

Sydney Metro Sydenham to Bankstown Ancillary Facility Checklist

This checklist has been generated to determine compliance under the Sydney Metro City and Southwest Sydenham to Bankstown Upgrade Planning Approval, including Conditions of Approval A16 to A19 and to assess environmental risk factors.

1. Proposed Ancillary Facility

Assessment Name	Carrington Road Ancillary Facility and Laydown
Location	Way Street, Marrickville
Prepared By	Chris McCallum
Revision	Rev 2
Date required by	23 September 2023

1. Provide a description of the location, including address, and proposed use. Attach a map within Appendix A

The proposed Ancillary Facility will be assessed under the Sydney Metro City and Southwest – Sydenham to Bankstown project approval:

- Sydney Metro City & Southwest - Sydenham to Bankstown (SSI 8256)
- Sydney Metro City & Southwest - Sydenham to Bankstown Modification 1

The proposed laydown is required to provide sufficient storage area for the Bankstown Line track works. There is no storage area available within the Fraser Park area. Any other potential storage areas within the vicinity of the project would require longer travel distances for plant and would potentially require additional material movements on public roads. As such, there are no reasonable or feasible alternatives due to space constraints and access issues that restrict getting materials to this location from other areas in the rail corridor.

The proposed ancillary facility and laydown areas will be located within the rail corridor zoned SP2 adjacent to the existing project boundary within an area owned by Sydney Water (refer to Appendix A for location).

corridor. The facility would be used for:

- stockpiling of materials such as spoil, capping, stabilised sand and ballast
- storage of construction materials associated with security fencing
- location of portaloos and temporary amenities

The installation of a hardstand areas would be required

An existing access track to the area will be from an existing gate located at the end of Carrington Road, Marrickville. This access track will be stabilised by ballast. Access may be required outside of possessions for deliveries and removal of waste spoil and other materials.

Plant used within the facility will include:

- 2t tipper
- Excavator
- Telehandler
- 14t Hydrema
- Bogie



- Water Cart
- Street Sweeper (Carrington Road)
- Various Hand tools
- similar types of plant and equipment may be used and/or stored within the area depending on the scope of works

No bulk quantities of dangerous or hazardous goods would be stored.

The area will be used during standard construction hours. Use of the facility during rail possessions will be subject to an OOHW Application.

Approximately 20 staff members will access the facility at any time, however, will predominately be used during the September Shutdown (23 September 2023 until 6 October 2023), and Christmas Shutdown (27 December 2023 until 26 January 2024)

Due to the minor size of the facility this would be considered a “Minor Ancillary Facility”, and as the facility is located outside of the Project boundary it will be assessed against CoA-A17

2. Landowner details

Works would be carried out on land currently owned by Sydney Water (Lot 1 DP1007789, Lot 1 and 2 DP918243). Part of the Laydown is within Sydney Trains land, but outside of the current project boundary (Lot 2 DP805700). Refer to Appendix B for a map of lot details. Refer to Appendix C for a copy of consent to utilise the land.

3. Timeframe

The intended timeframe for the use of the facility is until the end of the SMC project, indicatively dated as May 2024

4. Assessment against CoA-A16

Ancillary facilities that are not identified by description and location in the documents listed Condition A1 can only be established and used in each case if:

(a) they are located within the Construction boundary of the CSSI

The proposed location is not within the approved project boundary however as the land is within the rail corridor the proposed ancillary facility is to be assessed under CoA-A17

(b) they are not located next to a sensitive receiver (including access roads) (unless landowners and occupiers have accepted in writing the carrying out of the relevant facility in the proposed location); and

The proposed site is not located next to sensitive receivers as the area is located within the rail corridor between the XPT and T3 Bankstown Line and the T4 Illawarra Line.

The surrounding land uses are industrial / commercial with a sewage pumping station to the east, the T3 Bankstown Line Rail embankment to the north, and various commercial premises to the south and west. The closest residential properties are approximately 180m away.

(c) they have no impacts on heritage items (including areas of archaeological sensitivity), and threatened species, populations or ecological communities beyond the impacts approved under the terms of this approval; and

The laydown area is a flat hardpacked ground. The nearest waterway is approximately 700m away to the west. The laydown area drains overland towards the Australian Rail Track Corporation (ARTC) line to the south to an open culvert approximately 10m away. The nearby embankment is vegetated with established trees. These will not be impacted as part of the laydown. There is no known protected flora or fauna within the area.

Sewage Pumping Station 271 to the east of the proposed laydown location is listed on the State Heritage Register (listing number: 01342). Laydown will occur outside the state heritage curtilage and will be temporary only. There are no vibratory works associated with the use of the laydown. There is no line of sight for members of the public between the laydown and Sewage Pumping Station. Signage will be put in place to make workers aware of the heritage site.

'Sewage Pumping Station 271, chimney stack, and two storey residence, including interiors' is also a locally listed heritage item (number: I67) under the Marrickville Local Environment Plan (LEP) 2011. The area under the listing includes Lot 1, DP 182542; Lots 1 and 2, DP 744955, noting that the proposed laydown area is within Lot 1 DP744955. Appendix B includes an image of the Heritage Item extents as mapped within the LEP.

JHLOR have not identified any structures or other items of heritage significance within the laydown area, including plants or trees.

The area is owned by Sydney Water Corporation (SWC) – any works will occur in accordance with conditions specified by SWC in their consent.

(d) the establishment and use of the facility can be carried out and managed within the outcomes set out in the terms of this approval, including in relation to environmental, social and economic impacts.

The use of the area is consistent with the outcomes set out in the terms of the Planning Approval. JHLOR acknowledge that once endorsed, the use of the area will be subject to the requirements of the Planning Approval, including but not limited to the Conditions of Approval and Revised Environmental Mitigation Measures.

5. Assessment against CoA-A17

Ancillary facilities that are not identified by description and location in the documents listed in Condition A1 and do not meet the requirements of Condition A16, can only be established and used with the approval of the Planning Secretary except where they are located within the rail corridor, in which case they may be endorsed by the ER. A review of environmental impacts must be submitted with the request for Planning Secretary's approval or ER's endorsement.

The proposed location is outside of the Sydenham to Bankstown Project Boundary and is not identified within the documents listed in Condition A1.

The proposed location is within the rail corridor and in accordance with A17 can be endorsed by the Environmental Representative.

A risk assessment is provided in Section 2. It is noted that the CEMP and sub-plans will be implemented for any works at the site.

6. Assessment against CoA-A18

The use of an ancillary facility for Construction must not commence until the CEMP required by Condition C1, relevant CEMP Sub-plans required by Condition C3 and relevant Construction Monitoring Programs required by Condition C8 have been approved by the Planning Secretary.

Works will be completed under the project Construction Environmental Management Plan (CEMP) and sub-plans, including the Construction Noise and Vibration Management Plan (CNVMP), Construction Heritage Management Plan (CHMP), Construction Soil and Water Management Plan (CSWMP) (including an Erosion and Sediment Control Plan (ESCP), and Community Consultation Strategy (CCS).

7. Assessment against CoA-A19

Lunch sheds, office sheds, portable toilet facilities, and the like, that are not identified as an ancillary facility in the in the documents listed Condition A1, can be established where they satisfy the following criteria:



<p><i>(a) are located within the Construction boundary;</i></p>
<p>Not applicable as assessment and endorsement will be under CoA-A17</p>
<p><i>(b) have been assessed by the ER to have:</i></p> <ul style="list-style-type: none"><i>(i) minor amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the Interim Construction Noise Guideline (DECC, 2009), traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and</i><i>(ii) minor environmental impact with respect to waste management and flooding, and</i><i>(iii) no impacts on biodiversity, soil and water, and heritage items beyond those already approved under other terms of this approval.</i>
<p>Not applicable as assessment and endorsement will be under CoA-A17</p>



2. Risk Assessment

Environmental Risk Assessment Rankings

This table may be used as a guide in determining the level of risk for each environmental issue.

For each identified issue, consider the ‘maximum credible’ (not absolute worst case) risk that could result with **minimal or no controls** other than existing and using normal construction practices.

Note: Any one of the listed consequences must result in the use of the applicable consequence grading.

Probability:			Consequence:		
5 = Certain 4 = Likely 3 = Possible 2 = Unlikely 1 = Rare			5 = Severe 4 = Major 3 = Moderate 2 = Minor 1= Incidental		
1- 4 Acceptable			5 - 9 Acceptable with control measures		10 - 16 Requires the implementation of best practice
					17 and above = UNACCEPTABLE
Likelihood (Probability and Frequency of Occurrence)			Consequence (Outcome or Severity of Occurrence)		
5	Certain	Common or repeating occurrence Consequence can reasonably be expected to occur in life of Project.	5	Severe	<ul style="list-style-type: none"> Major pollution incident causing significant and widespread damage or potential to health or the environment Persistent reduction in ecosystem function and value. Ongoing disruption and loss of protected species. Major prosecution likely, outcome in excess of \$500,000
4	Likely	Known to have occurred / “has happened” Conditions may allow the consequence to occur on the Project during its lifetime The event has occurred within the Business Unit within the previous 5 years.	4	Major	<ul style="list-style-type: none"> Significant widespread and persistent changes to habitat, species or environmental media Significant pollution incident causing damage or potential damage to health or the environment external to the site. Potential for prosecution. Potential outcome between \$50,000 - \$500,000 Numerous substantial complaints Actual material environmental harm
3	Possible	Could occur / “heard of it happening”	3	Moderate	<ul style="list-style-type: none"> Localised irreversible habitat loss or effects on habitat, species or environmental media Reportable incident to the relevant environmental regulator or other authority.



