hours during the short term one way setup to assist residents and local traffic. There will be gap before the implementation of Stage 5 due to remaining refuge island by the Council.

### **1.5. Stage 5 Details**

Stage 5 has the similar setup as Stage 4 for the full width pavement milling and reinstatement except it is done during the night. Pavement milling and asphalt paving takes 1-2 shifts to complete. These works are planned during the night as there is less plant interaction with general traffic during pavement milling and paving. During paving, driveways within the pavement reconstruction area will have no access for the shift. A temporary arrangement with property owners will need to be detailed at a later stage.

### **1.6. Stage 6 Details**

Final stage of Brand Street drainage crossing requires a standard stop slow to complete pavement marking and minor road furniture installation. Pavement marking and the like is a relatively quick task and does not justify the need for one way or other complicated traffic arrangements.

## **2. Traffic and Transport Management**

### **2.1 Pedestrian**

In general if the footpath section is being worked on (only during Stage 2 and 3), pedestrians will be required to use the other footpath. As soon as the trench section under the footpath is completed, footpath could reopen. Traffic controllers during working hours are available to assist pedestrians as they appear. Pedestrians on all other stages (Stage 1, 4,5 and 6) are not expected to have any immediate impact as existing footpath is not a work area that needs to be cut into.

### **2.2 Resident Access**

There is no immediate impact to resident access except during Stage 5 pavement reconstruction. Community notification for all scheduled works will be made to local residents in advanced. During paving in Stage 5, residents access will not possible as paving is directly on the immediate driveways. During these Stage, residents parking are to either preplanned their movement (leave their vehicles for the night in the garage or park at alternative location if there will be leaving their residents. This a common arrangement for urban paving reconstruction and work is only 1 -2 shifts.



## 2.3 Bus Operations

School bus route # 761W (Elizabeth and Mowbrays Road to Artarmon Public School) will be impacted during the One Way implementation as access through Brand Street westbound is via the detour route. Bus operators and Artarmon Public School will need to be advised of the work. Where possible, the work that impact the bus run is to be timed with the school holiday.

## 2.4 Emergency Services

Emergency services during the work will be impacted. Notification to all emergency services will be provide in advanced of the long term and short them One Way implementation.

## 2.5 Traffic Modelling

A recent traffic modelling was completed for the same One Way eastbound configuration for the Sydney Water relocation work in November 2020 by others for the exact location in Brand Street. Another new set modelling report will too have a similar output and it is recommended not required for this instance. It has been observed that the One Way eastbound operations has no major impact to the road network.

## 3. Systems Connect and Stakeholder Key Contacts

Systems Connect and key stakeholders contacts below for the overall integration of the CTMP.

Name	Role	Contact Details
Carl Mella	Transport NSW (Sydney Roads) – Integration Leader	0429 505 970
Jake Coles	Sydney Coordination Office - Operations Manager – CBD	0466 454 819
Stephen Brown	Sydney Coordination Office - Precinct Project Manager	0457 809 028
Phil Brogan / Ken Hind	Sydney Metro – Traffic Advisors	0401 719 632 0416 797 029
Gordon Farrelly	Council – Traffic & Transport Team Leader	02 9777 7705
Matt Billings	Systems Connect – Environment Manager	0428 781 599
Melanie Bowden	Systems Connect – Project Manager	0411 598 968
Craig Godwin	Systems Connect – Safety Manager	0458 498 107
Svetlana Paunovic	Systems Connect – Community Manager	0438 540 245
Scott Francis	Systems Connect – Superintendent	0429 901 489
Patrick Giblin	Systems Connect – Sr. Project Engineer	0428 594 797
Mong Sim	Systems Connect – Traffic Engineer	0448 378 883

## 4. Communications and Community Strategy

Systems Connect will meet the reasonable needs and desires of the community for information on any changed traffic conditions, cyclist and pedestrian impacts and property access arrangement. Systems Connect will ensure that the public and other key stakeholders are informed of planned traffic arrangements, including any activities which may result in delays.

Communications, consultation and the dissemination of information associated with traffic and access will be undertaken as outlined in this section.

The aim of consultation and broad communication on traffic and access matters is to:

- Facilitate community feedback regarding traffic issues
- Recommend alternative and appropriate travel patterns during periods of change
- Manage traffic impacts to protect affected residential and business amenity
- Provide timely, accurate and comprehensive traffic information using all available media to inform road users and the community of the project's traffic impact mitigation measures.

Ongoing consultation with stakeholders will ensure that effective traffic management measures are developed and implemented to minimise disruption and inconvenience.

Systems Connect will coordinate engagement with Sydney Metro and the members of the TTLG to enable the local community and other stakeholders to receive timely and accurate information associated traffic and transport issues.

Tool	Purpose	Frequency
Traffic alert emails	Email alerts to Sydney Roads , Transport Management Centre, Council, transport operators and emergency services to advise of major traffic changes including road or lane closures and detours, incidents or undue congestion	5 business days prior to changes if applicable  As soon as practicable following incidents or undue congestion
Advertisements	To inform of significant traffic changes, detours and traffic disruptions as required to comply with approvals; in local newspapers, radio and/or project website	5 business days prior to changes
Letterbox notifications	Notification letters to inform local residents and businesses potentially affected by planned traffic changes	5 business days prior to changes
Community emails	To inform and update the community of project progress, milestones, activities planned for the following month, current and upcoming traffic changes	As required
Community information line	Information to the project details with message service via an 1800 number	As required
TfNSW Sydney Metro website	Systems Connect will provide information in electronic format suitable to be uploaded onto the TfNSW Sydney Metro website, including copies of advertisements, traffic alerts, notification letters and other public material related to the works	As required
Systems Connect website	Information about the construction activities will be placed on the Systems Connect website including information about traffic changes, and executive summaries of publicly available reports relating to the project activities.	As required

The table above provides a guide to inform the community of changes to road and traffic conditions. It also provides a summary of the purpose and frequency of each method of communication.

## 5. Working Hours

The standard working hours 7am – 6pm on weekdays and 8am – 1pm on Saturdays. Some activities will need to be undertaken outside of these hours. Refer to a separate out of hour application for additional details as required.

Construction Activity	Construction Hours / Comments
Standard construction hours	Monday to Friday: 7am – 6pm Saturdays: 8am to 1pm Sundays & Public Holidays: No work



## 6. Manage Emergencies

Systems Connect acknowledge the inevitable nature of emergencies and their potentially significant social, economic and environmental consequences. Accordingly, we are aware that the NSW Government has enacted the State Emergency & Rescue Management Act 1989 to support emergency management activities.

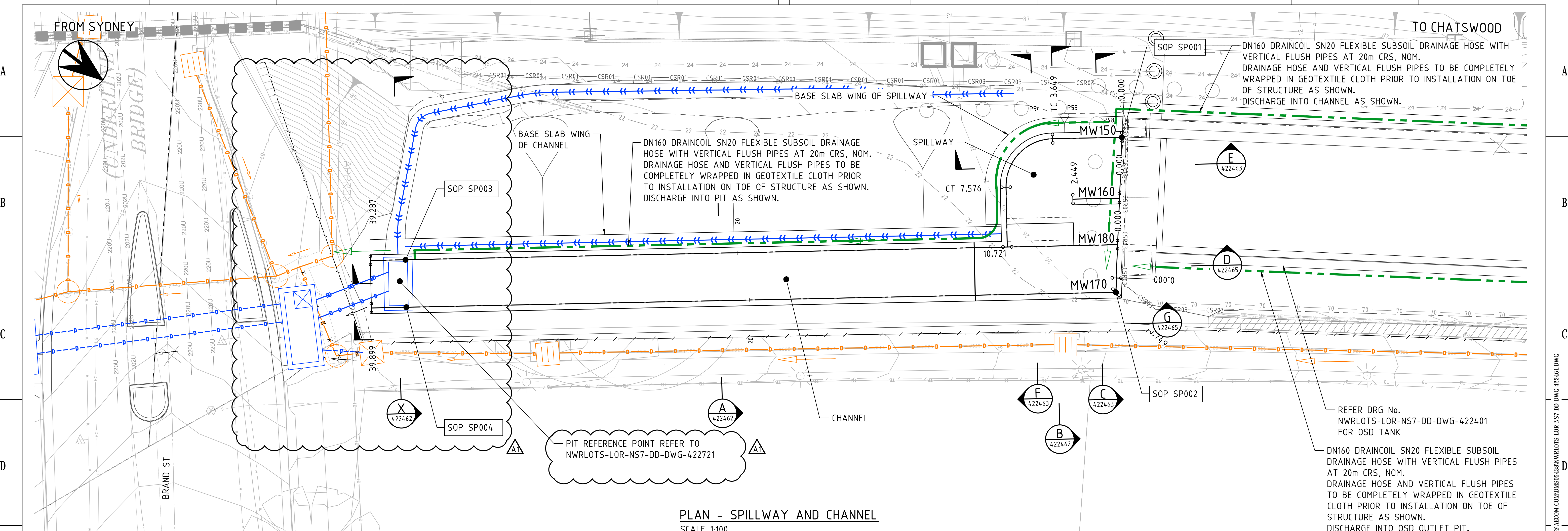
In NSW, the agencies primarily responsible for controlling hazards/emergencies are:

Unplanned Incident Agency Responsibility	
Law Enforcement / Emergencies	NSW Police
Fire	Fire and Rescue NSW / NSW Rural Fire Service
Hazardous Materials	Fire and Rescue NSW / NSW Rural Fire Service
Flood, storm or any natural disaster	NSW State Emergency Service

