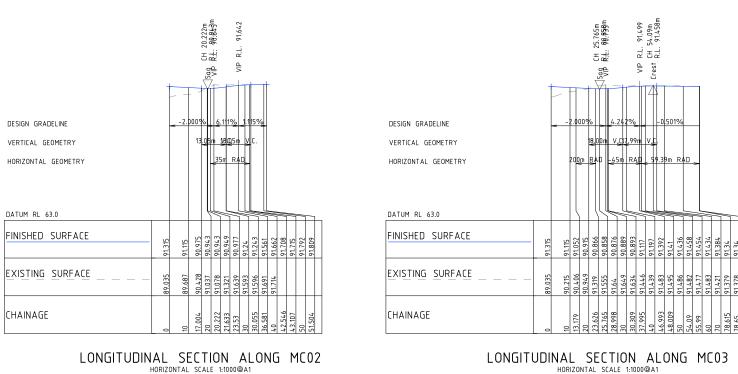


NL191366 **ROAD TYPICAL SECTIONS** C401-DA 6 DRAWING SHEET SIZE = A1

CIVIL ENGINEERING PACKAGE

# LONGITUDINAL SECTION ALONG MC01

HORIZONTAL SCALE 1:1000@A1 VERTICAL SCALE 1:400@A1



LONGITUDINAL SECTION ALONG MC03
HORIZONTAL SCALE 1:1000@A1

VERTICAL SCALE 1:400@A1

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DAT
1	ISSUED FOR DRAFT REVIEW	LS		CS	30.09.
2	ISSUED FOR REVIEW	LS		CS	09.11.2
3	ISSUED FOR SCHEMATIC DESIGN	LS		CS	29.01.
4	ISSUED FOR DRAFT SSDA	LS		CS	25.02.
5	ISSUED FOR DRAFT SSDA	LS		CS	09.03.
6	ISSUED FOR SSDA	LS		CS	31.03.