		Exceptional conditions may allow consequences to occur on the Project, or has occurred nationally within the Australian Business.			<ul style="list-style-type: none"> • Demonstrated breach of legislative, licence or guideline requirements. • Likely infringement notice or fine, potential for prosecution up to \$50,000. • Will cause complaints.
2	Unlikely	Not likely to occur Reasonable to expect that the consequence will not occur on the Project. Has occurred in industry but not in Business Unit.	2	Minor	<ul style="list-style-type: none"> • Localised degradation of habitat or short term impacts to habitat, species or environmental media. • Pollution incident that marginally exceeds licence conditions or guidelines for acceptable pollution. • Fine unlikely. • Potential for complaints.
1	Rare	Practically impossible Not known to have occurred in industry or unheard of.	1	Incidental	<ul style="list-style-type: none"> • Localised or short term effects on habitat, species or environmental media. • Fully contained on site and can be fully remediated. Little potential for fine or complaints. • Insignificant or trivial incident

Probability ► ▼Consequence	CERTAIN 5	LIKELY 4	POSSIBLE 3	UNLIKELY 2	RARE 1
5 – Severe	25	20	15	10	5
4 – Major	20	16	12	8	4
3 – Moderate	15	12	9	6	3
2 – Minor	10	8	6	4	2
1 – Incidental	5	4	3	2	1



Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
Air Quality									
General construction works; site establishment, excavations	Dust created during set up and operation of the compound.	3	2	6	Implement the CEMP and sub-plans Toolbox team on dust generation within the compound Wet down haul roads in dry conditions	2	2	4	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Exhaust from plant and equipment.	Emissions from plant resulting in air pollution.	2	2	4	Implement the CEMP and sub-plans Toolbox training on Dust and Air Quality Management. Well maintained plant/ equipment and pre-start checks and servicing. Non-complaint vehicles removed from site / repaired.	1	2	4	Review plant check list prior to operating on site. Undertake verification checks a required.
Noise									
Noise from general laydown use and works resulting in impact to residents.	Disturbance to residents or neighbouring businesses. Potential for complaints.	3	2	6	Implement the CEMP and sub-plans Toolbox training on noise generation – nearest residents are approximately 80m away on the other side of the rail line behind an embankment, so noise impacts are expected to be minimal. Industrial premises are located on Carrington Street approximately 120m from the site and noise from laydown activities and office use will not impact on these businesses. Respond to community enquiries and complaints in accordance with Sydney Metro requirements and Community & Stakeholder Manager (Sydney Metro), control measures as per Community Communication Strategy	2	2	4	Noise performance will be continually monitored as per the requirements of the Construction Noise and Vibration Management Plan. Although there is none expected, where high impact noise is required, it will be restricted to the conditions of EPL 21147 with respite periods implemented.



					(CCS) are to be implemented. Consult with the community in relation to upcoming activities that may result in concern. Monitor noise for compliance as the works progress at receiver locations. Provide periods of respite for high noise generating activities. Apply noise mitigation measures during entire project. Noise efficient equipment to be used on site.				
Noise from general laydown use and works required to be undertaken out of standard construction hours.	Disturbance to residents or neighbouring businesses with potential for complaints.	3	2	6	Implement the CEMP and sub-plans Toolbox training on noise generation Implement noise mitigation strategies for out of standard hours work. Monitor noise for compliance to project goals. Obtain Out of Hours Work Approval as required.	2	2	4	Noise performance will be continually monitored as per the requirements of the Construction Noise and Vibration Management Plan. Although there is none expected, if high impact noise is required, it will be restricted to the conditions of EPL 21147 with respite periods implemented.
Vibration									
Vibration intensive activities undertaken on the site such as vibratory rolling, etc.	Potential damage to Sydney Water heritage structures	1	1	1	No vibratory works will occur. Implement CEMP and sub-plans	1	1	1	N/A
Vibration intensive activities undertaken on the site such as	Potential damage to Sydney Water heritage structures Disruption, annoyance and nuisance to	1	1	1	No vibratory works will occur. Implement CEMP and sub-plans	1	1	1	N/A



vibratory rolling, etc.	residents. Potential damage to adjacent residential and commercial residences and structures. Disruption to businesses as a result of vibration nuisance								
Traffic & Access									
Road traffic crossing rail lines on access road	Collision with trains	3	5	15	Protection Officer to direct all traffic across rail lines Implement the Construction Traffic Management Plan (CTMP)	1	5	5	Sign in / sign out procedures Complete regular toolbox talks on how to minimise impacts in relation to traffic
General construction traffic disturbing public access between local roads.	Disturbance to local residents due to traffic resulting in complaints being made, limited access, and potential for delays at local road access points resulting in complaints.	3	2	6	Implement the Construction Traffic Management Plan (CTMP) Deliveries of plant and materials shall be undertaken outside of peak periods where possible Site vehicles shall be parked within the rail corridor and not affect public parking areas Scheduled road movements shall be minimised where possible Oversized deliveries would be undertaken in accordance with the requirements of NSW Police or Roads and Maritime Services. Approved Traffic Management Plans in consultation with relevant authorities. Approved access routes, detailed Traffic Control Plans. Clear notifications / signage. Any vehicles will obey the road rules, including restrictions around school zones. Where possible, vehicles movements will be	2	2	4	Complete regular toolbox talks on how to minimise impacts in relation to traffic. Undertake regular inspections of worksite and adjacent streets.



					<p>minimised during school zone restricted speed times.</p> <p>Vehicles will not park or idle within the school zone and will directly enter and leave site.</p>				
Management of heavy vehicles / access routes.	Complaints from sensitive receivers due to increased level and frequency of noise.	3	2	6	<p>Implement the Construction Traffic Management Plan (CTMP)</p> <p>Deliveries of plant and materials shall be undertaken outside of peak periods where possible</p> <p>Site vehicles shall be parked within the rail corridor and not affect public parking areas</p> <p>Scheduled road movements shall be minimised where possible</p> <p>Oversized deliveries would be undertaken in accordance with the requirements of NSW Police or Roads and Maritime Services.</p> <p>Designated access routes.</p> <p>Approved Traffic Management Plans.</p> <p>Community Notifications.</p> <p>Pedestrian management with traffic controller in place where required.</p>	2	2	4	<p>Complete regular toolbox talks on how to minimise impacts in relation to traffic.</p> <p>Permits from local council and/or RMS</p>
Landscaping, urban design and visual amenity									
Landscaping, urban design and visual amenity	<p>Surrounding aesthetic temporary altered during construction</p> <p>Lighting towers used during out of hours works may spill on nearby residents</p> <p>Post-construction surfaces</p>	2	3	6	<p>Implement the SMC Visual Amenity Management Plan</p> <p>The work area shall be maintained in an orderly manner</p> <p>Lighting required during night works shall be directed towards the work area and are from adjacent sensitive receivers</p> <p>There are no sensitive receivers with the line of sight to the laydown due to delineation by rail corridor and industrial buildings.</p>	1	3	3	<p>Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.</p>



					Any land disturbed for the works will be restored to its prior state or, where appropriate, restored to a state that is in line with the approved urban design				
Hazard and Risk									
Hazards and risk associated with works	Hazardous substances High risk works	3	2	6	Work in accordance with the Safety Management Plan and relevant sub-plans Develop a Safe Work Method Statement (SWMS) for high risk works, works with hazardous substances. An occupational hygienist is review and supervise works as required. All dangerous goods to be stored within an appropriate container as per the CEMP.	2	2	4	Toolbox workers on requirements Undertake regular inspections
Heritage									
Non-aboriginal heritage	Impacts to items and structures with heritage significance: <ul style="list-style-type: none">Sewage Pumping Station 271, chimney stack, and two storey residence located to the east of the proposed laydown location brick culvert on access track through heritage curtilage Impacts to areas of archaeological potential	1	3	3	Access through heritage curtilage is permitted under the Standard Exemptions of the Heritage Act, 1977 Laydown will occur outside the state heritage curtilage and will be temporary only. There are no vibratory works associated with the use of the laydown. JHLOR have not identified any structures or other items of heritage significance within the laydown area, including plants or trees. Implement the Sydney Metro Unexpected Heritage Finds Procedure noting no excavation is proposed, but minor scrapping could be associated with stabilising access road	1	3	3	Complete Standard Heritage Exemption Form prior to works commencing 20mm thick steel plates must be provided to bridge over the buried services as shown on the Asset Protection Plan in Appendix A. The steel plates should be extended at least 1.5m on either side of the buried services. Toolbox workers on requirements Undertake regular inspections
Aboriginal heritage	Impacts to areas of archaeological potential	1	3	3	Implement the Sydney Metro Unexpected Heritage Finds Procedure noting no excavation is proposed, but minor scrapping	1	3	3	Toolbox workers on requirements



					could be associated with stabilising access road There are no registered Aboriginal Heritage items in proximity to the works and no excavation works would be required for the laydown.				Undertake regular inspections
Biodiversity									
Flora	Unauthorised clearing of vegetation Impacting on threatened species, threatened vegetation communities or fauna habitat	3	3	9	Identify all sensitive areas, sign post and demarcate Establish tree protection zones Note: Tree removal is not part of the scope, however if required, the measures within the CEMP will be implemented including; • Update Tree Report • Implement the Vegetation Removal and Trimming Permit system • An ecologist is to undertake a pre-clearance survey of all vegetation to be removed. • An ecologist is to be present during the removal of native vegetation or fauna habitat. • Landowners consent required if tree removal is proposed	1	3	3	Toolbox workers on requirements Undertake regular inspections
Fauna	Impacting on fauna	2	3	6	Implements the measures within the Construction Environmental Management Plan Implement a Vegetation Removal and Trimming Permit system Identify all sensitive areas, sign post and demarcate Establish tree protection zones An ecologist is to undertake a pre-clearance survey of all vegetation to be removed.	1	3	3	Toolbox workers on requirements Undertake regular inspections