## 7. Appendices

### Appendix A. Design Drawings, Existing Signs, VMS Plan





PLAN - SPILLWAY AND CHANNEL  
SCALE 1:100

SPILLWAY AND CHANNEL SETOUT TABLE

SOP	EASTING (mE)	NORTHING (mN)	RL (m)*
SP001	331811.335	6257783.664	83.834
SP002	331818.117	6257788.204	81.721
SP003	331838.685	6257756.984	80.977
SP004	331840.676	6257758.496	80.977

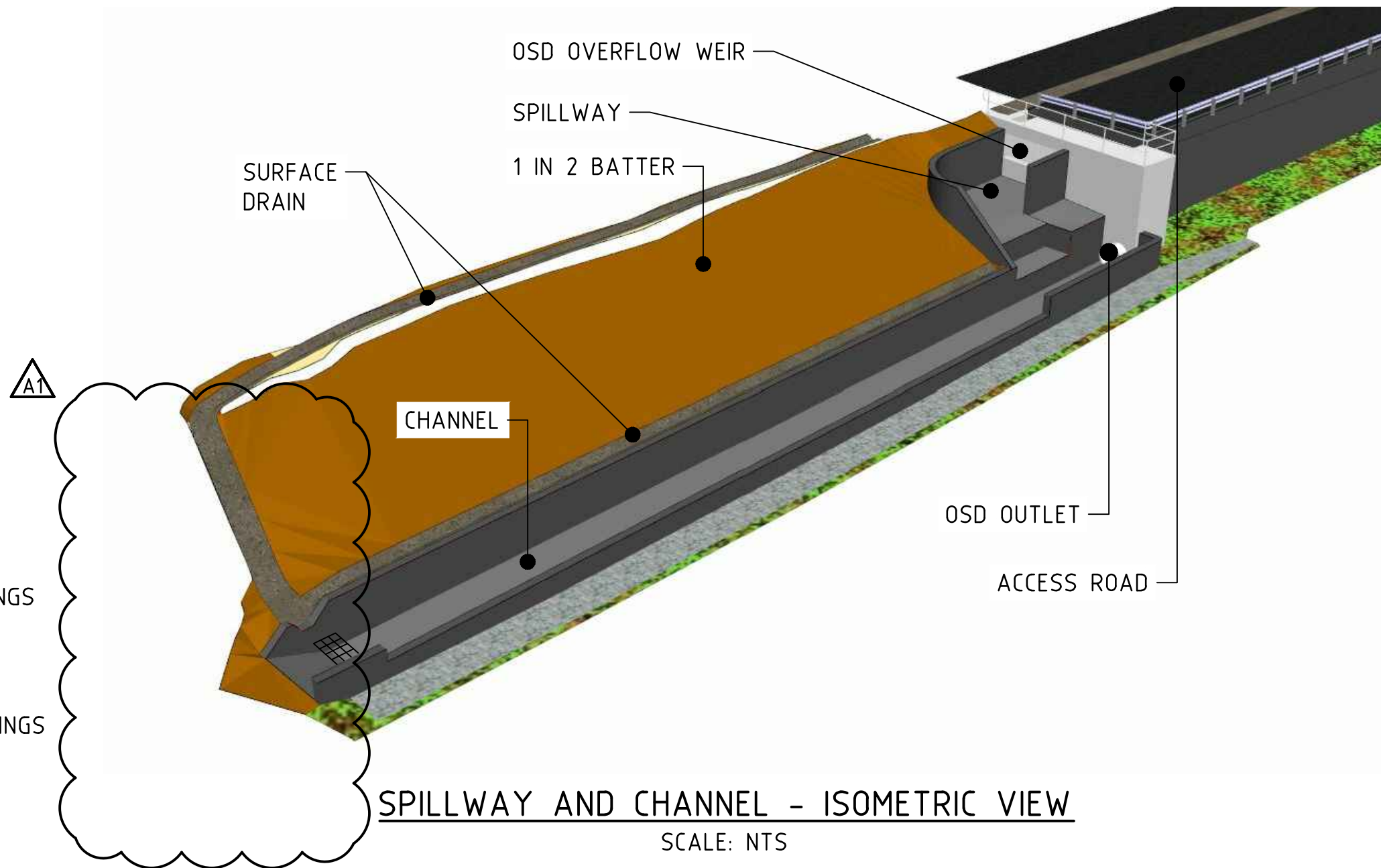
\* RL'S SHOWN FOR SETOUT POINTS (SOP) ARE AT T.O. CONCRETE ADJACENT BASE OF WALL

LEGEND

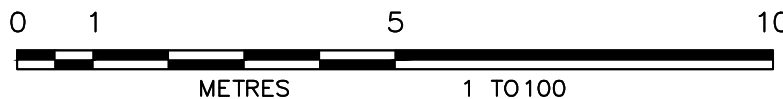
	NEW DRAINAGE PIPE
	NEW DRAINAGE INLET PIT
	NEW DRAINAGE INSPECTION PIT
	EXISTING DRAINAGE PIPE
	EXISTING DRAINAGE PIT
	EXISTING DRAINAGE INSPECTION PIT
	NEW SUBSOIL DRAINAGE PIPE
	NEW COMBINED SERVICE ROUTE

REFERENCES:

1. FOR DRAINAGE PACKAGE COVER SHEET REFER TO DRAWINGS NWRLOTS-LOR-NS7-DD-DWG-022001 AND 022002.
2. FOR DRAINAGE GENERAL NOTES, REFER TO DRAWINGS NWRLOTS-LOR-NS7-DD-DWG-022003 & 022004.
3. FOR DRAINAGE LONGITUDINAL SECTIONS, REFER TO DRAWINGS NWRLOTS-LOR-NS7-DD-DWG-422301 TO 422309.
4. FOR DRAINAGE TYPICAL DETAILS, REFER TO DRAWINGS NWRLOTS-LOR-NS7-DD-DWG-422441 TO 422443.
5. FOR OSD DETAILS, REFER TO DRAWINGS NWRLOTS-LOR-NS7-DD-DWG-422401 TO 422434.



SPILLWAY AND CHANNEL - ISOMETRIC VIEW  
SCALE: NTS



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APPROVED FOR CONSTRUCTION

APPROVED BY AEOEP CCB for Control Gate Stage: 3  
CCR No. 138061

A1		REISSUED FOR CONSTRUCTION - BRAND ST DRAINAGE UPDATE	A.M	31.10.18	B.W	31.10.18	T.L	31.10.18
A0		APPROVED FOR CONSTRUCTION	D.O	22.08.18	B.W	22.08.18	R.B	22.08.18
2		CRITICAL DESIGN REVIEW ISSUE	A.M	13.07.18	A.W	13.07.18	R.B	13.07.18
1		DRAFT CRITICAL DESIGN REVIEW	P.R	07.06.18	A.W	07.06.18	R.B	07.06.18
AMD	GRID REF	DESCRIPTION	DESIGNED SIGN/DATE	VERIFIED SIGN/DATE	APPROVED SIGN/DATE			
CO-ORDINATE SYSTEM: MGA 56			HEIGHT DATUM: AHD		SCALE: AS SHOWN			



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DRAWN	P.LONGSTAFF	31.10.18
DESIGNED	A.MILLER	31.10.18
DRG CHECK	P.ADAMS	31.10.18
DESIGN CHECK	V.WONG	31.10.18
APPROVED	T.LENNON	31.10.18

ARTARMON TO CHATSWOOD

NORTH SHORE LINE - 10.560KM TO 11.600KM  
NORTHERN CORRIDOR WORKS - 7A  
DRAINAGE - OSD SPILLWAY  
OSD - SPILLWAY AND CHANNEL

FILE No: NWRLOTS-LOR-NS7-DD-DWG-422461	SHEET: 01 OF 07	A1
STATUS: FOR CONSTRUCTION		
DRG No: NWRLOTS-LOR-NS7-DD-DWG-422461	1	EDMS No: CV0695743