VERTICAL SCALE 1:400@A1





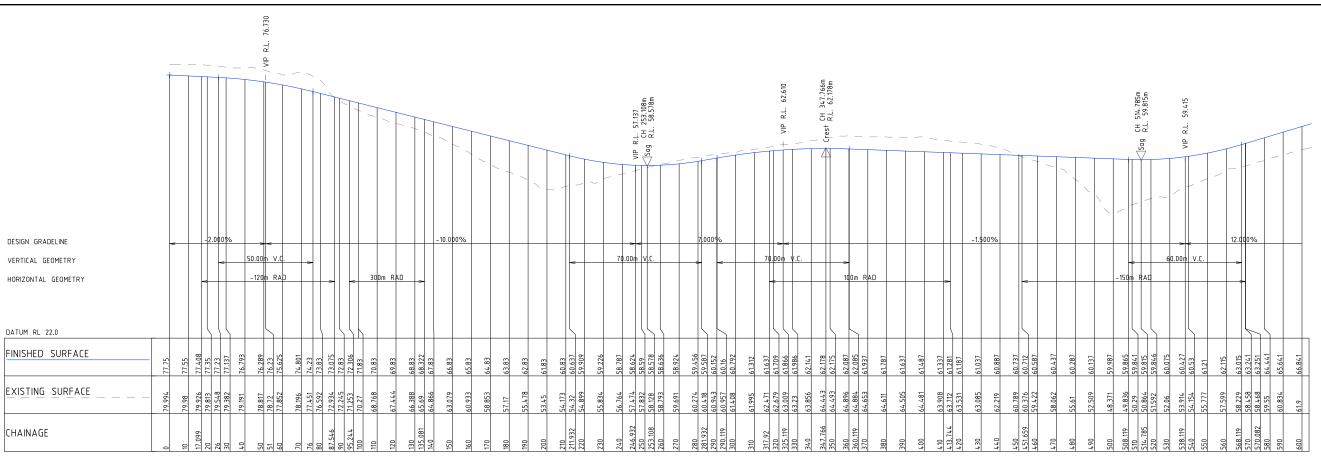


AND INNOVATION PRECINC
LOOKOUT ROAD, NEW
LAMBTON HEIGHTS N.S.W

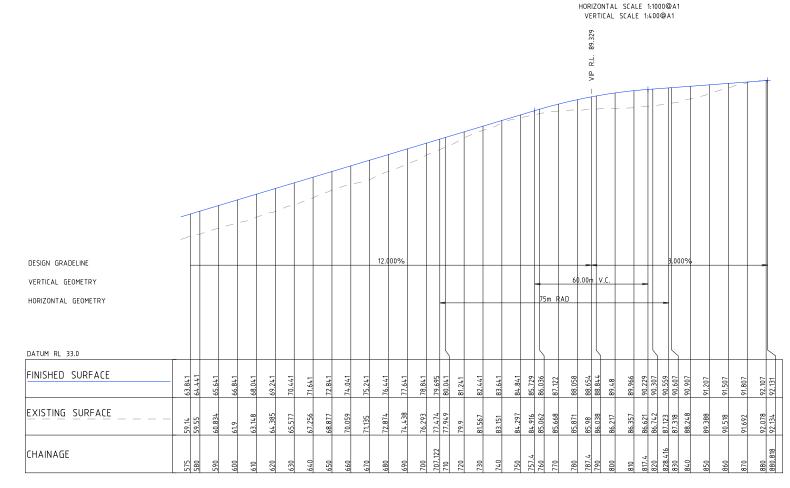
JOHN HUNTER HOSPITAL

AWING TITLE
CIVIL ENGINEERING PACKAGE
ROAD LONG SECTIONS
SHEET 1

JOB NUMBER
JOB NUMBER <b>NL191366</b>



# LONGITUDINAL SECTION ALONG MC04 HORIZONTAL SCALE 1:1000@A1



REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	ſ
1	ISSUED FOR DRAFT REVIEW	LS		CS	30.09.20	l
2	ISSUED FOR REVIEW	LS		CS	09.11.20	l
3	ISSUED FOR SCHEMATIC DESIGN	LS		CS	29.01.21	l
4	ISSUED FOR DRAFT SSDA	LS		CS	25.02.21	ĺ
5	ISSUED FOR DRAFT SSDA	LS		CS	09.03.21	t
6	ISSUED FOR SSDA	LS		CS	31.03.21	ı



LONGETHUDINAL SECTION ALONG MC044 BV THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD



Suite 4, 215 Pacific Hwy, Charlestown NSW 2290
P.O. Box 180, Charlestown NSW 2290
Ph (02) 4943 1777 Fax (02) 4943 1577
Email newcastle@northrop.com.au ABN 81 094 433 100

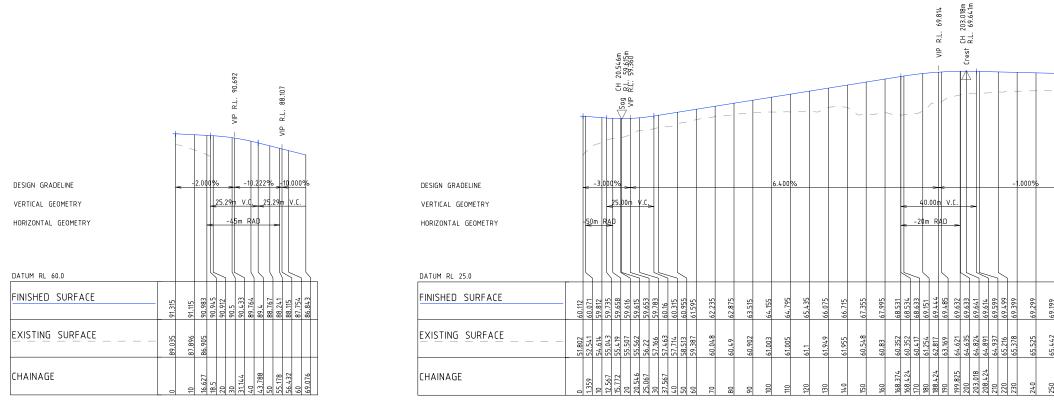
JOHN HUNTER HOSPITAL AND INNOVATION PRECINCT LOOKOUT ROAD, NEW LAMBTON HEIGHTS N.S.W

CIVIL ENGINEERING PACKAGE ROAD LONG SECTIONS SHEET 2

JOB NUMBER	
NL	191366

C502-DA

6 DRAWING SHEET SIZE = A1

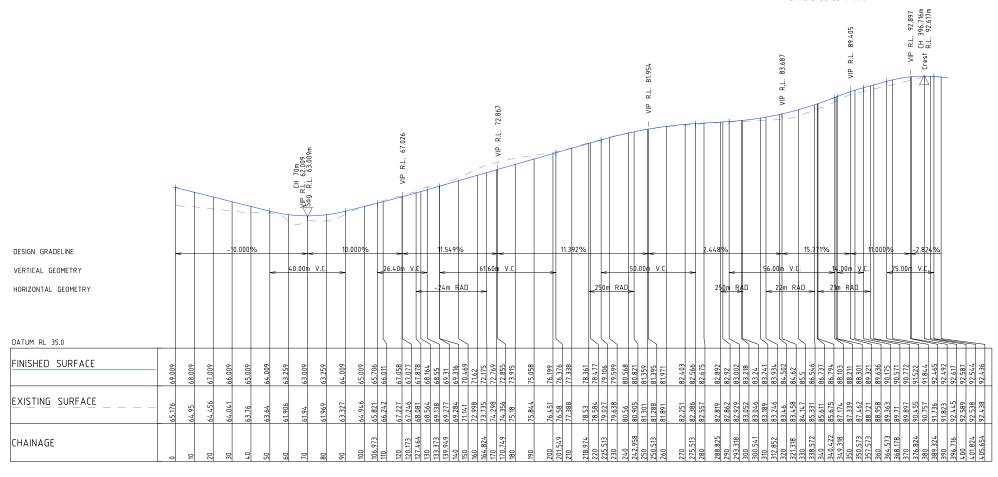


# LONGITUDINAL SECTION ALONG MC05

HORIZONTAL SCALE 1:1000@A1 VERTICAL SCALE 1:400@A1

## LONGITUDINAL SECTION ALONG MC09

HORIZONTAL SCALE 1:1000@A1 VERTICAL SCALE 1:400@A1



## LONGITUDINAL SECTION ALONG MCT01

HORIZONTAL SCALE 1:1000@A1 VERTICAL SCALE 1:400@A1

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AND INNOVATION PRECINCT LOOKOUT ROAD, NEW LAMBTON HEIGHTS N.S.W

JOHN HUNTER HOSPITAL

CIVIL ENGINEERING PACKAGE
ROAD LONG SECTIONS
SHEET 3

JOB NUMBER
NL191366

C503-DA

503-DA 6

DRAWING SHEET SIZE = A1





# MUSIC-link Report

**Project Details Company Details** 

**JHHIP** Project:

Report Export Date: 28/09/2020 Contact: R Jeans

Catchment Name: NL191366\_MUSIC DA [rev3-no RWT] Address: Level 1 215 Pacific Highway Charlestown NSW 2290