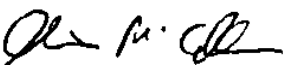
					An ecologist is to be present during the removal of native vegetation or fauna habitat.				
Soils and Contamination									
Soils and contamination	Encountering contamination Acid Sulphate Soils	3	4	12	Minimal excavation is expected – Works to occur in accordance with Construction Soil and Water Management Plan All waste is to be classified in Accordance with the Waste Classification Guidelines (NSW EPA, 2014) Acid Sulphate Soils are to be managed in accordance with the Acid Sulfate Soil Manual (ASSMAC, 1998) An occupational hygienist is to provide guidance and, where appropriate, supervise works with contaminated soils or substances	1	4	4	Toolbox workers on requirements Undertake regular inspections
Flooding									
Flooding	Flood waters impacting the laydown. Flood catchment volume reduced	1	2	2	Sydney Metro Flood modelling indicates that the proposed area is not subject to flooding in the 1%AEP event. The nearby channel has sufficient capacity. Items are not to be stored within overland flow paths such as drains and swales	1	2	2	
Community and Stakeholders									
Community	Impacts to the local community	1	2	2	The land is not publicly accessible. Use of the land will have no impact on the community. Additional traffic will be managed as per the CTMP and measures listed within the Traffic Aspect above	1	2	2	




Stakeholders	Impacts to Sydney Trains and Sydney Water operations	3	2	6	The area is owned by Sydney Water zoned SP2 for railways. The area will be used with approval with Sydney Water including any other measures agreed to mitigate impacts to Sydney Water operations A Rail Protection Officer will be used when crossing the railway line to prevent impact on railway operations	1	2	2	
Erosion and Sediment Control									
Erosion and sediment control	Eroded materials entering local waterways Impacts to water quality within local waterways	3	2	6	Implement CEMP and sub-plans Erosion and Sediment Control Plan to be prepared tool boxed to team and implemented	2	2	4	Inspections Pre-rainfall inspections
Waste									
Waste Spoil	Incorrect disposal	3	2	6	Implement CEMP and sub-plans Classify waste in accordance with NSW EPA Waste Classification Guidelines, 2014	2	2	4	Inspections
Waste Materials	Poor housekeeping Waste storage	3	2	6	Implement CEMP and sub-plans Supply appropriate number of bins Segregate waste as appropriate, unless waste contractor utilises a sorting facility	2	2	4	Inspections



3. Endorsement

Prepared by	Chris McCallum
Signature	
Date	22/09/2023

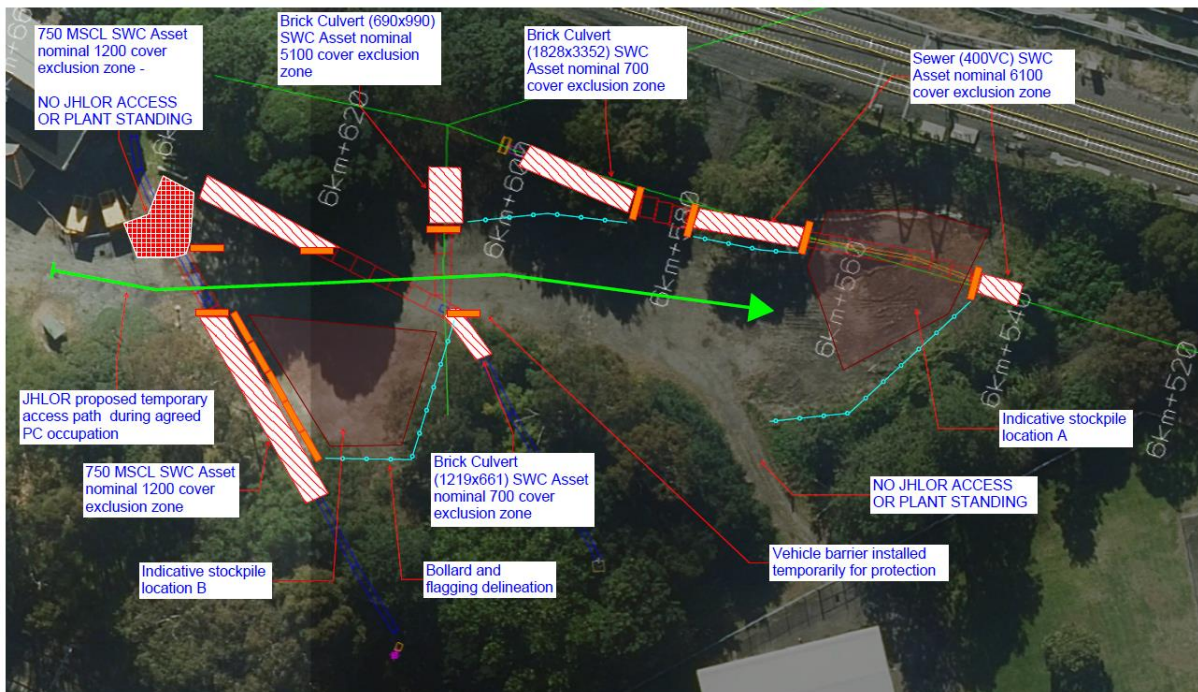
Environmental Representative Endorsement	Jo Heltborg
Signature	
Date	22/9/2023
Details of any conditional approval	
<p>JHLOR to comply with any Sydney Water requirements as landowner, and to obtain landowners consent for works / laydown outside the project boundary.</p> <p>Compliance required with all heritage provisions for works within and adjacent to heritage structures and curtilage.</p>	