A

B

C

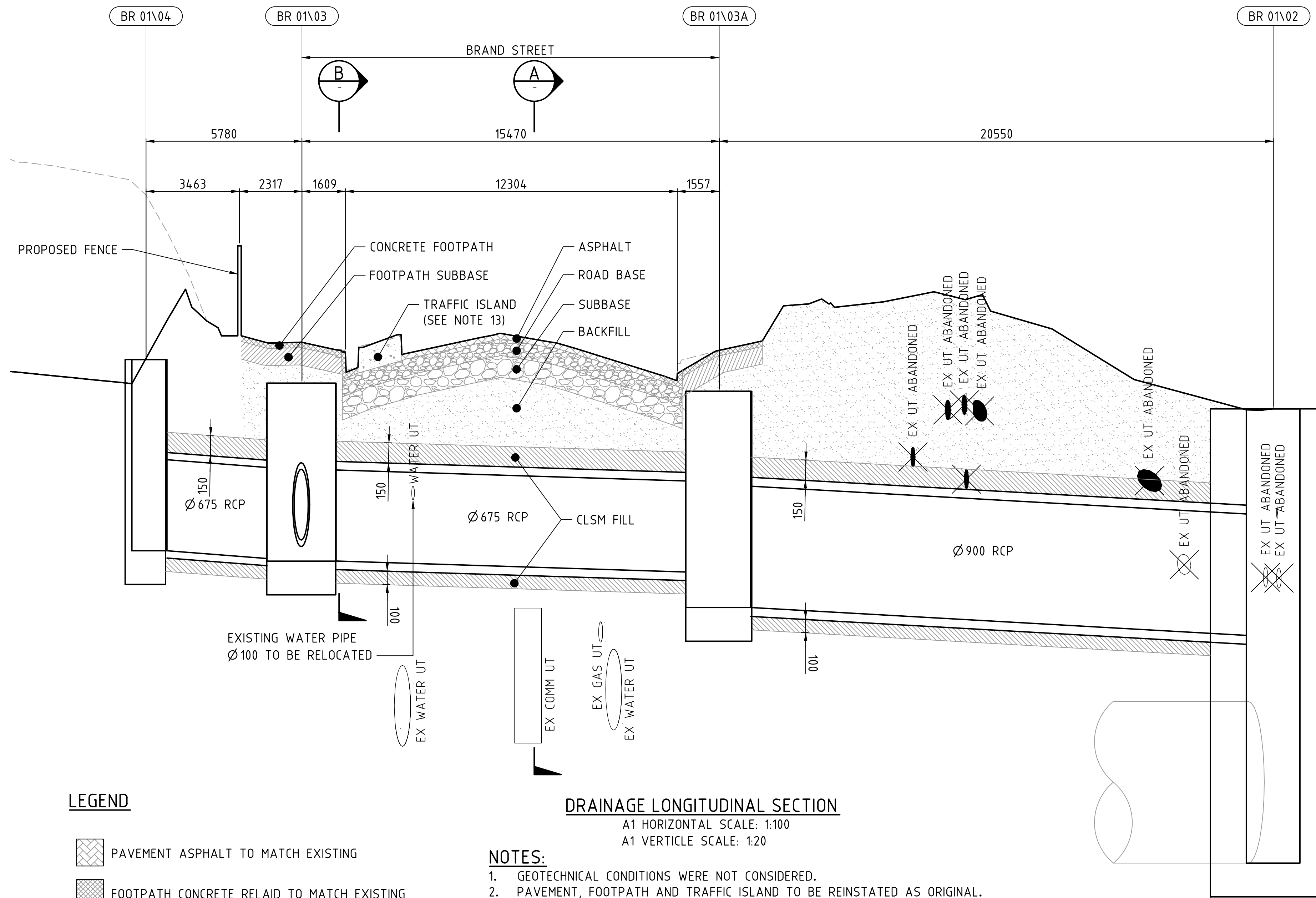
D

E

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G

H

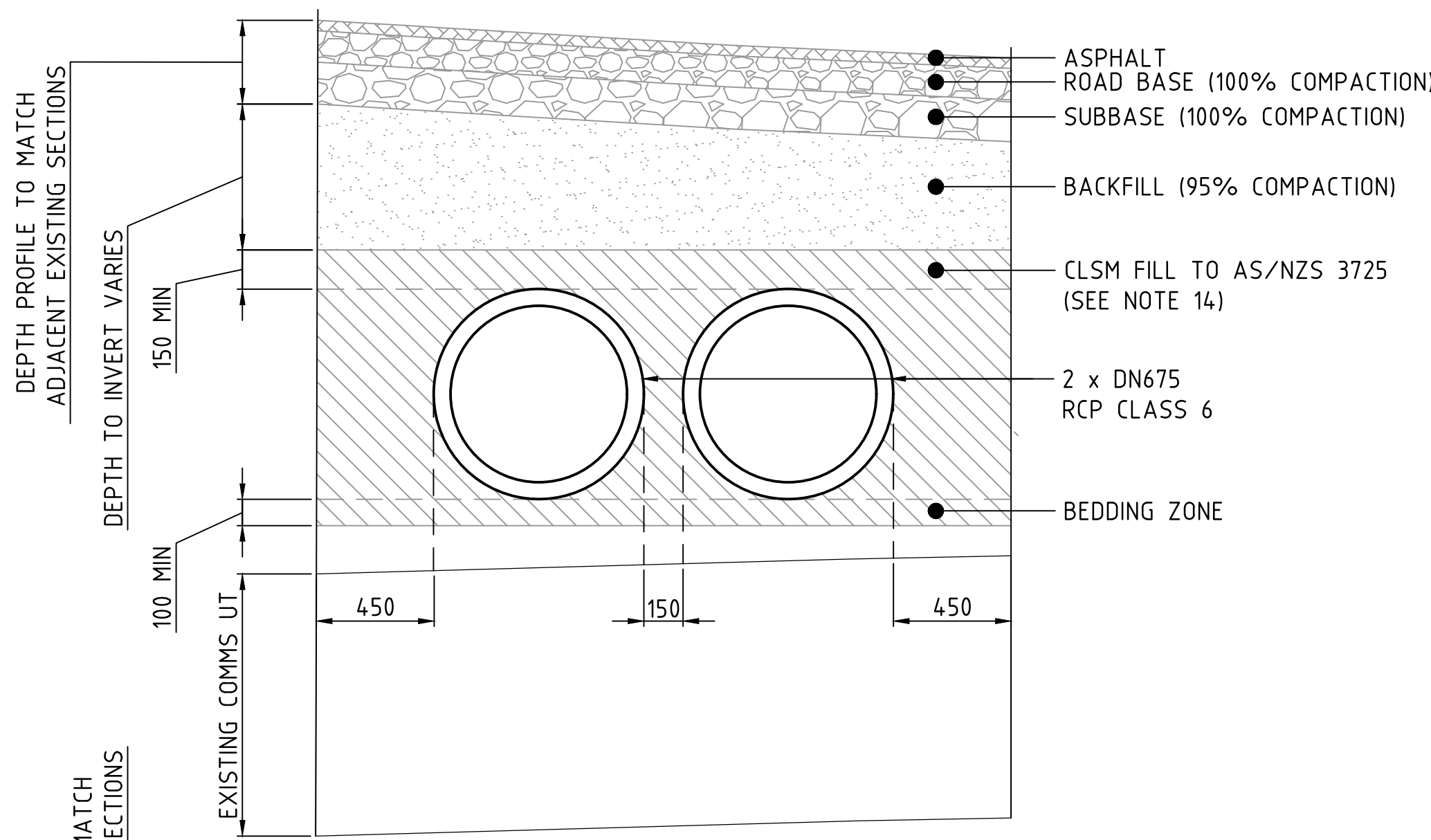


- LEGEND**
- PAVEMENT ASPHALT TO MATCH EXISTING
  - FOOTPATH CONCRETE RELAID TO MATCH EXISTING
  - FOOTPATH SUBBASE RELAID TO MATCH EXISTING
  - ROAD SUBBASE RELAID TO MATCH EXISTING
  - ROAD SUBBASE RELAID TO MATCH EXISTING
  - BACK FILL OF VARYING DEPTH
  - CONTROLLED LOW STRENGTH MATERIALS (CLSM) FILL TO AS/NZS 3725
  - CONCRETE TRAFFIC ISLAND

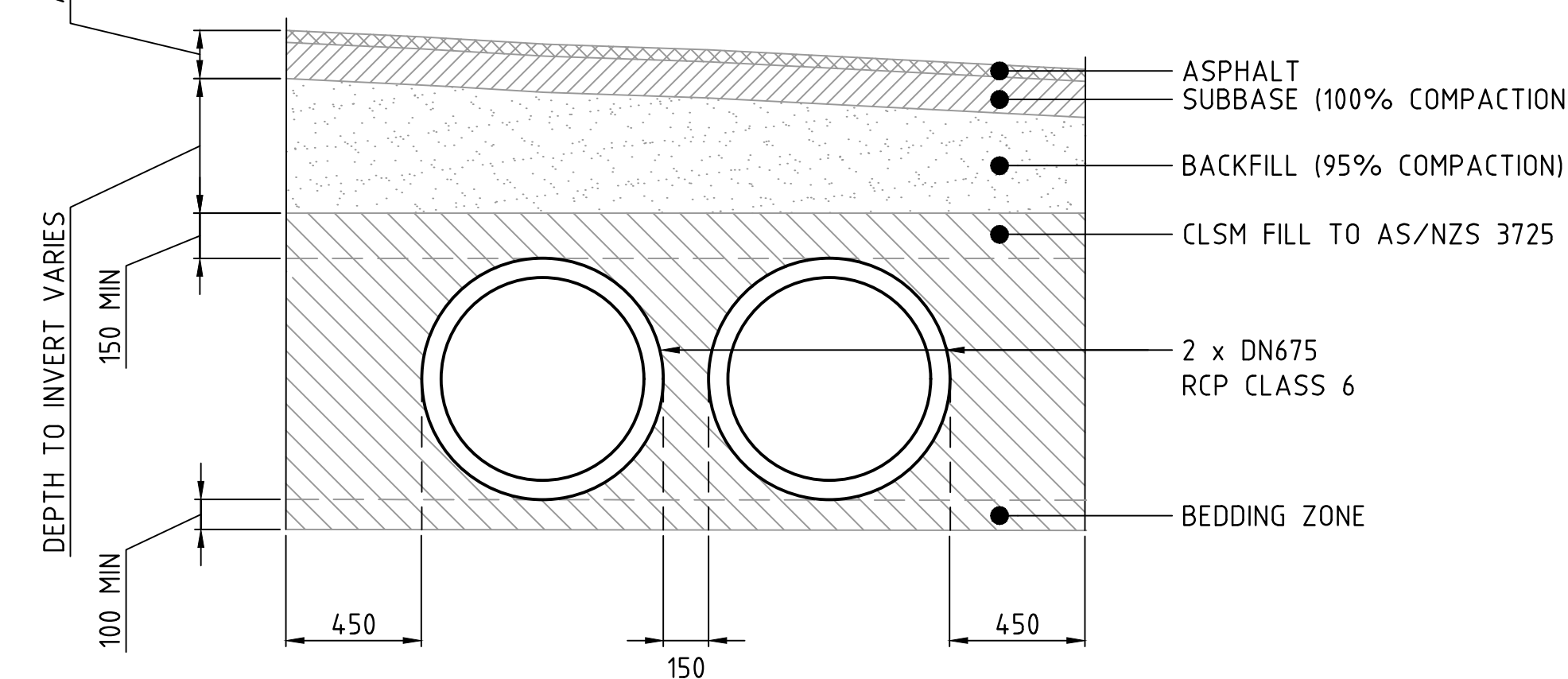
**DRAINAGE LONGITUDINAL SECTION**  
A1 HORIZONTAL SCALE: 1:100  
A1 VERTICLE SCALE: 1:20