Catchment Area: 3.833ha Impervious Area\*: 52.63%

Rainfall Station: 61078 WILLIAMTOWN

Modelling Time-step: 6 Minutes

**Modelling Period:** 1/01/1995 - 31/12/2008 11:54:00 PM

Mean Annual Rainfall: 1125mm Evapotranspiration: 1735mm **MUSIC Version:** 6.3.0 **MUSIC-link data Version:** 6.33 Study Area: Newcastle Scenario: Newcastle Company: Northrop Consulting Engineers

(02) 4943 1777 Phone:

Email: rjeans@northrop.com.au

<sup>\*</sup> takes into account area from all source nodes that link to the chosen reporting node, excluding Import Data Nodes

Treatment Train Effectiveness		Treatment Nodes		Source Nodes	
Node: Receiving Node	Reduction	Node Type	Number	Node Type	Number
Row	3.63%	Bio Retention Node	4	Urban Source Node	6
TSS	89.5%	Buffer Node	1		
TP	65.8%				
TN	61%				
<b>GP</b>	100%				

#### Comments





Node Type	Node Name	Parameter	Min	Max	Actua	
Bio	Bioretention	Hi-flow bypass rate (cum/sec)	None	None	100	
Bio	Bioretention	Hi-flow bypass rate (cum/sec)	None	None	100	
Bio	Bioretention	Hi-flow bypass rate (cum/sec)	None	None	100	
Bio	Bioretention	Hi-flow bypass rate (cum/sec)	None	None	100	
Bio	Bioretention	PET Scaling Factor	2.1	2.1	2.1	
Bio	Bioretention	PET Scaling Factor	2.1	2.1	2.1	
Bio	Bioretention	PET Scaling Factor	2.1	2.1	2.1	
Bio	Bioretention	PET Scaling Factor	2.1	2.1	2.1	
Buffer	Buffer	Proportion of upstream impervious area treated	None	None	0.5	
Receiving	Receiving Node	% Load Reduction	None	None	3.63	
Receiving	Receiving Node	GP % Load Reduction	90	None	100	
Receiving	Receiving Node	TN % Load Reduction	45	None	61	
Receiving	Receiving Node	TP % Load Reduction	65	None	65.8	
Receiving	Receiving Node	TSS % Load Reduction	85	None	89.5	
Jrban	Copy of Urban	Area Impervious (ha)	None	None	0.586	
Urban	Copy of Urban	Area Pervious (ha)	None	None	0	
Urban	Copy of Urban	Total Area (ha)	None	None	0.586	
Jrban	Main Building External Area	Area Impervious (ha)	None	None	0.436	
Urban	Main Building External Area	Area Pervious (ha)	None	None	0.660	
Urban	Main Building External Area	Total Area (ha)	None	None	1.097	
Urban	North Road	Area Impervious (ha)	None	None	0.606	
Urban	North Road	Area Pervious (ha)	None	None	0.874	
Urban	North Road	Total Area (ha)	None	None	1.481	
Urban	Roof	Area Impervious (ha)	None	None	0.974	
Urban	Roof	Area Pervious (ha)	None	None	0	
Urban	Roof	Total Area (ha)	None	None	0.974	
Urban	Urban	Area Impervious (ha)	None	None	0.522	
Jrban	Urban	Area Pervious (ha)	None	None	0	
Jrban	Urban	Total Area (ha)	None	None	0.522	
Jrban	Urban Bypass	Area Impervious (ha)	None	None	0	
Urban	Urban Bypass	Area Pervious (ha)	None	None	0.28	
Urban	Urban Bypass	Total Area (ha)	None	None	0.281	

Only certain parameters are reported when they pass validation









# MUSIC-link Report

Project Details Company Details

Project: JHHIP Company: Northrop Consulting Engineers

**Report Export Date**: 28/09/2020 **Contact**: R Jeans

Catchment Name: NL191366\_MUSIC DA[rev3-no RWT] Address: Level 1 215 Pacific Highway Charlestown NSW 2290

 Catchment Area:
 0.586ha
 Phone:
 (02) 4943 1777

 Impervious Area\*:
 100%
 Email:
 rjeans@northrop.com.au

**Rainfall Station:** 61078 WLLIAMTOWN **Modelling Time-step:** 6 Mnutes

**Modelling Period:** 1/01/1995 - 31/12/2008 11:54:00 PM

Mean Annual Rainfall:1125mmEvapotranspiration:1735mmMUSIC Version:6.3.0MUSIC-link data Version:6.33Study Area:NewcastleScenario:Newcastle

\* takes into account area from all source nodes that link to the chosen reporting node, excluding Import Data Nodes

Treatment Train Effectiveness		Treatment Nodes		Source Nodes	
Node: Junction	Reduction	Node Type	Number	Node Type	Number
Flow	1.38%	Bio Retention Node	4	Urban Source Node	6
TSS	86.1%	Buffer Node	1		
TP	73.9%				
TN	50.3%				
GP	100%				