Appendix A – Site Layout and controls

Environmental Control Plan

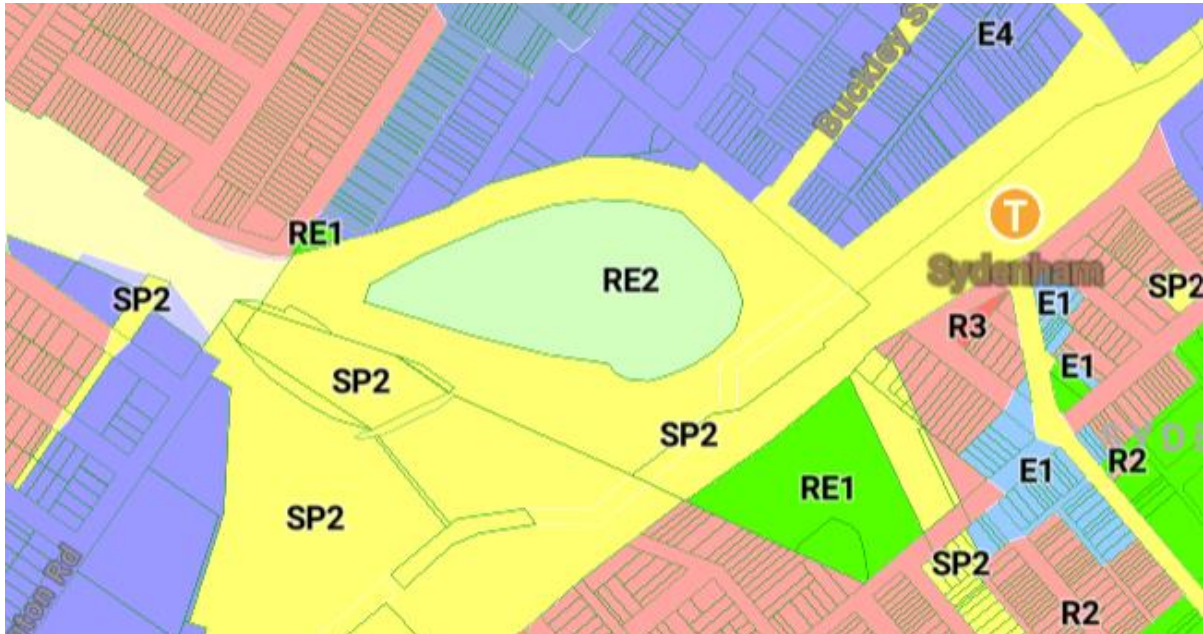


Site controls

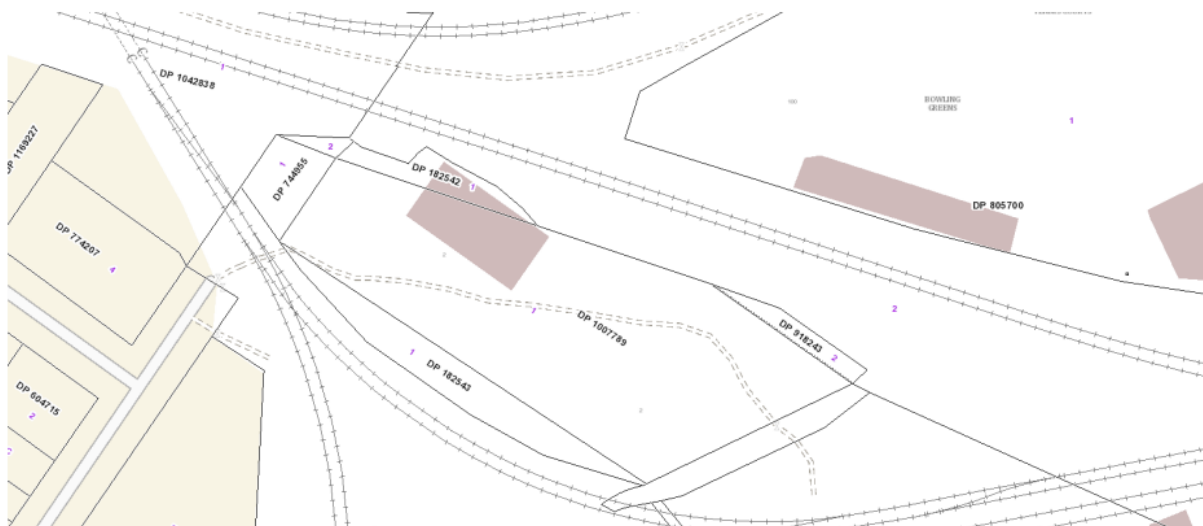


Appendix B – Supporting Documentation

Zoning Map



Lot and DP Map



LEP Heritage Layer





Stockpiles are to be located outside and to the west of heritage area 167.



Appendix C – Landowner’s Consent

Handover Sydney Metro Principal Contractors Form

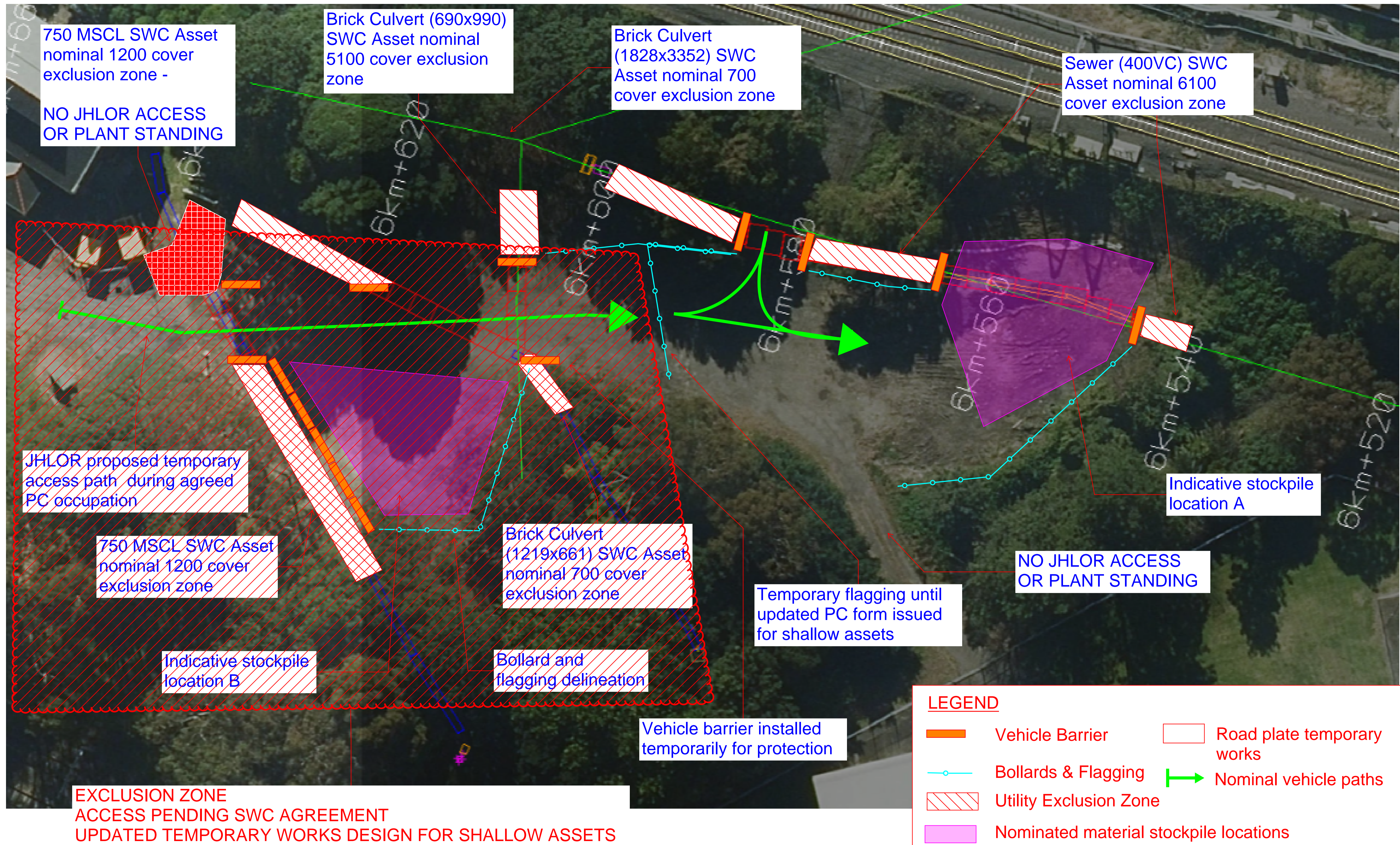
Principal Contractor A who relinquishes control:	JOHN HOLLAND PTY LTD and LAING O'ROURKE AUSTRALIA CONSTRUCTION PTY LTD (together JHLORJV)	
Project name:	Southwest Metro Corridor Works (SWMC)	
Construction site address:	Carrington Rd, Marrickville for September Shut 2023. Partial hand over of PC Areas, shared access agreed and site coordination	
Site coordinates/limits:	Please see attached Sketch	
Date of inspection:		
List of site hazards/risks:	As per Standard Rail Corridor Risks including LPA Sydney Water Corporation (SWC) existing buried assets cover and condition compliance	
Reason why site hazards/risks are not rectified:	N/A Refer Above	
Principal Contractor A rep (name):	Signature:	Date:
JOHN HOLLAND PTY LTD and LAING O'ROURKE AUSTRALIA CONSTRUCTION PTY LTD (together JHLORJV) Name: Badar Asif – Interface Manager		22/09/2023
Site hazards/risks rectified by PC A?	Yes No N/A As Per attached Risk Assessment If Yes, proceed to PC B sign off below.	
Principal Contractor B rep (name):	Signature:	Date:
Sydney Water Corporation Name: Hanka Shabilla - Sydney Metro Account Manager		22/09/2023
Date of inspection:		
PC B agrees with site hazards/risks list from PC A?	Yes No If No, Why not? N/A Standard Risks	
Site hazards/risks rectified by PC A?	Yes No N/A	
Construction site handover accepted by PC B:	Yes No	
Commencement date of handover:	23/09/2023 – 06:00hrs	
PC end date on site:	24/11/2023 – 18:00hrs	

PC conditions:

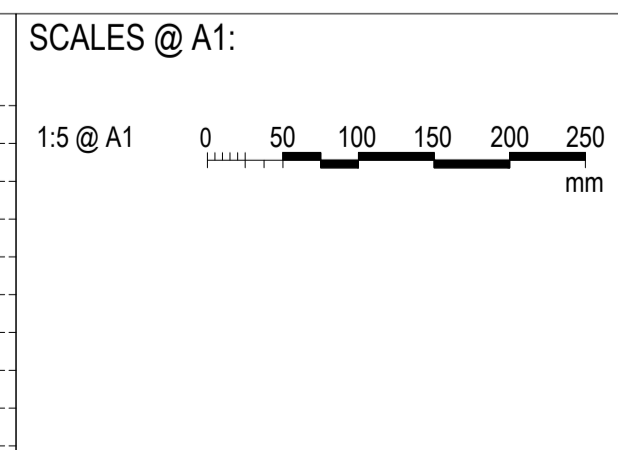
- Erosion and sediment controls suitable for the proposed work in the area are to be put in place prior to use of the area in accordance with the requirements of the Planning Approval. This includes stabilised access where not already in place. Access points are to be maintained during use of the area by Downer
- All waste is to be removed from the area prior to handback – if there is pre-existing waste in the worksite JHLOR are to take photos prior to their works commencing
- The area is to be returned to its pre-existing condition prior to handback.
- Shared Access as per agreements listed in the below table.
- **Any damage caused by plant or stockpiles to existing Sydney Water Corporation (SWC) Assets will need to be rectified by the responsible Contractor.**

Agreed Access and JHLOR JV Program:

POSSESSION No.	SCOPE	SPECIFICS	JHLOR ACCESS REQUIREMENTS	SWC COMMENTS
WK01-WE03 (23/09/2023 to 05/10/2023)	Sydney Metro track and security fence civil works	Site access and stockpiling for spoil & import materials (ballast, DGB) for fencing and track works. <u>Refer to the markup attached.</u> Dayshifts commencing from 23/09/23. Target stockpile material removal planned for completion by 24/11/23	Access/Egress for a hi-rail plant will be via temporary track ramp and fence opening. Uninterrupted access to all Sydney Water Corporation (SWC) assets/compounds. Access to ARTC / Sydney Trains assets will be maintained clear at all times.	Plant spotters to be in place at all times where vehicle movements occur to ensure existing aerial cables are free from damage & SADs are maintained & vehicle movements over unprotected SWC assets do not occur Condition inspections to be complete by the following dates. 1. Prior to 23/12/2023 2. Prior to conclusion of Lease (April 2023) Form to be resubmitted prior to any of Part B access and stockpile locations being used by JHLOR. Resubmission to include update to Temporary Works for shallow assets noted in hatched section on page 3