- NOTES:**
- GEOTECHNICAL CONDITIONS WERE NOT CONSIDERED.
  - PAVEMENT, FOOTPATH AND TRAFFIC ISLAND TO BE REINSTATED AS ORIGINAL.
  - FOR INVERT LEVELS, REFER TO LONGITUDINAL SECTION.
  - FOR LONGITUDINAL SECTION REFER TO NWRLOTS-LOR-NS7-DD-DWG-422711.
  - DRAINAGE WORKS TO BE CONSTRUCTED AS PER AS 3500.3.
  - ALL EXCAVATED MATERIAL IS TO BE REMOVED FROM THE SITE AND COUNCIL'S RESTORATION SUPERVISOR (9777 7784) IS TO BE ADVISED PRIOR TO BACKFILLING THE TRENCHES SO THAT THE WORK CAN BE INSPECTED.
  - EXCAVATED MATERIAL IS NOT TO BE USED FOR BACKFILLING THE TRENCHES IS TO BE IN ACCORDANCE WITH THE STANDARD DRAWING ATTACHED UNLESS IT IS OF A GRANULAR TYPE WHICH HAS BEEN APPROVED BY THE RESTORATION SUPERVISOR. BACKFILLING OF TRENCHES IS TO BE CARRIED OUT IN ACCORDANCE WITH THE STANDARD DRAWING ATTACHED. IT SHOULD BE NOTED THAT THERE ARE DIFFERENT STANDARDS OF BACKFILLING FOR TRENCHES ABOVE AND BELOW 1.5 METRES IN DEPTH.
  - THE SAND FOR BACKFILLING SHALL BE WASHED FILLING SAND AND IS TO BE PROVIDED BY THE PERMIT HOLDER AND IS TO BE THOROUGHLY DAMPED DOWN AND COMPACTED IN LAYERS NOT EXCEEDING 150MM AND COMPACTED WITH A VIBRATING ROLLER OF WAKER PLATE TO ENSURE THE SAND IS FULLY COMPACTED. THE SAND IS TO BE COMPACTED TO ACHIEVE A DENSITY OF 95% MODIFIED IN ACCORDANCE WITH AS1289.
  - THE FINE CRUSHED ROCK FOR BACKFILLING IS TO BE PLACED AND THOROUGHLY COMPACTED IN LAYERS OF 100MM TO ACHIEVE A DENSITY OF 98% MODIFIED IN ACCORDANCE WITH AS1289.
  - THE SAND CEMENT MIX FOR BACKFILLING IS TO BE PLACED ACROSS THE TOP OF THE RESTORED TRENCH FOR A DEPTH OF 25MM FOR FOOTPATHS AND 50MM FOR ROADWAYS.
  - SHOULD THE BACKFILLING OF THE TRENCH NOT BE CARRIED OUT IN ACCORDANCE WITH THIS DRAWING THE CONTRACTOR WILL BE LIABLE TO ANY EXTRA COSTS INCURRED BY THE COUNCIL IN RECTIFYING THE WORK.
  - SHOULD THE TRENCH SUBSIDE AT A FUTURE DATE DUE TO UNSATISFACTORY BACKFILLING, THE CONTRUCTOR WILL BE LIABLE FOR THE COST OF THE RECTIFICATION WORK REQUIRED.
  - FOR TRAFFIC ISLAND SETOUT, REFER TO DWG No. NWRLOTS-LOR-NS7-DD-DWG-422732.
  - CSLM FILL, FOR DETAILS REFER TO RMS STANDARD DRAWING R0240-01.

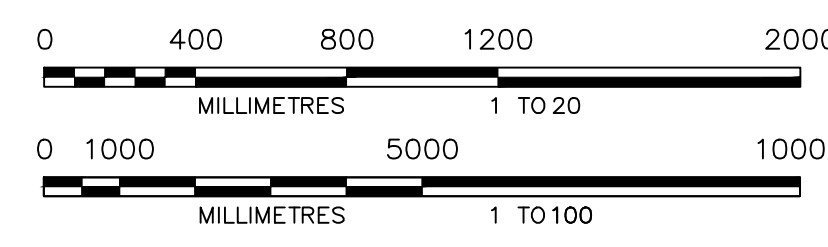
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**TYPICAL TRENCH SECTION A**  
SCALE 1:20



**TYPICAL TRENCH SECTION B**  
SCALE 1:20



AO		APPROVED FOR CONSTRUCTION		D.O 31.10.18	B.W 31.10.18	T.L 31.10.18
AMD	GRID REF	DESCRIPTION		DESIGNED SIGN/DATE	VERIFIED SIGN/DATE	APPROVED SIGN/DATE
CO-ORDINATE SYSTEM: MGA 56			HEIGHT DATUM: AHD		SCALE: AS SHOWN	



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**AECOM**  
LAING O'ROURKE


DRAWN	D.HU	31.10.18
DESIGNED	D.ORB	31.10.18
DRG CHECK	P.ADAMS	31.10.18
DESIGN CHECK	D.DUMITRASCU	31.10.18
APPROVED	T.LENNON	31.10.18

**ARTARMON TO CHATSWOOD**  
NORTH SHORE LINE - 10.560KM TO 11.600KM  
NORTHERN CORRIDOR WORKS - 7A  
DRAINAGE - BRAND ST CONNECTION  
BRAND ST CROSSING DETAILS

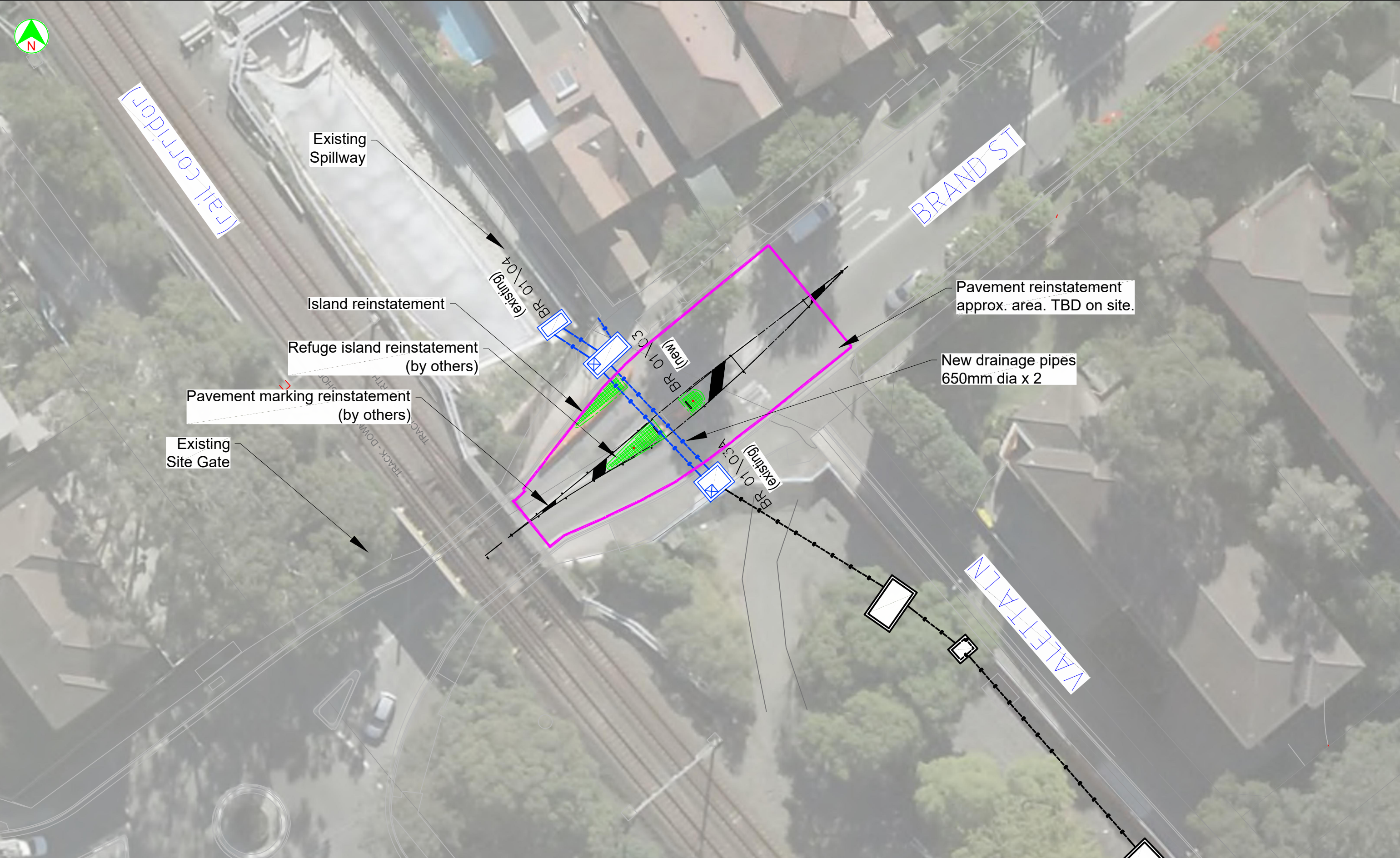
FILE No: NWRLOTS-LOR-NS7-DD-DWG-422731	SHEET: 01 OF 01	A1
STATUS: FOR CONSTRUCTION		
DRG No: NWRLOTS-LOR-NS7-DD-DWG-422731	0	EDMS No: CV0695758
		A