#### Comments





Node Type	Node Name	Parameter	Min	Max	Actua	
Bio	Bioretention	Hi-flow bypass rate (cum/sec)	None	None	100	
Bio	Bioretention	Hi-flow bypass rate (cum/sec)	None	None	100	
Bio	Bioretention	Hi-flow bypass rate (cum/sec)	None	None	100	
Bio	Bioretention	Hi-flow bypass rate (cum/sec)	None	None	100	
Bio	Bioretention	PET Scaling Factor	2.1	2.1	2.1	
Bio	Bioretention	PET Scaling Factor	2.1	2.1	2.1	
Bio	Bioretention	PET Scaling Factor	2.1	2.1	2.1	
Bio	Bioretention	PET Scaling Factor	2.1	2.1	2.1	
Buffer	Buffer	Proportion of upstream impervious area treated	None	None	0.5	
Receiving	Receiving Node	% Load Reduction	None	None	3.63	
Receiving	Receiving Node	GP % Load Reduction	90	None	100	
Receiving	Receiving Node	TN % Load Reduction	45	None	61	
Receiving	Receiving Node	TP % Load Reduction	65	None	65.8	
Receiving	Receiving Node	TSS % Load Reduction	85	None	89.5	
Jrban	Copy of Urban	Area Impervious (ha)	None	None	0.586	
Urban	Copy of Urban	Area Pervious (ha)	None	None	0	
Urban	Copy of Urban	Total Area (ha)	None	None	0.586	
Jrban	Main Building External Area	Area Impervious (ha)	None	None	0.436	
Urban	Main Building External Area	Area Pervious (ha)	None	None	0.660	
Urban	Main Building External Area	Total Area (ha)	None	None	1.097	
Urban	North Road	Area Impervious (ha)	None	None	0.606	
Urban	North Road	Area Pervious (ha)	None	None	0.874	
Urban	North Road	Total Area (ha)	None	None	1.481	
Urban	Roof	Area Impervious (ha)	None	None	0.974	
Urban	Roof	Area Pervious (ha)	None	None	0	
Urban	Roof	Total Area (ha)	None	None	0.974	
Urban	Urban	Area Impervious (ha)	None	None	0.522	
Jrban	Urban	Area Pervious (ha)	None	None	0	
Jrban	Urban	Total Area (ha)	None	None	0.522	
Jrban	Urban Bypass	Area Impervious (ha)	None	None	0	
Urban	Urban Bypass	Area Pervious (ha)	None	None	0.28	
Urban	Urban Bypass	Total Area (ha)	None	None	0.281	

Only certain parameters are reported when they pass validation









# MUSIC-link Report

Rainfall Station:

Project Details Company Details

Project: JHHIP Company: Northrop Consulting Engineers

**Report Export Date**: 28/09/2020 **Contact**: R Jeans

Catchment Name: NL191366\_MUSIC DA[rev3-no RWT] Address: Level 1 215 Pacific Highway Charlestown NSW 2290

 Catchment Area:
 0.522ha
 Phone:
 (02) 4943 1777

 Impervious Area\*:
 100%
 Email:
 rjeans@northrop.com.au

Modelling Time-step: 6 Minutes

**Modelling Period:** 1/01/1995 - 31/12/2008 11:54:00 PM

61078 WILLIAMTOWN

Mean Annual Rainfall:1125mmEvapotranspiration:1735mmMUSIC Version:6.3.0MUSIC-link data Version:6.33Study Area:NewcastleScenario:Newcastle

\* takes into account area from all source nodes that link to the chosen reporting node, excluding Import Data Nodes

Treatment Train Effectiveness		Treatment Nodes		Source Nodes	
Node: Junction	Reduction	Node Type	Number	Node Type	Number
Row	1.55%	Bio Retention Node	4	Urban Source Node	6
TSS	86.8%	Buffer Node	1		
TP	75.2%				
TN	52%				
GP CP	100%				