EXTERNAL REFERENCE FILES:
XXXXX



ISSUE STATUS:

- CONCEPTUAL
- FOR APPROVAL
- FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DR'N	DESN ENG	CHK
P1	29.09.2022	CONCEPTUAL ISSUE			

ON BEHALF OF:

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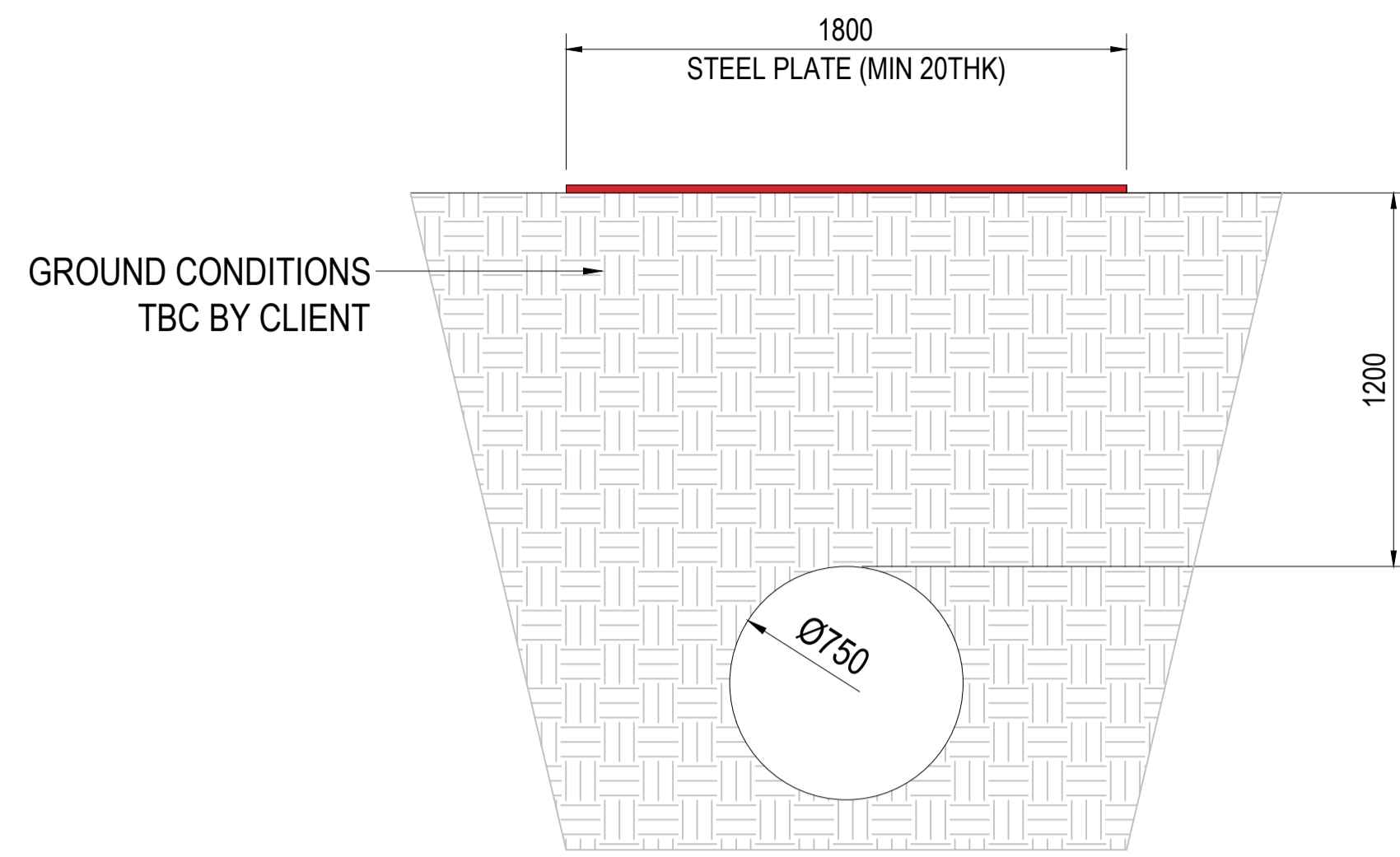
PROJECT:
SWMC MARRICKVILLE CARRINGTON ROAD

DRAWING TITLE:
COMPOUND SERVICE PROTECTION MEASURES
SITE PLAN

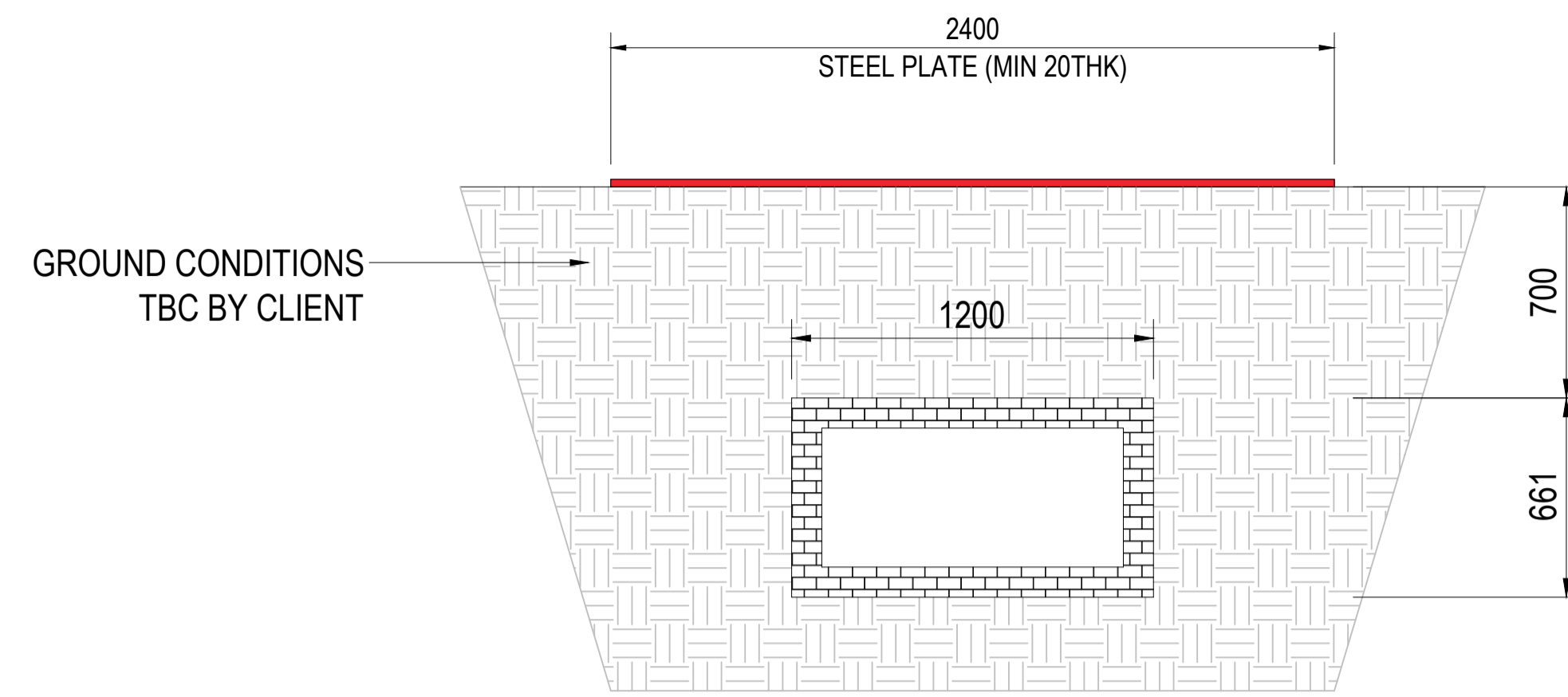
DRAWN:	DESIGNER:	DRG No:	REV
SCALE: NTS	DATE: 14/09/2023	TWDB688 GA-01	P2

A1 ORIGINAL
841mm x 594mm Sheet (A1)

REFER TO DRAWING No. GN-01 FOR GENERAL NOTES & SPECIFICATIONS.