File Plotted: c:\pwworking\AECOM\US10\_AU\CRISTIAN.REYES@AECOM.COM\DWG05488\NWRLOTS-LOR-NS7-DD-DWG-422731.DWG  
Plotted: 31/10/2018 9:23:07 AM  
Plotted by:



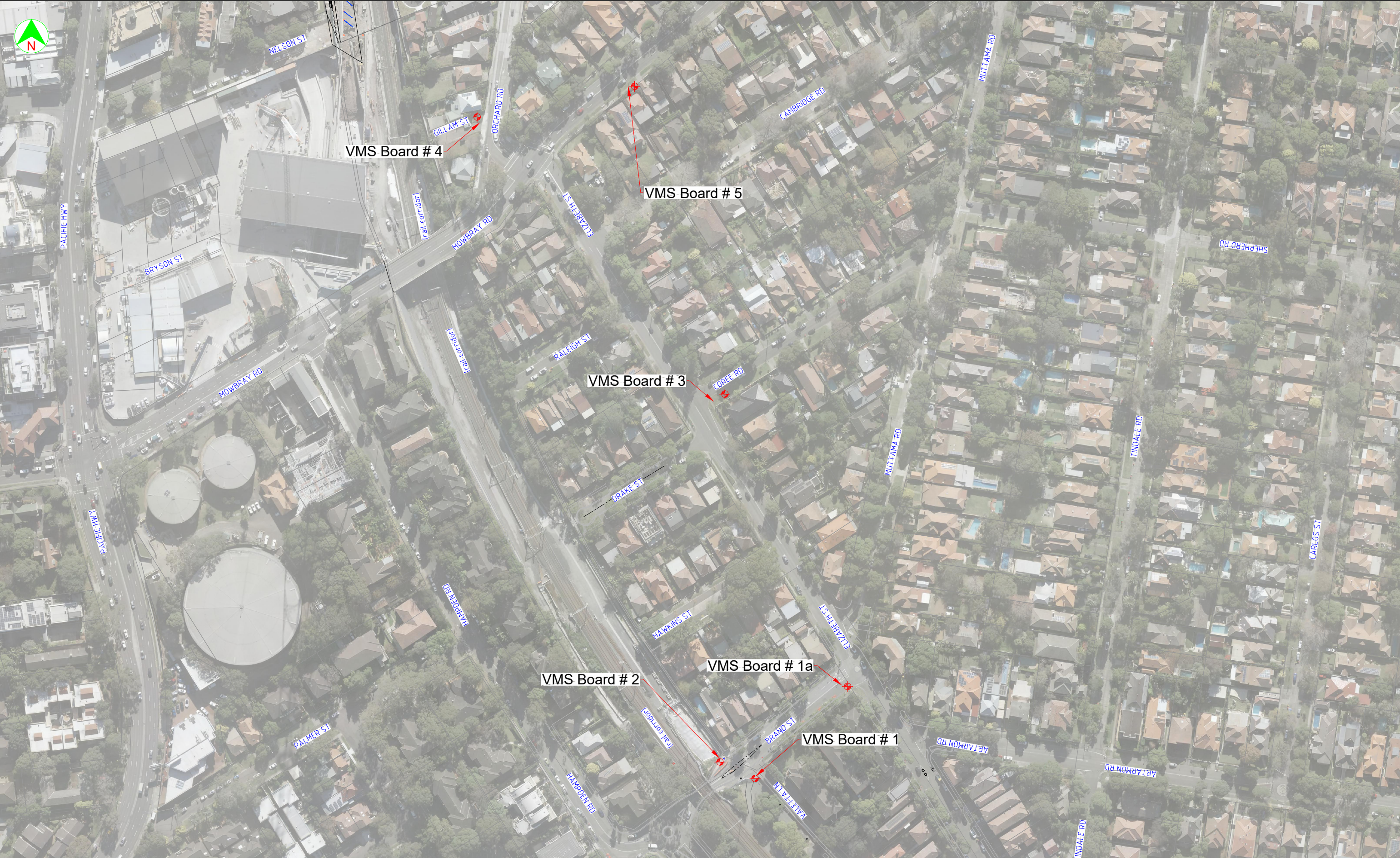
A)	SHIFT REFUGE ISLAND 300mm NORTH	A.MCMILLAN	11/6/15	APPROVED BY:	SCALE: <b>As Shown</b>	SIZE: <b>A1</b>	CONTOUR INTERVALS				<b>WILLOUGHBY CITY COUNCIL</b> <b>BRAND ST, ARTARMON</b> <b>PEDESTRIAN REFUGE</b> <b>PLAN</b>		No. OF SHEETS <b>1</b>	SHEET No. <b>1</b>
				ENGINEER: D. Sung (DATE)	CO-ORDS.	ISG	SURVEYED	J TENHOEDT	25/09/14					
				REVIEWED & APPROVED FOR CONSTRUCTION BY:	DATUM	AHD	DRAWN	A.MCMILLAN	2/4/15					
					FIELD BOOK	-	DESIGNED	A.MCMILLAN	2/4/15					
REVISION	DESCRIPTION	BY	DATE	ENGINEER: P. Collings (DATE)	LEVEL BOOK	-	CHECKED	-	-					






						NOTES	PLOT DATE / TIME		PLOT BY M SIM		CLIENT	Brand St - Scope of work summary (refer design drawings for details)		A3							
LEGEND						DRAWINGS / DESIGN PREPARED BY		TITLE	NAME	DATE											
								DRAWN	M.SIM	16/2/21											
								DRG CHECK	M.SIM	16/2/21											
								DESIGN													
								DESIGN CHECK			PREPARED FOR 			SHEET							
								TRAFFIC MNGR													
																ISSUE STATUS FOR INFORMATION		SHEET No. 1 / 1		ISSUE 1	
CO-ORDINATE SYSTEM MGA ZONE 56						HEIGHT DATUM AHD															












						NOTES	PLOT DATE / TIME			PLOT BY M SIM		CLIENT  <div>PREPARED FOR</div> <div></div>		VMS Positioning plan			A3		
LEGEND						DRAWINGS / DESIGN PREPARED BY		TITLE	NAME	DATE	SHEET								
						DRAWN		M.SIM	16/2/21										
						DRG CHECK		M.SIM	16/2/21										
						DESIGN													
														DESIGN CHECK				ISSUE STATUS FOR INFORMATION	
TRAFFIC MNGR																			
						CO-ORDINATE SYSTEM MGA ZONE 56		HEIGHT DATUM AHD											



THIS DRAWING MUST BE REPRODUCED IN COLOUR AND MUST BE IN COMPLIANCE WITH THE FOLLOWING: 150mm ON A3 SIZE ORIGINAL

VMS/Sign #	Location	Pework Message	During work message	
VMS 1  VMS 1a (1a is the relocatd VMS 1)	Brand St EB (display facing WB traffic)	Brand St Changed Traffic Conditions From xx May	This VMS board relocated to top of the closed Brand St after the One Way implementation. And display the following message:  No Access to Brand St W Bnd Follow Detour via Artarmon Rd	  <div>VMS/Sign location (relocated postion after One-Way implementation)</div>
VMS 2	Brand St WB (display facing EB traffic)	Brand St Changed Traffic Conditions From xx May	Road Work Changed Traffic Conditions	
VMS 3	Elizabeth St SB (at Caree Rd intersection)	Brand St Changed Traffic Conditions From xx May	No Access to Brand St W Bnd Follow Detour via Artarmon Rd	
VMS 4	Orchard Road and Mowbray Road	Brand St WB Changed Traffic Conditions From xx May	Brand St WB Closed, Use Mowbray Road - Hamden Road	
VMS 5	Mowbray Road WB (50m before Elizabeth St)	Brand St WB Changed Traffic Conditions From xx May	Brand St WB Closed, Use Mowbray Road - Hamden Road	

LEGEND							NOTES	PLOT DATE / TIME			PLOT BY M SIM	CLIENT	VMS Positioning plan and use of supplementary signs during the work where VMS is not possible to be positioned (due to narrow footpath etc)			A3
REVISION DESC.	REV	DATE	APPROVAL	SCALES ON A3 SIZE DRAWING	DRAWINGS / DESIGN PREPARED BY	TITLE	NAME	DATE								
						DRAWN	M.SIM	16/2/21								
						DRG CHECK	M.SIM	16/2/21								
						DESIGN						PREPARED FOR		SHEET		1
						DESIGN CHECK										
						TRAFFIC MNGR										





						NOTES	PLOT DATE / TIME			PLOT BY M SIM		CLIENT	Existing Signs at Brand St			A3
LEGEND	REVISION DESC.	REV	DATE	APPROVAL	SCALES ON A3 SIZE DRAWING	DRAWINGS / DESIGN PREPARED BY		TITLE	NAME	DATE						
								DRAWN	M.SIM	15/1/21						
								DRG CHECK	M.SIM	15/1/21						
								DESIGN								
								DESIGN CHECK								
								TRAFFIC MNGR								
											PREPARED FOR				SHEET	
											Systems Connect					
												ISSUE STATUS	SHEET No.	ISSUE		
												FOR INFORMATION	1 / 1	0		