#### Comments



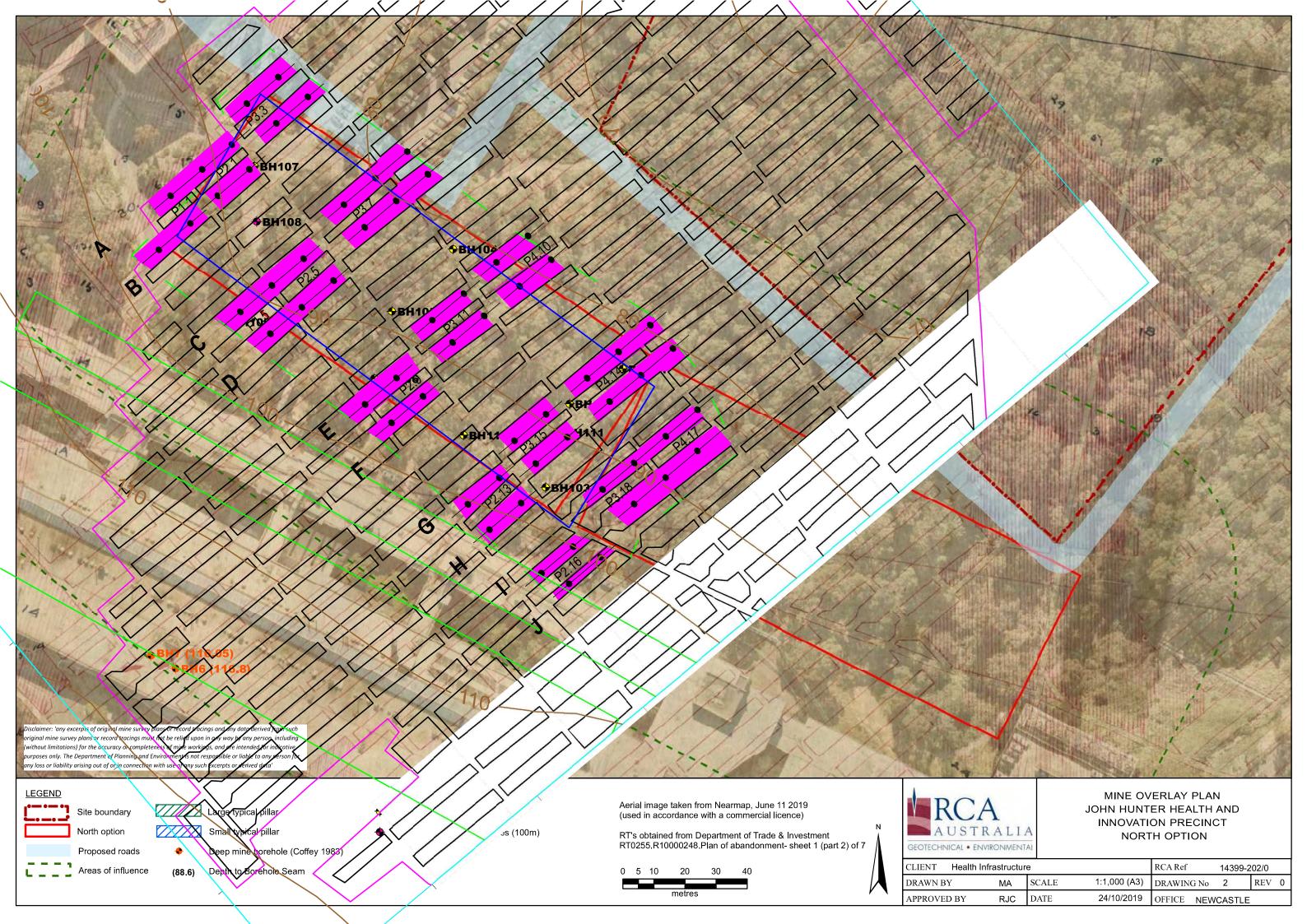


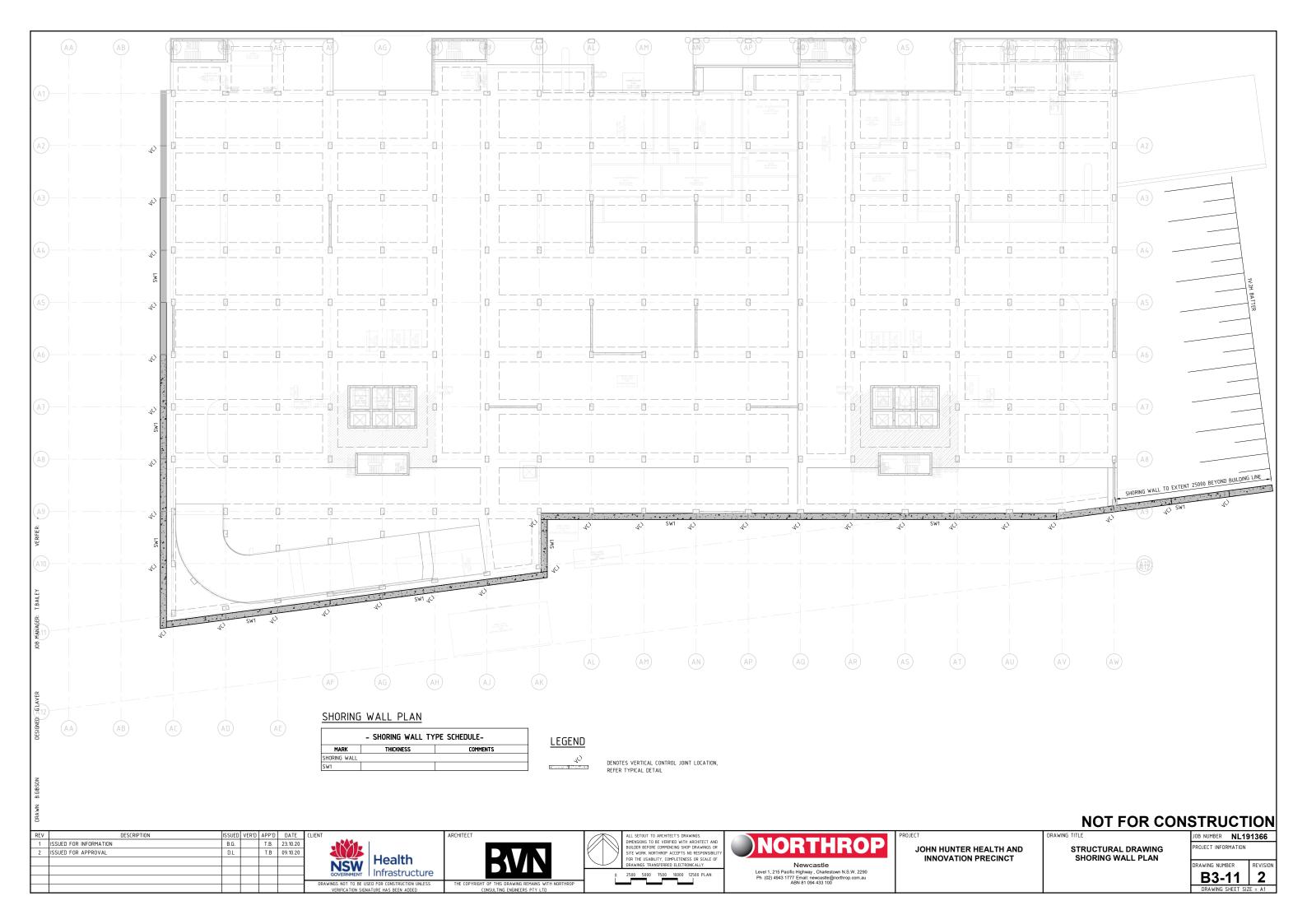
Node Type	Node Name	Parameter	Min	Max	Actua
Bio	Bioretention	Hi-flow bypass rate (cum/sec)	None	None	100
Bio	Bioretention	Hi-flow bypass rate (cum/sec)	None	None	100
Bio	Bioretention	Hi-flow bypass rate (cum/sec)	None	None	100
Bio	Bioretention	Hi-flow bypass rate (cum/sec)	None	None	100
Bio	Bioretention	PET Scaling Factor	2.1	2.1	2.1
Bio	Bioretention	PET Scaling Factor	2.1	2.1	2.1
Bio	Bioretention	PET Scaling Factor	2.1	2.1	2.1
Bio	Bioretention	PET Scaling Factor	2.1	2.1	2.1
Buffer	Buffer	Proportion of upstream impervious area treated	None	None	0.5
Receiving	Receiving Node	% Load Reduction	None	None	3.63
Receiving	Receiving Node	GP % Load Reduction	90	None	100
Receiving	Receiving Node	TN % Load Reduction	45	None	61
Receiving	Receiving Node	TP % Load Reduction	65	None	65.8
Receiving	Receiving Node	TSS % Load Reduction	85	None	89.5
Jrban	Copy of Urban	Area Impervious (ha)	None	None	0.586
Urban	Copy of Urban	Area Pervious (ha)	None	None	0
Urban	Copy of Urban	Total Area (ha)	None	None	0.586
Urban	Main Building External Area	Area Impervious (ha)	None	None	0.436
Urban	Main Building External Area	Area Pervious (ha)	None	None	0.660
Urban	Main Building External Area	Total Area (ha)	None	None	1.097
Urban	North Road	Area Impervious (ha)	None	None	0.606
Urban	North Road	Area Pervious (ha)	None	None	0.874
Urban	North Road	Total Area (ha)	None	None	1.481
Urban	Roof	Area Impervious (ha)	None	None	0.974
Urban	Roof	Area Pervious (ha)	None	None	0
Urban	Roof	Total Area (ha)	None	None	0.974
Urban	Urban	Area Impervious (ha)	None	None	0.522
Jrban	Urban	Area Pervious (ha)	None	None	0
Jrban	Urban	Total Area (ha)	None	None	0.522
Jrban	Urban Bypass	Area Impervious (ha)	None	None	0
Urban	Urban Bypass	Area Pervious (ha)	None	None	0.28
Urban	Urban Bypass	Total Area (ha)	None	None	0.281