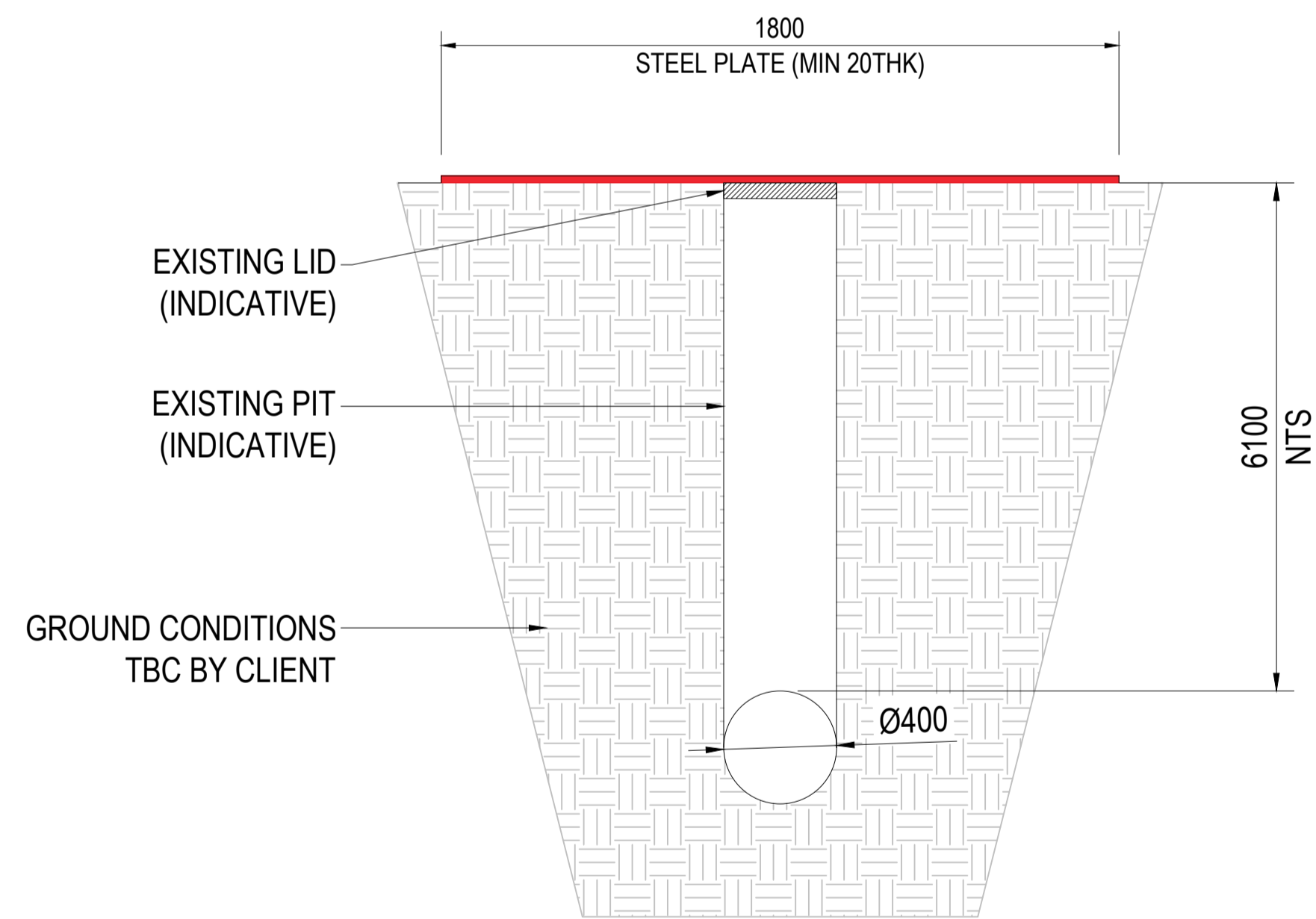


750 MSCL STEEL PLATE PROTECTION SYSTEM
SCALE 1:20

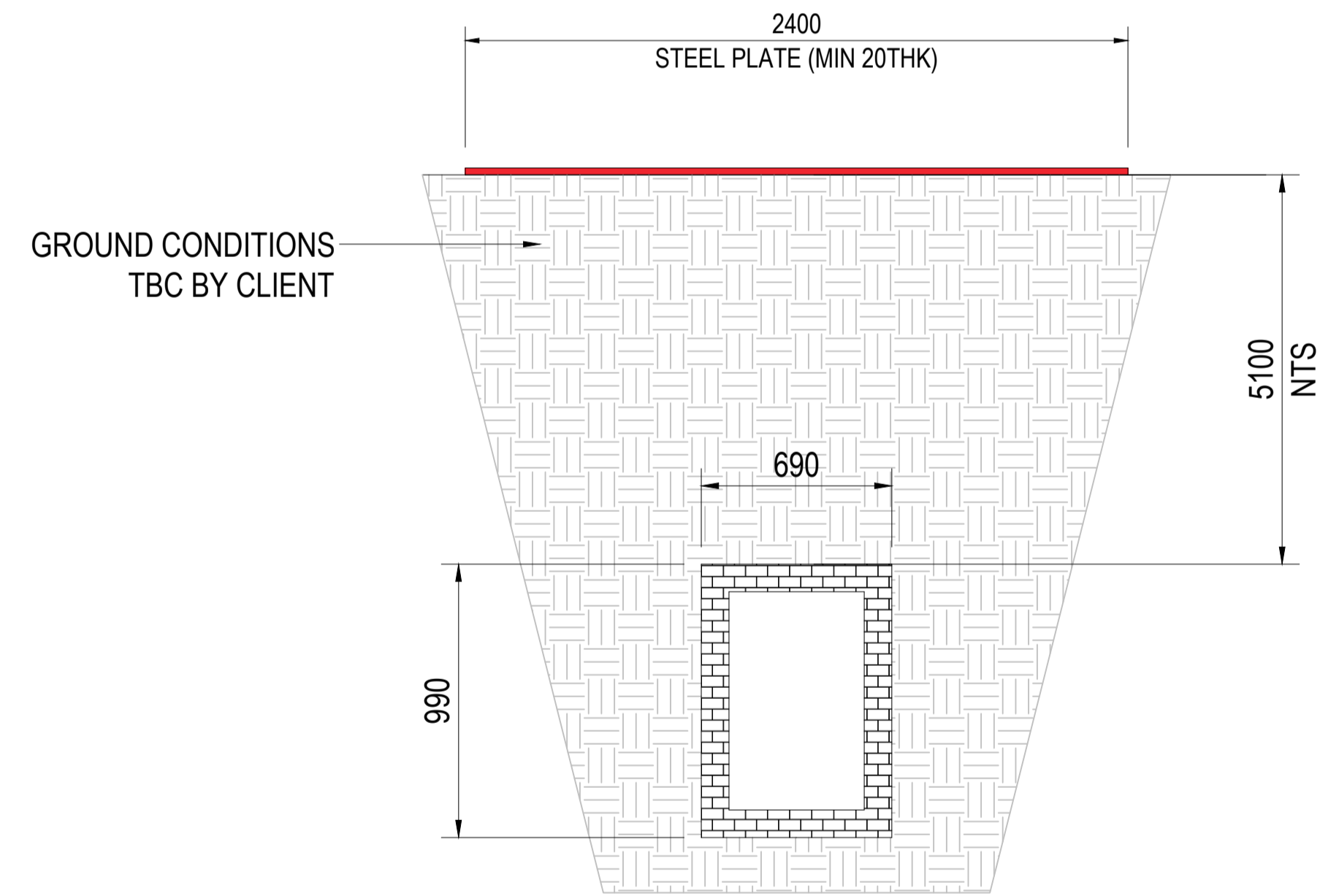


1219x661 BRICK CULVERT STEEL PLATE PROTECTION SYSTEM
SCALE 1:20

Pending updated SWC agreement



400VC SEWER STEEL PLATE PROTECTION SYSTEM
SCALE 1:20



690x990 BRICK CULVERT STEEL PLATE PROTECTION SYSTEM
SCALE 1:20

REFER TO DRAWING No. GN-01 FOR GENERAL NOTES & SPECIFICATIONS.

EXTERNAL REFERENCE FILES: XXXXX	SCALES @ A1: 1:5 @ A1	ISSUE STATUS: CONCEPTUAL FOR APPROVAL FOR CONSTRUCTION	ON BEHALF OF:			 RIDDWOOD CONSULTING ENGINEERS	PROJECT: SWMC MARRICKVILLE CARRINGTON ROAD																													
					DRAWING TITLE: COMPOUND SERVICE PROTECTION MEASURES SHOWING KEY SECTIONS																															
			<table border="1"> <tr> <td>P1</td> <td>15.11.2022</td> <td>APPROVAL ISSUE</td> <td>JS</td> <td>JS</td> <td>IM</td> </tr> <tr> <td>P1</td> <td>29.09.2022</td> <td>CONCEPTUAL ISSUE</td> <td>JS</td> <td>JS</td> <td>IM</td> </tr> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> <th>DRN</th> <th>DES'N</th> <th>CHK</th> </tr> </table>	P1	15.11.2022	APPROVAL ISSUE	JS	JS	IM	P1	29.09.2022	CONCEPTUAL ISSUE	JS	JS	IM	REV	DATE	DESCRIPTION	DRN	DES'N	CHK			<table border="1"> <tr> <td>DRAWN:</td> <td>JS</td> <td>DESIGNER:</td> <td>JS</td> <td>DRG No:</td> <td>REV</td> </tr> <tr> <td>SCALE:</td> <td>NTS</td> <td>DATE:</td> <td>15.11.2022</td> <td>TW220932-DT-01</td> <td>P2</td> </tr> </table>	DRAWN:	JS	DESIGNER:	JS	DRG No:	REV	SCALE:	NTS	DATE:	15.11.2022	TW220932-DT-01	P2
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Project	SWMC Marrickville Carrington Road	Eng Check.	JS	IM
Client	JHLOR JV	Rev.	A	
Description	TWDB 633 Underground Services Protection Measures	Date	10.11.2022	
Subject	Buried Service Assessment	Job No.	TW220932	

Section

Ref. / Results

1.0 Description

The client requires to operate construction plant above buried services and has requested a structural assessment is carried out to confirm if any protection measures are required to protect the services from being overloaded. The structural details (thickness, grade) of the underground services have not been provided, however they are located below an old car park. Therefore, it is assumed that they have sufficient capacity to safely carry typical vehicle loading (4.5t per wheel) dispersed through the soil.

