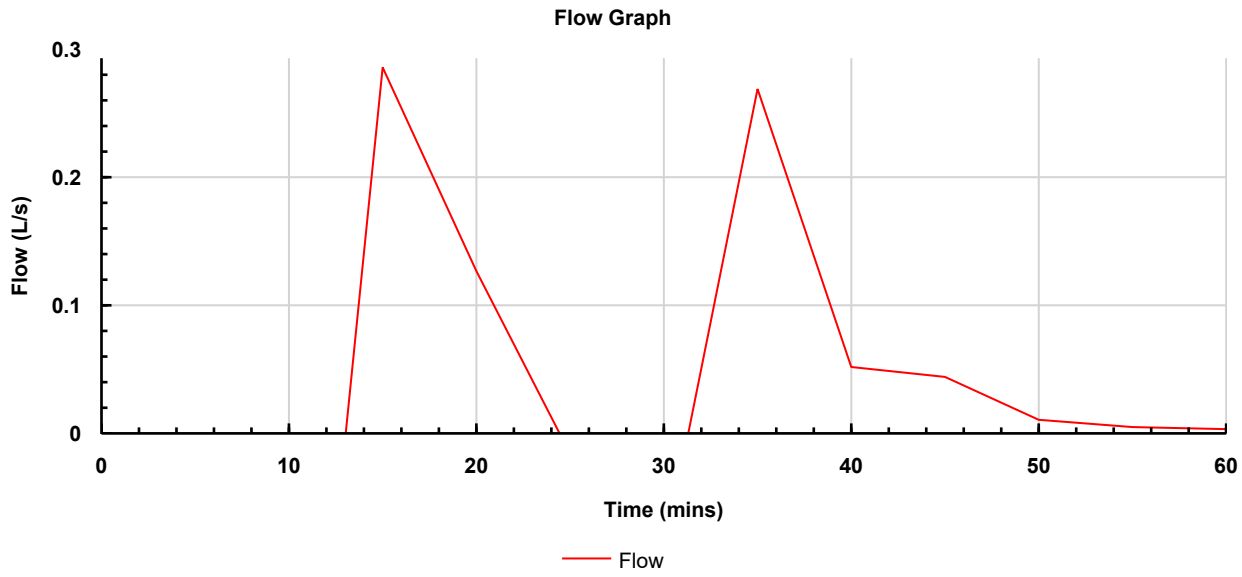
Dickson shops:	Date:		
Dickson Shops and Streetscape Stormwater Upgrades Proposed Model Outputs	05/11/2024		
	Designed by:	Checked by:	Approved By:
	M.B	H.S	J.L
Report Details:	WSP:		
Type: Connection Results Storm Phase: with cc 20%	Level 2, 121 Marcus Clarke Street Canberra, Australian Capital Territory ACT 2601, Australia		

PIPE 15.00
Critical Storm: ARR: 1 %: Increase Rainfall (%): +20: 30 mins: 1

Type : Pipe

Graphs



Tables

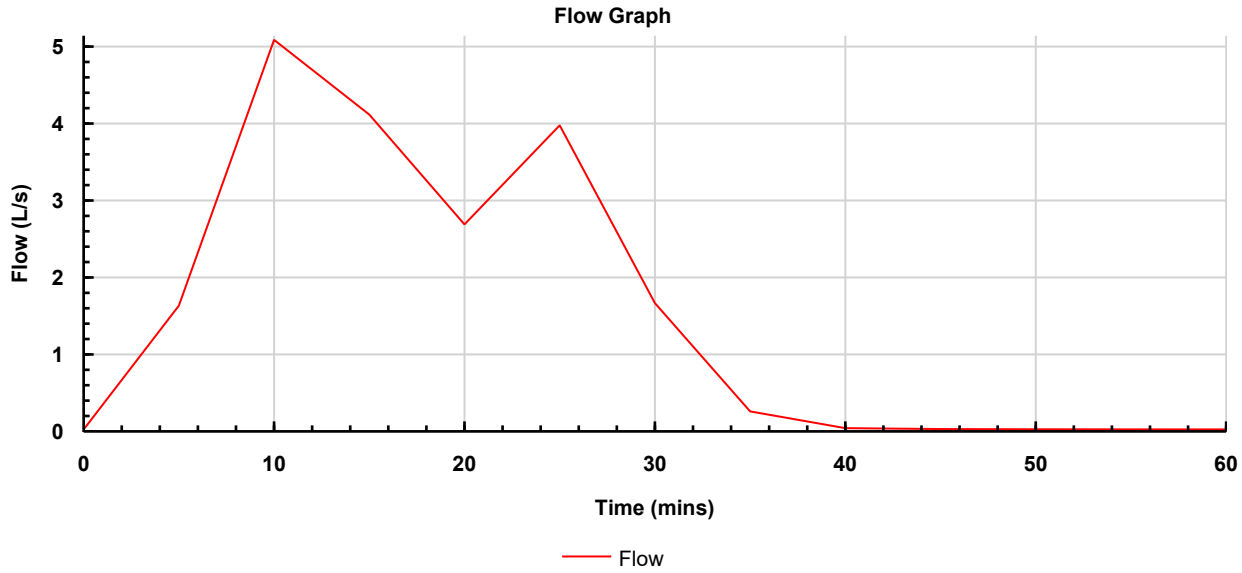
Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.021	-0.2
10	0.160	-0.4
15	0.130	0.3
20	0.090	0.1
25	0.085	-0.0
30	0.104	-0.1
35	0.059	0.3
40	0.025	0.1
45	0.018	0.0
50	0.013	0.0
55	0.011	0.0
60	0.010	0.0