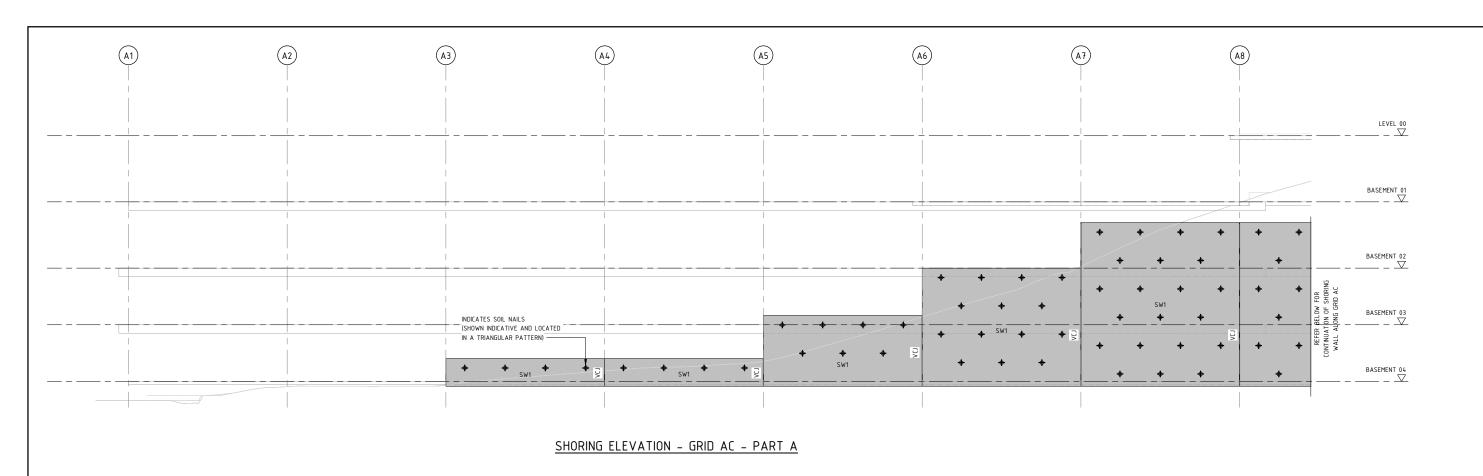
Only certain parameters are reported when they pass validation