2.0 Contract Pressure (top of services)

Soil Cover

750 MSCL	=	1.2	m
1219 x 661 brick culvert	=	0.7	m
690 x 990 brick sewer	=	5.3	m
400 VC sewer	=	6.1	m

Wheel Dimensions

Typical vehicle	w =	0.4	m
(Current Loadcase)	b =	0.2	m

Volvo Excavator	w =	0.6	m
EC200EL or equivalent	b =	4.46	m

Semi Trailer	w =	0.4	m
	b =	0.2	m

Wheel Loading

Typical vehicle	=	45	kN
Volvo Excavator	=	120	kN
Semi trailer	=	60	kN

Table 1; pressure applied currently to the pipe crown when a typical vehicle travels at ground level

Load Model	Contact Area GL	Contract Pressure GL	Contact Area Pipe Crown	Contact Pressure Pipe Crown
	m2	kPa	m2	kPa
750 MSCL	0.08	563	2.83	23.84
1219 x 661 brick culvert	0.08	563	1.22	55.40
690 x 990 brick sewer	0.08	563	41.21	1.64
400 VC sewer	0.08	563	53.92	1.25

Project	SWMC Marrickville Carrington Road	Eng Check.	JS	IM
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Section

Ref. / Results

Table 2; pressure applied to the pipe crown when a 20t excavator travels at ground level

Load Model	Contact Area GL	Contract Pressure GL	Contact Area Pipe Crown	Contact Pressure Pipe Crown
	m2	kPa	m2	kPa
750 MSCL cover	2.676	44.84	11.61	15.51
1219 x 661 brick culvert	2.676	44.84	7.42	24.26
690 x 990 brick sewer	2.676	44.84	71.10	2.53
400 VC sewer	2.676	44.84	87.93	2.05

Table 2; pressure applied to the pipe crown when a semi-trailor travels at ground level

Load Model	Contact Area GL	Contract Pressure GL	Contact Area Pipe Crown	Contact Pressure Pipe Crown
	m2	kPa	m2	kPa
750 MSCL cover	0.08	750	2.83	31.79
1219 x 661 brick culvert	0.08	750	1.22	73.87
690 x 990 brick sewer	0.08	750	41.21	2.18
400 VC sewer	0.08	750	53.92	1.67

The calculated pressure on the buried services due to the operation of the construction plant is exceeding the pressure due to the movements of a typical vehicle. Therefore, it is suggested to install protection measures in the form of steel plates to spread the loads further and reduce the pressure at the crown of the services.

Provide 1.8m wide by 2m.4m long steel plates to spread the load $w = 1.5 \text{ m}$
 at an area of AxB $b = 2.0 \text{ m}$

Load Model	Contact Area	Contract Pressure GL	Contact Area BGL on service	Contact Pressure BGL
	m2	kPa	m2	kPa
1219 x 661 brick culvert cover	3.00	750	6.48	28

This value is less than the currently applied pressure of 55.4kPa -> 2.0 safety factor

3.0 Baseplate details

Target Pressure under plate = 28 kPa

Foundation bearing strength

$yc = 1.5$

The plate is required to spread the load to a distance equal to "c":

$$c = 800$$

$$tP \geq c \left(\frac{3 \times 0.6 \times fcu}{Pyp} \right)^{0.5}$$

$$20\text{mm} \geq 800 \left(\frac{3 \times 0.6 \times 27.8}{250000} \right)^{0.5} = 11.31\text{mm}$$

OK

Required plate thickness 11.3mm -> provide 20mm thick plates.

Site Condition Records (Pre-occupation)

SEE PAGE OVER

Carrington Rd

DSR

DGB Load out and site cleanup



15th May, 2023, 8:50:09 AM
3-5 Carrington Road

EXAMPLE ONLY



Captured on 15/05/2023, 08:50 by Richard Miller
SSJ Main Team

Carrington Rd

DSR

DGB Load out and site cleanup



15th May 2023 8:50:00 AM
3-5 Carrington Road

Captured on 15/05/2023, 08:50 by Richard Miller
SSJ Main Team



Carrington Rd

DSR

DGB Load out and site cleanup



15th May 2023 8:49:53 AM
13-5 Carrington Road

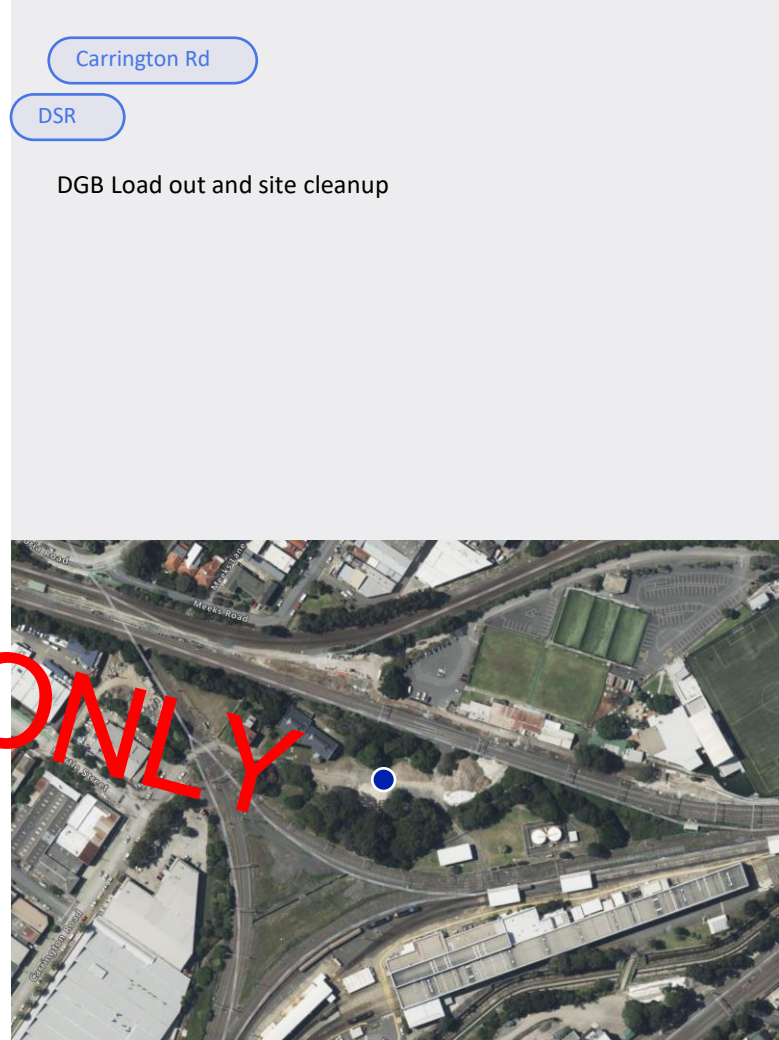


Captured on 15/05/2023, 08:49 by Richard Miller
SSJ Main Team



EXAMPLE ONLY

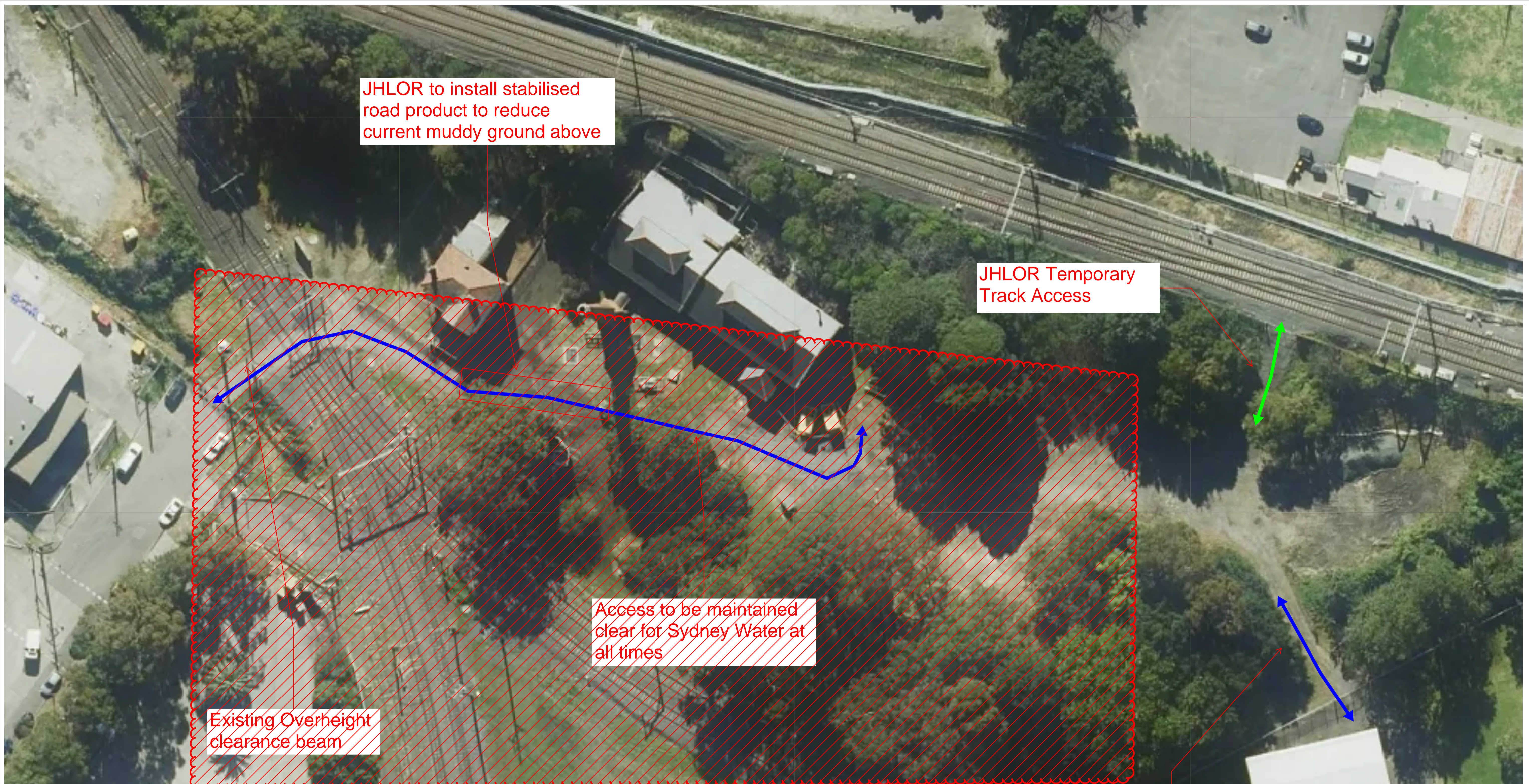
Captured on 15/05/2023, 08:49 by Richard Miller
SSJ Main Team