Dickson shops:	Date:		
Dickson Shops and Streetscape Stormwater Upgrades Proposed Model Outputs	05/11/2024		
	Designed by:	Checked by:	Approved By:
	M.B	H.S	J.L
Report Details:	WSP:		
Type: Connection Results Storm Phase: with cc 20%	Level 2, 121 Marcus Clarke Street Canberra, Australian Capital Territory ACT 2601, Australia		

Pipe 2.01
Critical Storm: ARR: 1 %: Increase Rainfall (%): +20: 30 mins: 6

Type : Pipe

Graphs



Tables

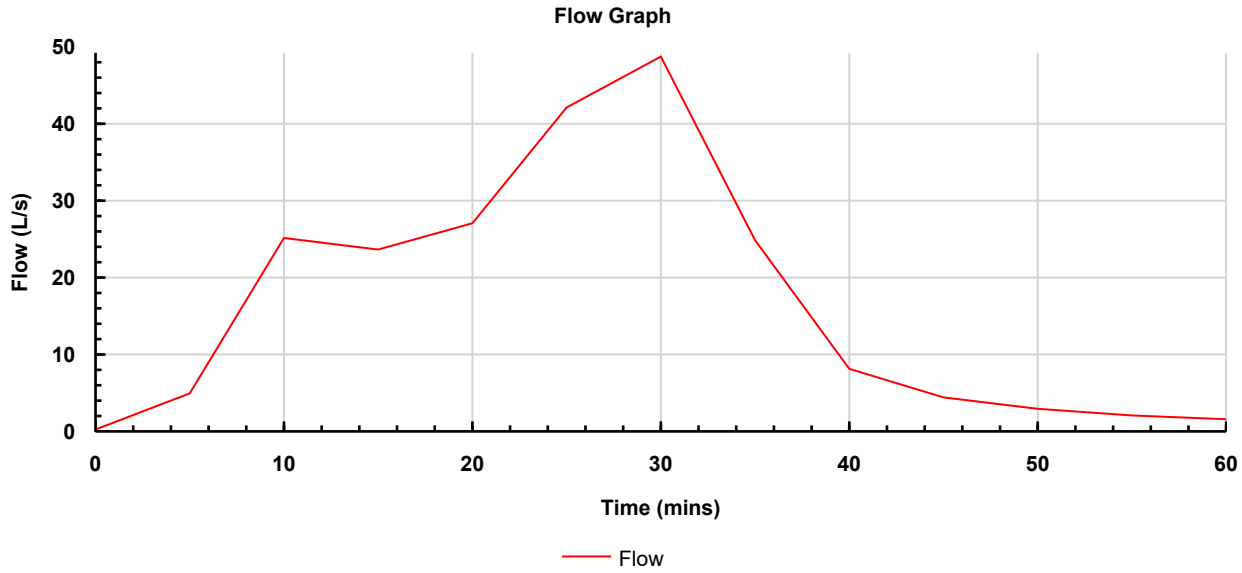
Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.033	1.6
10	0.104	5.1
15	0.100	4.1
20	0.079	2.7
25	0.094	4.0
30	0.066	1.7
35	0.034	0.2
40	0.019	0.0
45	0.015	0.0
50	0.012	0.0
55	0.010	0.0
60	0.009	0.0