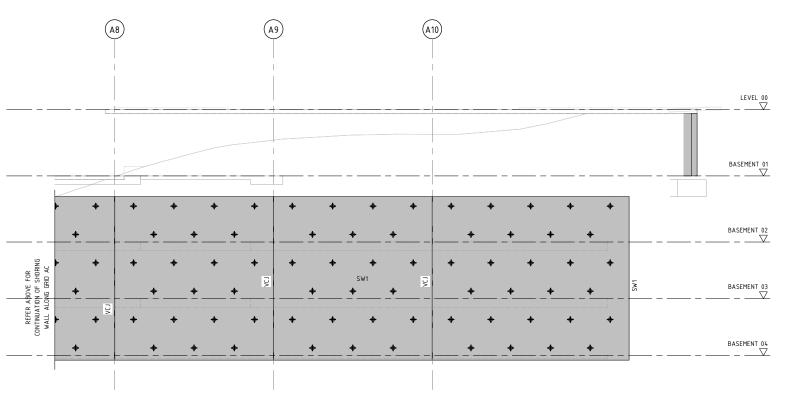












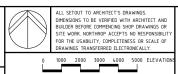
SHORING ELEVATION - GRID AC - PART B

# NOT FOR CONSTRUCTION

REV	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	Г
1	ISSUED FOR INFORMATION	B.G.		T.B.	23.10.20	l
2	ISSUED FOR APPROVAL	D.L.		T.B	09.10.20	l
						1
						l
						L
						1







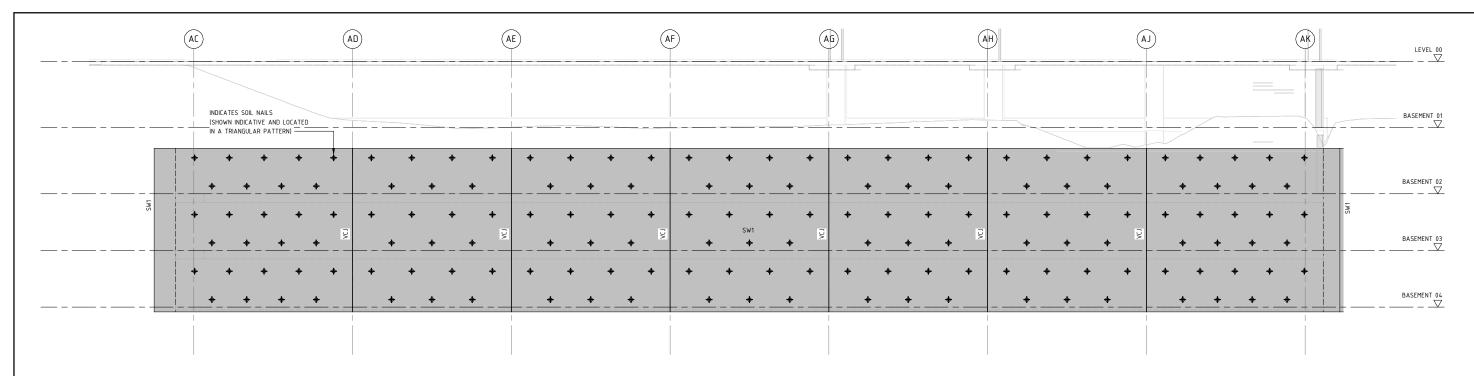


JOHN HUNTER HEALTH AND INNOVATION PRECINCT

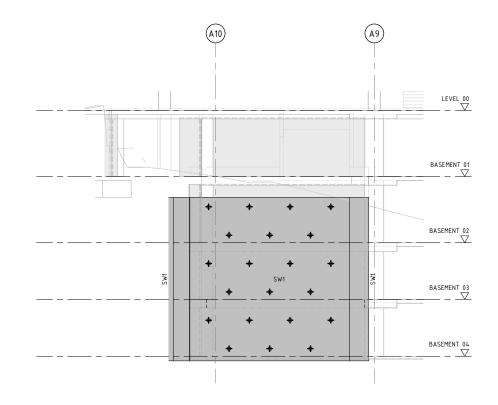
STRUCTURAL DRAWING SHORING WALL ELEVATIONS -SHEET 1