## Appendix B. TCP Stage 1 and 6





						NOTES	PLOT DATE / TIME			PLOT BY M SIM	CLIENT   <
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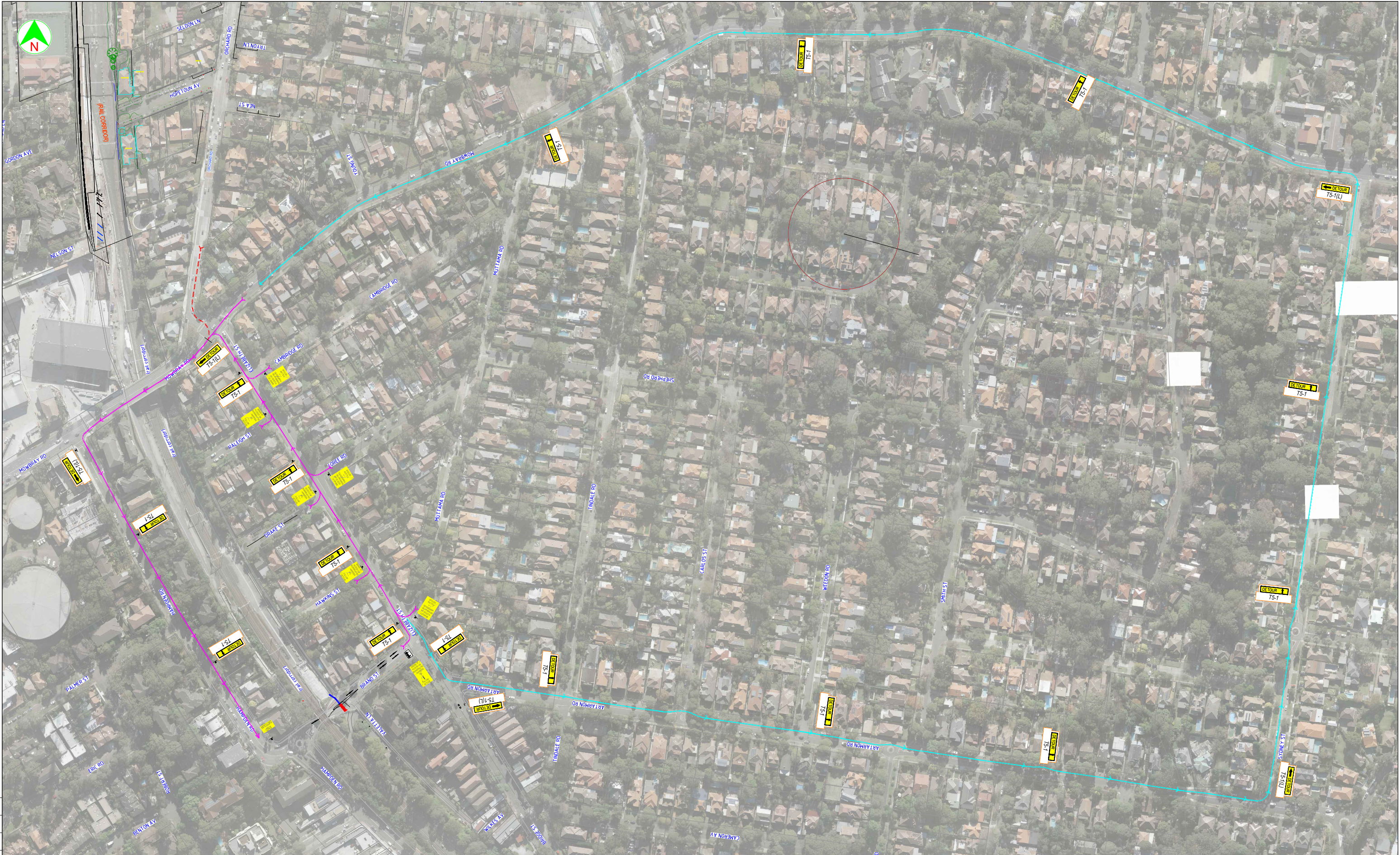


										NOTES	PLOT DATE / TIME			PLOT BY M.SIM		CLIENT	Stage 1 and 6 Short Term Stop slow			A3		
LEGEND					REVISION DESC.	REV	DATE	APPROVAL	SCALES ON A3 SIZE DRAWING		DRAWINGS / DESIGN PREPARED BY		TITLE	NAME	DATE					PREPARED FOR <div>Systems Connect</div>	SHEET	
<div><div></div></div> <div>Pedestrian Plan - During excavation work under</div>													DRAWN	M.SIM	14/1/21							
<div><div></div></div> <div>Work area</div>													DRG CHECK	M.SIM	14/1/21							
<div><div></div></div> <div>Temp. concrete barrier (or equivalent)</div>													DESIGN									
<div><div></div></div> <div>Temp. fence</div>													DESIGN CHECK			Systems Connect	ISSUE STATUS FOR INFORMATION		SHEET No. 2 / 2	ISSUE 0		
<div><div></div></div> <div>Drainage crossing</div>													TRAFFIC MNGR									
<div><div></div></div> <div>Temp. sign orientation</div>																						
										CO-ORDINATE SYSTEM MGA ZONE 56		HEIGHT DATUM AHD										



## Appendix C. TCP Stage 2 and 3, Pedestrian Plan, Detour











							NOTES	PLOT DATE / TIME			PLOT BY M SIM		CLIENT		Stage 2 and 3 One Way EB Long Term Detour Plan			A3		
LEGEND		REVISION DESC.	REV	DATE	APPROVAL	SCALES ON A3 SIZE DRAWING		DRAWINGS / DESIGN PREPARED BY		TITLE	NAME	DATE								
<div><div></div>Detour for local traffic</div> <div><div></div>Detour for general traffic that missed the early detour signs</div> <div><div></div>Orchard Road traffic lead by VMS message board to take the right turn into Mowbray Rd --Hampden St - Brand St (instead of Elizabeth St to Brand St)</div>										DRAWN	M.SIM	12/2/21								
										DRG CHECK	M.SIM	12/2/21								
										DESIGN										
										DESIGN CHECK			PREPARED FOR		<div><div></div><div>Systems Connect</div></div>			SHEET		
										TRAFFIC MNGR										









						NOTES	PLOT DATE / TIME		PLOT BY M SIM		CLIENT	Stage 2 and 3 One Way EB Long Term - for drainage, pits installation			A3				
LEGEND					REVISION DESC.	REV	DATE	APPROVAL	SCALES ON A3 SIZE DRAWING							DRAWINGS / DESIGN PREPARED BY	TITLE	NAME	DATE
					Pedestrian Plan - During excavation work under											DRAWN	M.SIM	18/2/21	
					Work area											DRG CHECK	M.SIM	18/2/21	
					Temp. concrete barrier (or equivalent)							DESIGN							
					Temp. fence							DESIGN CHECK							
					Drainage crossing							TRAFFIC MNGR							
					Temp. sign orientation														
														</					





							NOTES	PLOT DATE / TIME			PLOT BY M SIM		CLIENT		Stage 2 and 3 One Way EB Long Term - for drainage, pits installation			A3	
LEGEND		REVISION DESC.	REV	DATE	APPROVAL	SCALES ON A3 SIZE DRAWING		DRAWINGS / DESIGN PREPARED BY		TITLE	NAME	DATE							
 Pedestrian Plan - During excavation work under										DRAWN	M.SIM	18/2/21							
 Work area										DRG CHECK	M.SIM	18/2/21							
 Temp. concrete barrier (or equivalent)										DESIGN			PREPARED FOR		SHEET				
Temp. fence										DESIGN CHECK									
 Drainage crossing										TRAFFIC MNGR									
Temp. sign orientation																			
						CO-ORDINATE SYSTEM MGA ZONE 56		HEIGHT DATUM AHD							ISSUE STATUS FOR INFORMATION		SHEET No. 2 / 4		ISSUE 1