Dickson shops:	Date:		
Dickson Shops and Streetscape Stormwater Upgrades Proposed Model Outputs	05/11/2024		
	Designed by:	Checked by:	Approved By:
	M.B	H.S	J.L
Report Details:	WSP:		
Type: Connection Results Storm Phase: with cc 20%	Level 2, 121 Marcus Clarke Street Canberra, Australian Capital Territory ACT 2601, Australia		

Pipe 1.02
Critical Storm: ARR: 1 %: Increase Rainfall (%): +20: 30 mins: 3

Type : Pipe

Graphs



Tables

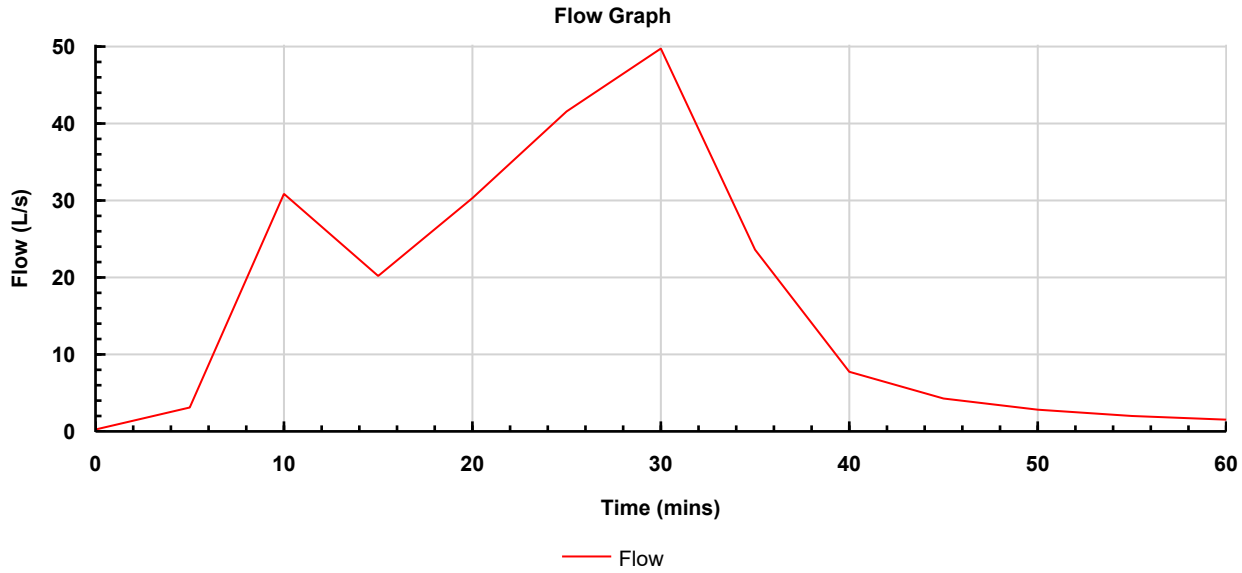
Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.053	4.7
10	0.114	25.0
15	0.110	23.5
20	0.119	27.0
25	0.152	42.1
30	0.165	48.7
35	0.110	24.7
40	0.061	7.9
45	0.045	4.2
50	0.036	2.7
55	0.030	1.8
60	0.026	1.3

Dickson shops:	Date:		
Dickson Shops and Streetscape Stormwater Upgrades Proposed Model Outputs	05/11/2024		
	Designed by:	Checked by:	Approved By:
	M.B	H.S	J.L
Report Details:	WSP:		
Type: Connection Results Storm Phase: with cc 20%	Level 2, 121 Marcus Clarke Street Canberra, Australian Capital Territory ACT 2601, Australia		