_	JOB NUMBER NL191366
	PROJECT INFORMATION

B3-30 REVISION



SHORING ELEVATION - GRID A11

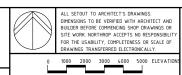


SHORING ELEVATION - GRID AK

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Health
SOVERIMENT Infrastructure
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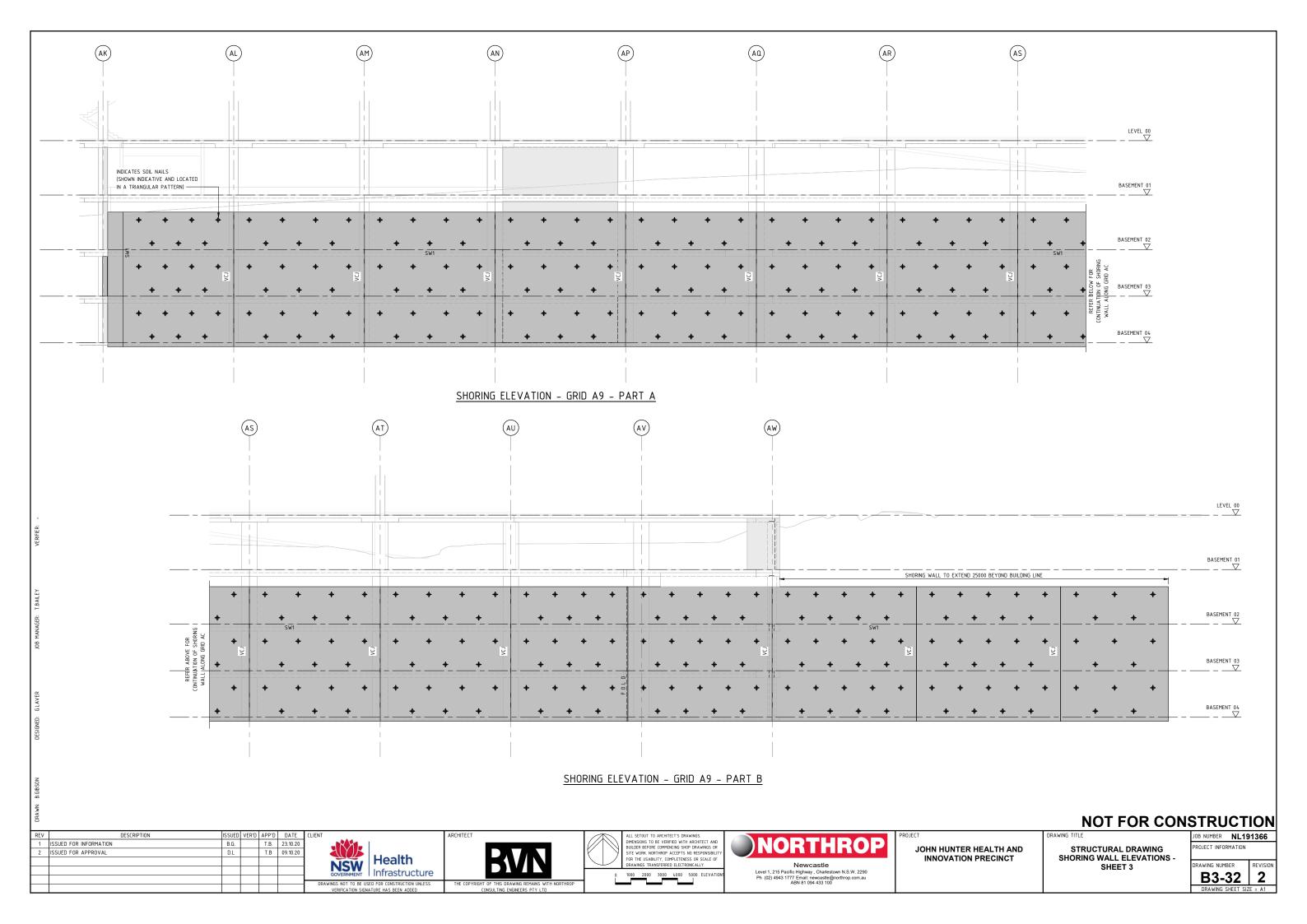


JOHN HUNTER HEALTH AND INNOVATION PRECINCT

STRUCTURAL DRAWING SHORING WALL ELEVATIONS -SHEET 2

1 011 0011	311100110
	JOB NUMBER NL19136
AL DRAWING	PROJECT INFORMATION

B3-31 REVISION



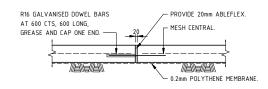
GEOTECHNICAL ENGINEER SHALL INSPECT AND

0.2mm POLYTHENE MEMBRANE - SL81 MESH LOCATED CENTRALLY EXTRA 1m sq SL81 MESH, LOCATED CENTRAL BEHIND - PROVIDE NON-COMBUSTIBLE ANCHORS, 40mm COVER TO LOST FORMWORK OVER SOIL NAIL TO SEAL CORE. 50 MPa CEMENT REFER GEOTECHNICAL SPECIFICATION GROUT — FOR PLATE AND NUT REQUIREMENTS, STOP GROUT 300mm FROM ROCK SOIL NAIL -FACE. SLEEVE USING PVC OR APPROVED EQUIVALENT.

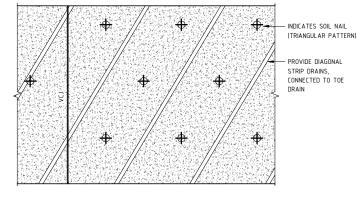
TYPICAL SHORING WALL SW1 SECTION

- R16 GALVANISED DOWEL BARS AT 600 CTS, 450 LEGS, GREASE AND CAP ONE END. SOIL NAIL

TYPICAL SW1 CORNER PLAN



TYPICAL VCJ DETAIL



SHORING WALL SW1 PART ELEVATION

NOT FOR CONSTRUCTION

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DIMENSIONS TO BE VERIFIED WITH ARCHITECT AND
BULDER REFORE COMMENCING SHOP DRAWINGS OR
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DRAWINGS TRANSFERRED LECTRONICALLY. Health Newcastle Level 1, 215 Pacific Highway , Charlestown N.S.W. 2290 Ph (02) 4943 1777 Email: newcastle@northrop.com.au ABN 81 994 493 100 **NSW** Infrastructure

JOHN HUNTER HEALTH AND INNOVATION PRECINCT

STRUCTURAL DRAWING SHORING DETAILS

JOB NUMBER NL191366 ROJECT INFORMATION RAWING NUMBER B3-35 2

DESCRIPTION

ISSUED FOR INFORMATION

2 ISSUED FOR APPROVAL

| ISSUED | VER'D | APP'D | DATE | B.G. | T.B. | 23.10.20

T.B 09.10.20