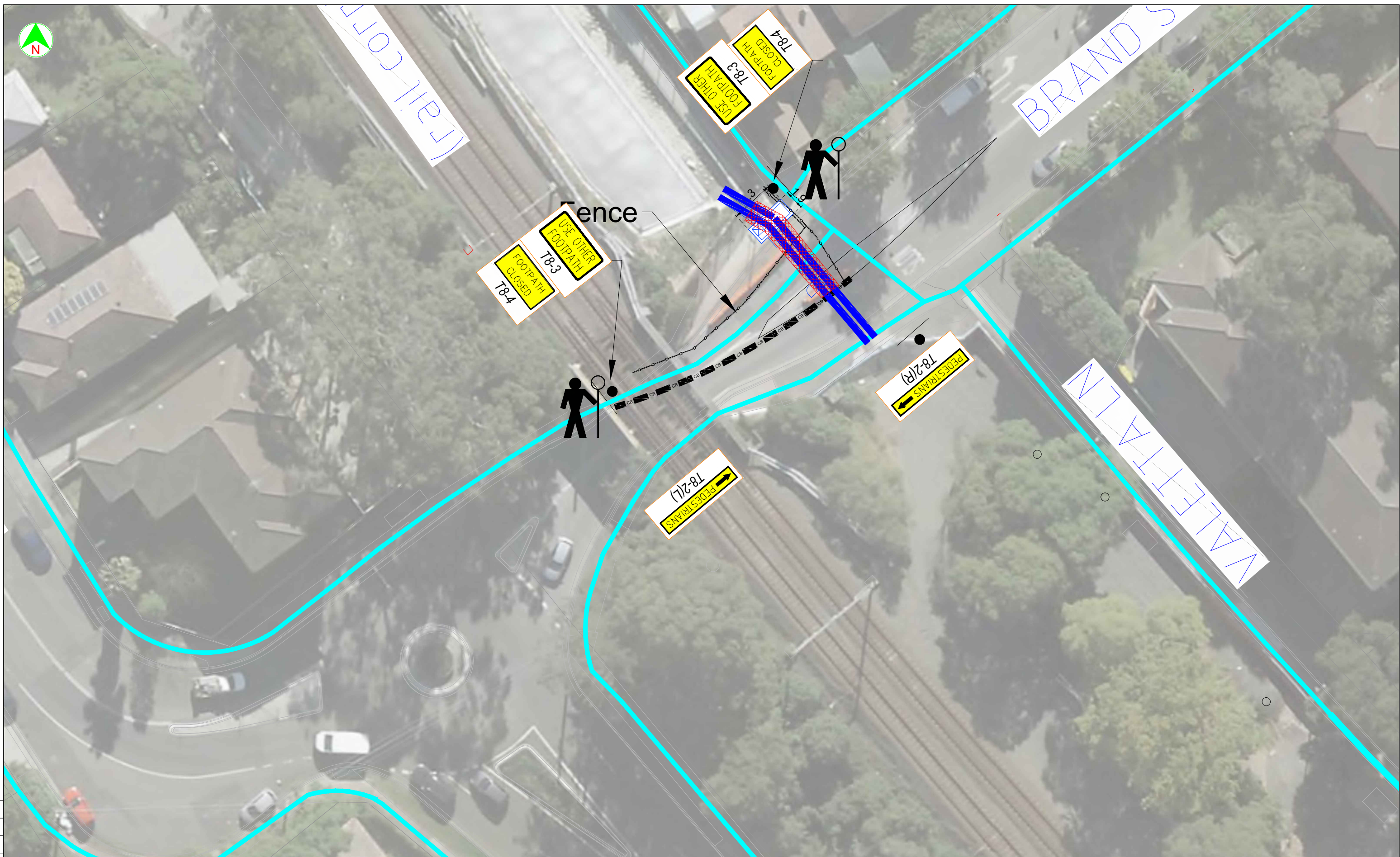


							NOTES	PLOT DATE / TIME			PLOT BY M.SIM		CLIENT	Stage 2 and 3 One Way EB Long Term - for drainage, pits installation			A3					
LEGEND				REVISION DESC.	REV	DATE	APPROVAL	SCALES ON A3 SIZE DRAWING		DRAWINGS / DESIGN PREPARED BY		TITLE					NAME	DATE	SHEET			
<div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div><div>Pedestrian Plan - During excavation work under Work area</div><div>Temp. concrete barrier (or equivalent)</div><div>Temp. fence</div><div>Drainage crossing</div><div>Temp. sign orientation</div></div>												DRAWN					M.SIM	18/2/21				
												DRG CHECK					M.SIM	18/2/21				
												DESIGN										
										DESIGN CHECK						PREPARED FOR						
										TRAFFIC MNGR						<div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div><div>Systems Connect</div></div>						



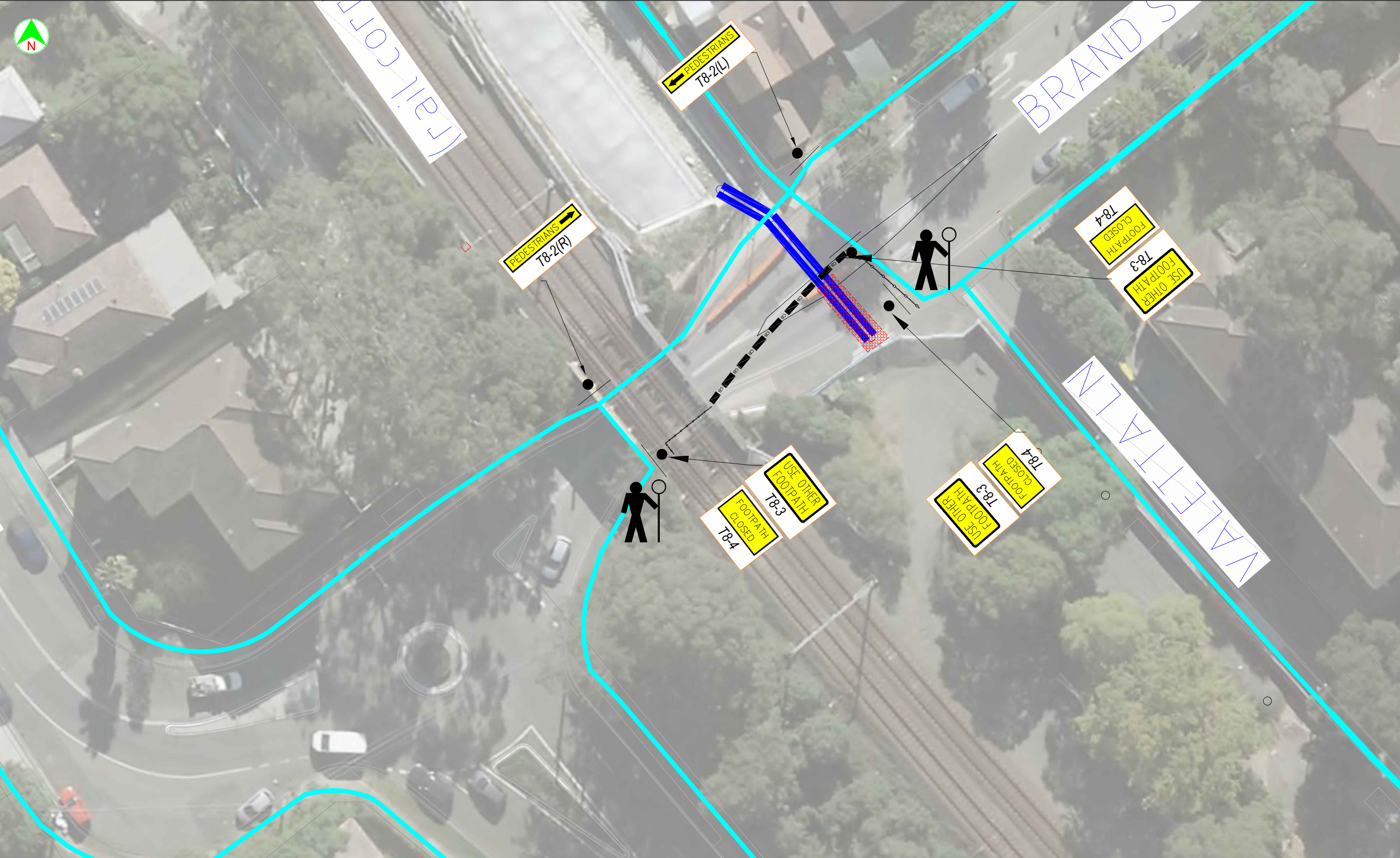






										NOTES	PLOT DATE / TIME		PLOT BY M.SIM	CLIENT		Pedestrian Plan - During excavation work under existing footpath			A3
LEGEND					REVISION DESC.	REV	DATE	APPROVAL	SCALES ON A3 SIZE DRAWING	DRAWINGS / DESIGN PREPARED BY		TITLE	NAME						DATE
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										NOTES		PLOT DATE / TIME		PLOT BY M SIM		CLIENT		Pedestrian Plan - During excavation work under existing footpath		A3	
LEGEND					REVISION DESC. REV DATE APPROVAL SCALES ON A3 SIZE DRAWING					DRAWINGS / DESIGN PREPARED BY		TITLE	NAME	DATE							
<div><div></div><div>Pedestrian Plan - During excavation work under</div><div><div></div><div>Work area</div></div><div><div></div><div>Temp. concrete barrier (or equivalent)</div></div><div><div></div><div>Temp. fence</div></div><div><div></div><div>Drainage crossing</div></div><div><div></div><div>Temp. sign orientation</div></div></div>												DRAWN	M.SIM	18/2/21							
												DRG CHECK	M.SIM	18/2/21							
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												TRAFFIC MNGR									