PIPE 2.05
Critical Storm: ARR: 1 %: Increase Rainfall (%): +20: 30 mins: 10

Type : Pipe

Graphs



Tables

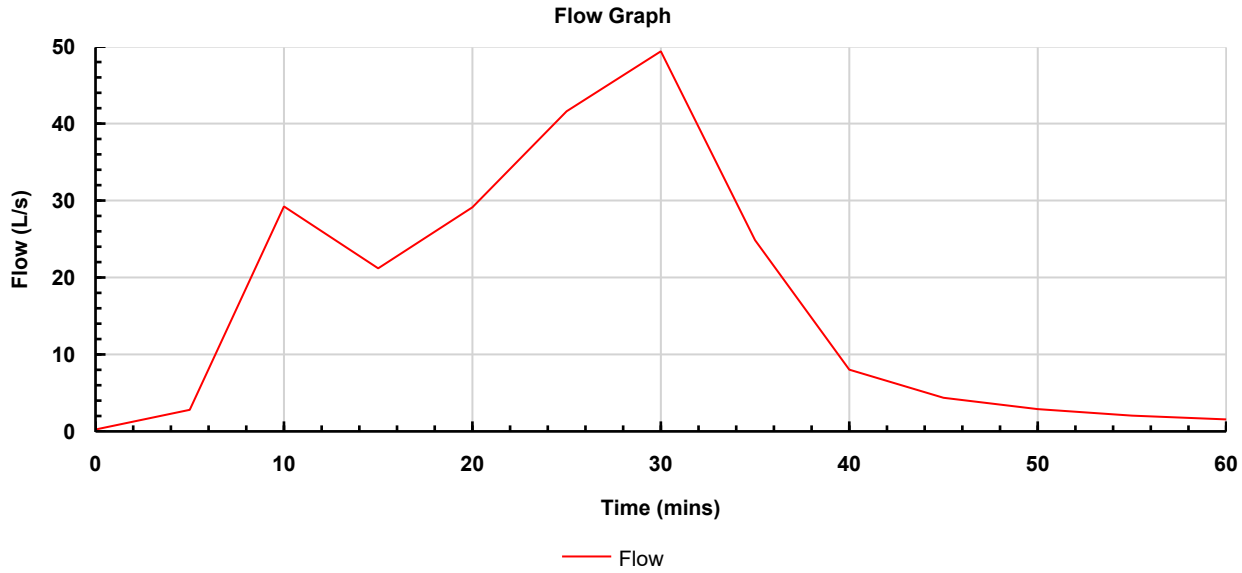
Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.039	2.9
10	0.134	30.8
15	0.108	20.0
20	0.133	30.2
25	0.161	41.5
30	0.179	49.7
35	0.118	23.5
40	0.065	7.5
45	0.048	4.0
50	0.038	2.6
55	0.032	1.8
60	0.027	1.3

Dickson shops:	Date:		
Dickson Shops and Streetscape Stormwater Upgrades Proposed Model Outputs	05/11/2024		
	Designed by: M.B	Checked by: H.S	Approved By: J.L
Report Details: Type: Connection Results Storm Phase: with cc 20%	WSP: Level 2, 121 Marcus Clarke Street Canberra, Australian Capital Territory ACT 2601, Australia		

PIPE 1.01
Critical Storm: ARR: 1 %: Increase Rainfall (%): +20: 30 mins: 10

Type : Pipe

Graphs



Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.034	2.6
10	0.120	29.1
15	0.103	21.0
20	0.120	29.0
25	0.148	41.6
30	0.164	49.4
35	0.112	24.7
40	0.062	7.8
45	0.045	4.1
50	0.037	2.7
55	0.031	1.8
60	0.026	1.3

Appendix B Flexible Pipe Loading Calculations

Project

Binder 3a,831

Name

Dickson Shops and Streetscape

Pipe details

Nominal Diameter

DN

225

mm

Type

StormPRO ®

Outside diameter
D_e 259 mm
Inside diameter
D_i 226 mm
Diameter at neutral axis of wall
D 238 mm
Initial 3-minute ring-bending modulus
E_b 1207 MPa
Long-term ring-bending modulus
E_{bL} 200 MPa
Poisson's ratio
μ 0.45
Initial 3-minute ring-bending stiffness
S_{DI} 8000 N/m/m
Long-term (2 year) ring-bending stiffness
S_{DL2} 1904 N/m/m
Long-term (50 year) ring-bending stiffness
S_{DL50} 1325 N/m/m

Site conditions

Binder 3a,832

User defined trench width

B

660

mm

(input only if trench width is wider than what the minimum is required)

Cover height

H 0.5 m

*For cover heights less than 0.5m please contact Vinidex

Water table height above pipe

H_w 0 m

Native soil type

Dense sand, dry

Embedment material description

Gravel - single size

Compaction requirement

90% dry density ratio (RD), 60% density index (ID)