PC Areas and Gate Locations:

Green – JHLOR JV PC

Dark Blue – SWC / JHLOR PC (shared between JHLOR JV & SWC)



JHLOR to install stabilised road product to reduce current muddy ground above

JHLOR Temporary Track Access

Existing Overheight clearance beam

Access to be maintained clear for Sydney Water at all times

Access to be maintained clear for Sydney Water or others at all times

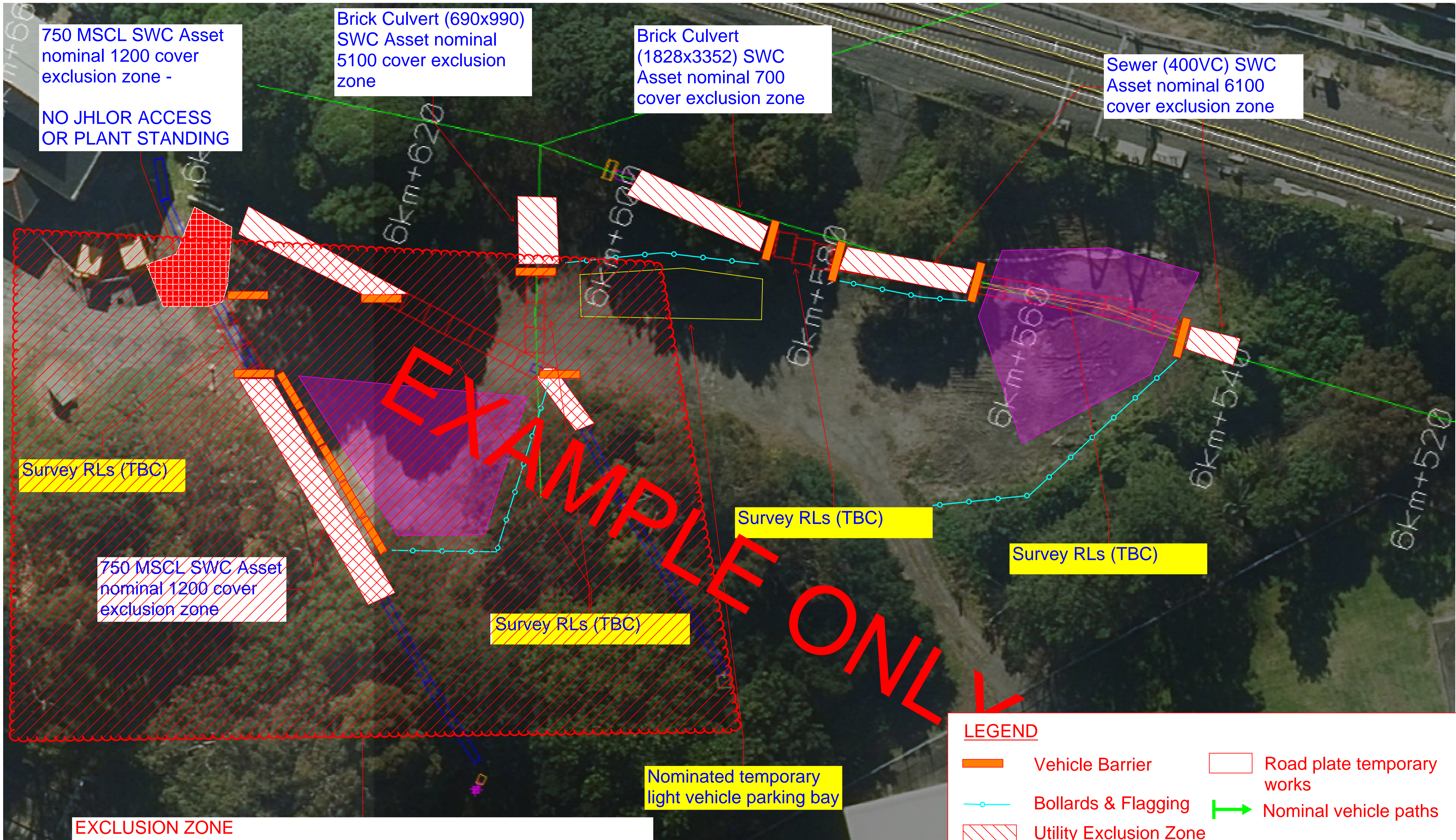
**EXCLUSION ZONE
ACCESS PENDING SWC AGREEMENT
UPDATED TEMPORARY WORKS DESIGN FOR SHALLOW ASSETS**

REFER TO DRAWING No. GN-01 FOR GENERAL NOTES & SPECIFICATIONS.

EXTERNAL REFERENCE FILES: XXXXX	SCALES @ A1: 1:5 @ A1	ISSUE STATUS: <input type="radio"/> CONCEPTUAL <input checked="" type="radio"/> FOR APPROVAL <input type="radio"/> FOR CONSTRUCTION	ON BEHALF OF:			PROJECT: SWMC MARRICKVILLE CARRINGTON ROAD																		
					DRAWING TITLE: COMPOUND SERVICE PROTECTION MEASURES SITE PLAN																			
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Survey Records (Pre-occupation)

SEE PAGE OVER



750 MSCL SWC Asset nominal 1200 cover exclusion zone -
NO JHLOR ACCESS OR PLANT STANDING

Brick Culvert (690x990) SWC Asset nominal 5100 cover exclusion zone

Brick Culvert (1828x3352) SWC Asset nominal 700 cover exclusion zone

Sewer (400VC) SWC Asset nominal 6100 cover exclusion zone

Survey RLs (TBC)

750 MSCL SWC Asset nominal 1200 cover exclusion zone

Survey RLs (TBC)

Survey RLs (TBC)

Survey RLs (TBC)

Nominated temporary light vehicle parking bay

**EXCLUSION ZONE
ACCESS PENDING SWC AGREEMENT
UPDATED TEMPORARY WORKS DESIGN FOR SHALLOW ASSETS**

LEGEND

- Vehicle Barrier
- Utility Exclusion Zone
- Nominated material stockpile locations
- Road plate temporary works
- Bollards & Flagging
- Nominal vehicle paths

EXTERNAL REFERENCE FILES: XXXXX	SCALES @ A1: 1:5 @ A1 	ISSUE STATUS: 		ON BEHALF OF: 	PROJECT: SWMC MARRICKVILLE CARRINGTON ROAD
					DRAWING TITLE: COMPOUND SERVICE PROTECTION MEASURES SITE PLAN
					DRAWN: NTS DESIGNER: DRG No: REV
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REFER TO DRAWING No. GN-01 FOR GENERAL NOTES & SPECIFICATIONS.

Site Condition Records (Post-occupation) Handback

SEE PAGE OVER

Survey Records (Post-occupation)

SEE PAGE OVER

Handback Acceptance Record

Corrective Action/s	PC Representative:	Date:

Principal Contractor A rep (name):	Signature:	Date:
JOHN HOLLAND PTY LTD and LAING O'ROURKE AUSTRALIA CONSTRUCTION PTY LTD (together JHLORJV) Name: Badar Asif – Interface Manager		20/09/2023
Site hazards/risks rectified by PC A?	Yes No N/A As Per attached Risk Assessment If Yes, proceed to PC B sign off below.	
Principal Contractor B rep (name):	Signature:	Date:
Sydney Water Corporation Name:		
Date of inspection:		
PC B agrees with site hazards/risks list from PC A?	Yes No If No, Why not? N/A Standard Risks	
Site hazards/risks rectified by PC A?	Yes No N/A	
Construction site handover accepted by PC B:	Yes No	
Commencement date of handover:		
PC end date on site:		