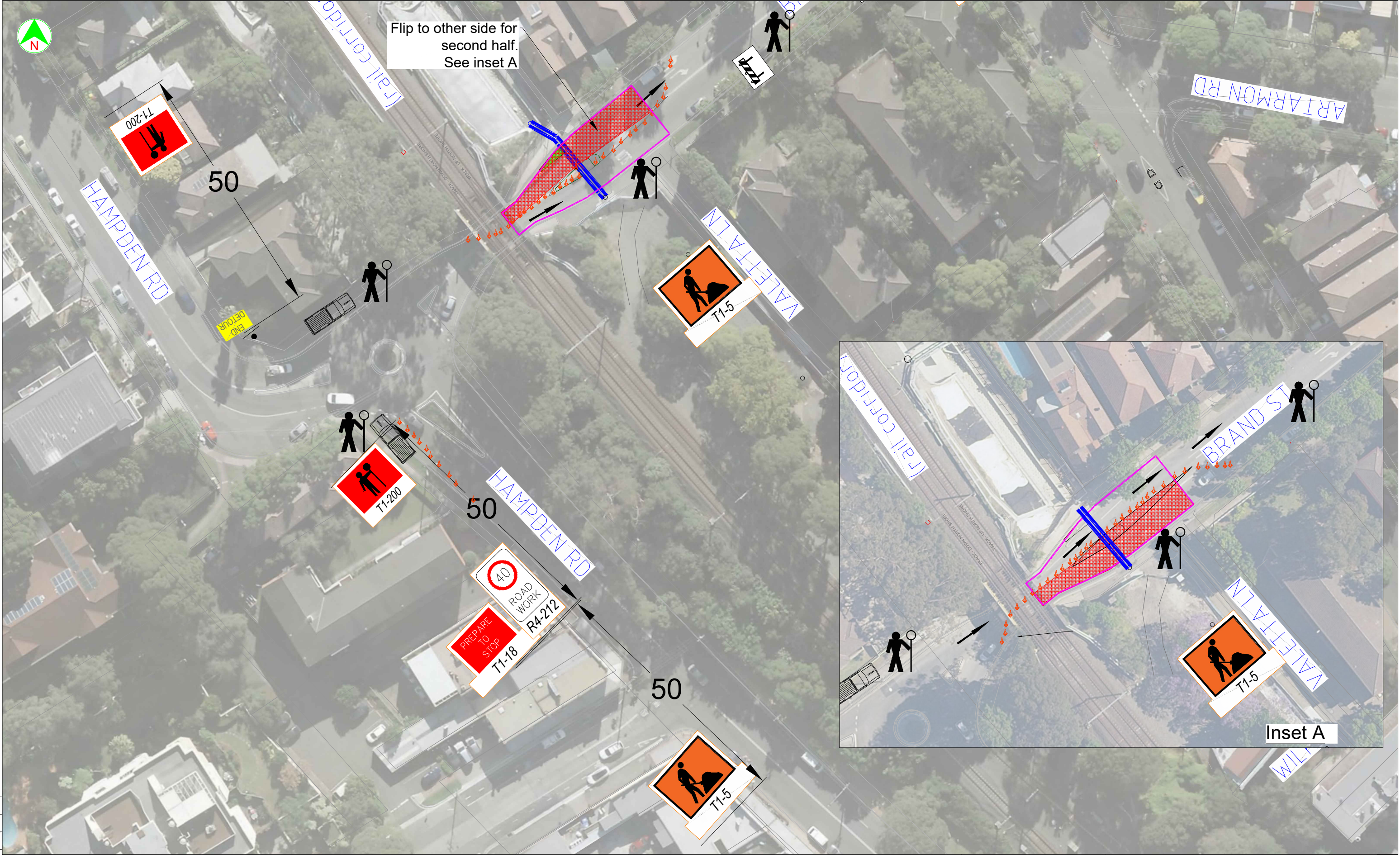


## Appendix D. TCP Stage 4 and 5







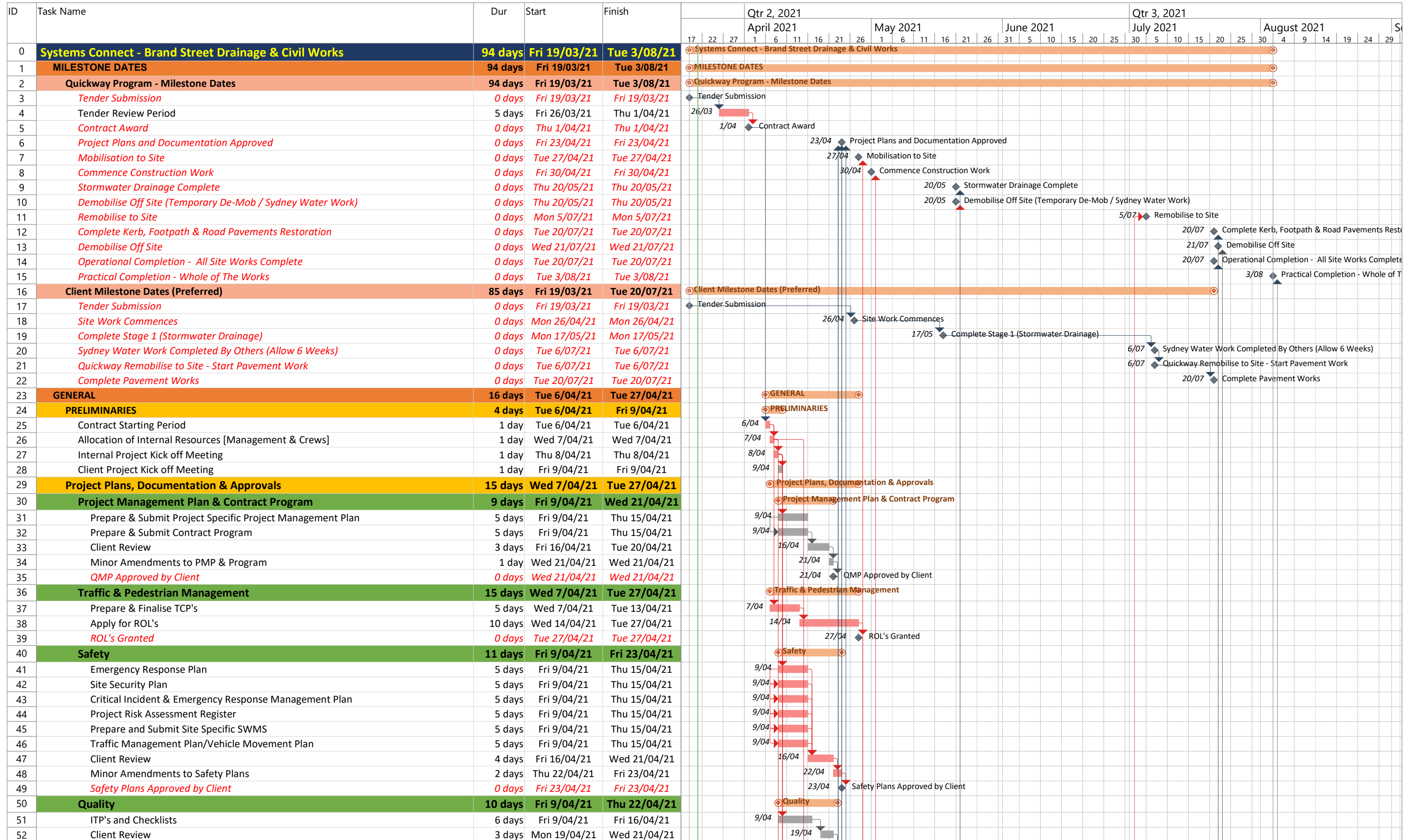


										NOTES	PLOT DATE / TIME			PLOT BY M.SIM	CLIENT	Stage 4 and 5 One Way EB Short Term - island and paving works			A3				
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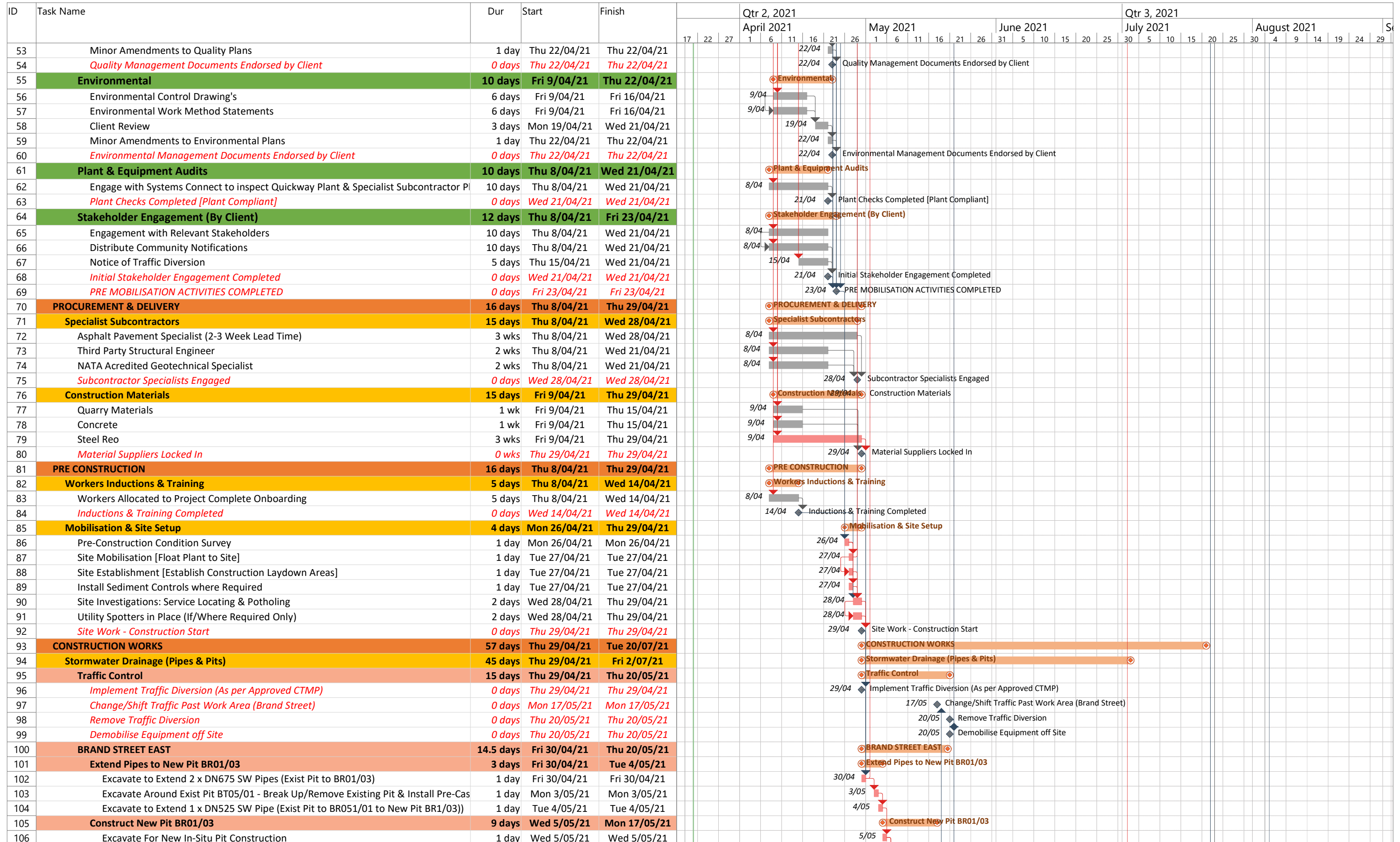


## Appendix E. Misc - Work Program, Turning Path

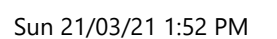
















Project: Systems Connect - Bran  
Date: Sun 21/03/21

Task		Summary		Manual Task		Finish-only		Critical Split		Manual Progress	
Split		Project Summary		Duration-only		External Tasks		Baseline			
Milestone		Inactive Task		Manual Summary Rollup		External Milestone		Baseline Milestone			
Summary		Inactive Milestone		Manual Summary		Deadline		Baseline Summary			
Summary (higher level)		Inactive Summary		Start-only		Critical		Progress			