Trench fill type

Loose granular materials

Trench width

B 660 mm

Embedment material modulus

E'_e 7 MPa

(subject to confirmation by geotechnical testing)

Native soil modulus

E'_n 15 MPa

(subject to confirmation by geotechnical testing)

Soil specific weight

γ 15 kN/m^3

Soil particle specific density

2.65

Design dead loads and live loads

Binder 3a 833

Design live load [2]

AS 5100 SM1600 Moving Load Single Lane

Construction load

Vertical design load (pressure at top of pipe) due to surface applied dead load

w_{gs} 0 kPa

Vertical design load (pressure at top of pipe) due to surface-applied live load

wq 174 kPa

Vertical design load (pressure at top of pipe) due to soil dead load [1]

wg 8 kPa

Effective combined soil modulus

Binder 3a 834

Ring-bending stiffness value for calculations [3]

50 years

B/D_e 2.5

E'_e/E'_n 0.5

Bedding constant

K 0.1

Design factor

Δf 0.8

Leonhardt correction factor

ζ 1.29

Effective combined soil modulus

E' 9.0 MPa

Binder 3a,835

Deflection prediction

Maximum allowable long-term vertical deflection	Δ_{yall}/D **7.5%**
Predicted long-term vertical deflection	Δ_y/D **3.2%**

Strain prediction

Shape factor	D_f **5.88**
Maximum allowable long-term ring-bending strain	ε_{ball} **4%**
Predicted long-term ring-bending strain	ε_b **1.7%**

Buckling stability

Minimum allowable design factor for buckling	F_{sall} **2.5**
Buckling pressure for $H>H_w$ (excluding vacuum pressure)	q_b **184** kPa
	q_{all1} **16** kPa
	q_{all2} **190** kPa
Allowable buckling pressure (greater of q_{all1} or q_{all2})	q_{all} **190** kPa
Actual design factor for buckling (excluding vacuum pressure)	F_s **2.6**

Binder 3a,836

Notes

1. Soil loading on the pipe is calculated based on the prism load and ignores the effects of soil friction within the fill above the pipe.
2. Design loads on buried flexible pipelines, due to construction and other equipment, should be determined as they can exceed the loads that apply following the construction phase. It is the designer's responsibility to check the type of equipment to be used during construction, particularly when the cover tends towards the minimum. Allowance should be made for increased impact effects due to adverse surface conditions. It may be necessary to increase the cover locally to reduce the working loads due to construction and other equipment
3. The 2-year value for the ring-bending stiffness of the pipe may be used to represent the design basis of 50-year deflection, ring-bending strain and buckling response.
4. The ring bending modulus values are based on the AASHTO LRFD Bridge Design Specifications for corrugated PP and PE pipe.

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Project

Binder 3a,837

Name

Dickson Shops and Streetscape

Pipe details

Nominal Diameter

DN

225

mm

Type

StormPRO ®

Outside diameter
D_e 259 mm
Inside diameter
D_i 226 mm
Diameter at neutral axis of wall
D 238 mm
Initial 3-minute ring-bending modulus
E_b 1207 MPa
Long-term ring-bending modulus
E_{bL} 200 MPa
Poisson's ratio
μ 0.45
Initial 3-minute ring-bending stiffness
S_{DI} 8000 N/m/m
Long-term (2 year) ring-bending stiffness
S_{DL2} 1904 N/m/m
Long-term (50 year) ring-bending stiffness
S_{DL50} 1325 N/m/m

Site conditions

Binder 3a,838

User defined trench width

B

660

mm

(input only if trench width is wider than what the minimum is required)

Cover height

H 0.5 m

*For cover heights less than 0.5m please contact Vinidex

Water table height above pipe

H_w 0 m

Native soil type

Dense sand, dry

Embedment material description

Gravel - graded

Compaction requirement

90% dry density ratio (RD), 60% density index (ID)

Trench fill type

Loose granular materials

Trench width

B 660 mm

Embedment material modulus

E'_e 7 MPa

(subject to confirmation by geotechnical testing)

Native soil modulus

E'_n 15 MPa

(subject to confirmation by geotechnical testing)

Soil specific weight

γ 15 kN/m^3

Soil particle specific density

2.65

Design dead loads and live loads

Binder 3a 839

Design live load [2]

AS 5100 SM1600 Moving Load Single Lane

Construction load

Vertical design load (pressure at top of pipe) due to surface applied dead load

w_{gs} 0 kPa

Vertical design load (pressure at top of pipe) due to surface-applied live load

wq 174 kPa

Vertical design load (pressure at top of pipe) due to soil dead load [1]

wg 8 kPa

Effective combined soil modulus

Binder 3a 840

Ring-bending stiffness value for calculations [3]

50 years

B/D_e 2.5

E'_e/E'_n 0.5

Bedding constant

K 0.1

Design factor

Δf 0.8

Leonhardt correction factor

ζ 1.29

Effective combined soil modulus

E' 9.0 MPa

Binder 3a,841

Deflection prediction

Maximum allowable long-term vertical deflection	Δ_{yall}/D **7.5%**
Predicted long-term vertical deflection	Δ_y/D **3.2%**

Strain prediction

Shape factor	D_f **5.88**
Maximum allowable long-term ring-bending strain	ε_{ball} **4%**
Predicted long-term ring-bending strain	ε_b **1.7%**

Buckling stability

Minimum allowable design factor for buckling	F_{sall} **2.5**
Buckling pressure for $H>H_w$ (excluding vacuum pressure)	q_b **184** kPa
	q_{all1} **16** kPa
	q_{all2} **190** kPa
Allowable buckling pressure (greater of q_{all1} or q_{all2})	q_{all} **190** kPa
Actual design factor for buckling (excluding vacuum pressure)	F_s **2.6**

Binder 3a,842

Notes

1. Soil loading on the pipe is calculated based on the prism load and ignores the effects of soil friction within the fill above the pipe.
2. Design loads on buried flexible pipelines, due to construction and other equipment, should be determined as they can exceed the loads that apply following the construction phase. It is the designer's responsibility to check the type of equipment to be used during construction, particularly when the cover tends towards the minimum. Allowance should be made for increased impact effects due to adverse surface conditions. It may be necessary to increase the cover locally to reduce the working loads due to construction and other equipment
3. The 2-year value for the ring-bending stiffness of the pipe may be used to represent the design basis of 50-year deflection, ring-bending strain and buckling response.
4. The ring bending modulus values are based on the AASHTO LRFD Bridge Design Specifications for corrugated PP and PE pipe.

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Project

Binder 3a,843

Name

Dickson Shops and Streetscape

Pipe details

Nominal Diameter

DN

225

mm

Type

StormPRO ®

Outside diameter
D_e 259 mm
Inside diameter
D_i 226 mm
Diameter at neutral axis of wall
D 238 mm
Initial 3-minute ring-bending modulus
E_b 1207 MPa
Long-term ring-bending modulus
E_{bL} 200 MPa
Poisson's ratio
μ 0.45
Initial 3-minute ring-bending stiffness
S_{DI} 8000 N/m/m
Long-term (2 year) ring-bending stiffness
S_{DL2} 1904 N/m/m
Long-term (50 year) ring-bending stiffness
S_{DL50} 1325 N/m/m

Site conditions

Binder 3a,844

User defined trench width

B

660

mm

(input only if trench width is wider than what the minimum is required)

Cover height

H 0.5 m

*For cover heights less than 0.5m please contact Vinidex

Water table height above pipe

H_w 0 m

Native soil type

Dense sand, dry

Embedment material description

Gravel - single size

Compaction requirement

100% dry density ratio (RD), 80% density index (ID)

Trench fill type

Loose granular materials

Trench width

B 660 mm

Embedment material modulus

E'_e 14 MPa

(subject to confirmation by geotechnical testing)

Native soil modulus

E'_n 15 MPa

(subject to confirmation by geotechnical testing)

Soil specific weight

γ 15 kN/m^3

Soil particle specific density

2.65

Design dead loads and live loads

Binder 3a 845

Design live load [2]

AS 5100 SM1600 Moving Load Single Lane

Construction load

Vertical design load (pressure at top of pipe) due to surface applied dead load

w_{gs} 0 kPa

Vertical design load (pressure at top of pipe) due to surface-applied live load

wq 174 kPa

Vertical design load (pressure at top of pipe) due to soil dead load [1]

wg 8 kPa

Effective combined soil modulus

Binder 3a 846

Ring-bending stiffness value for calculations [3]

50 years

B/D_e 2.5

E'_e/E'_n 0.9

Bedding constant

K 0.1

Design factor

Δf 0.8

Leonhardt correction factor

ζ 1.03

Effective combined soil modulus

E' 14.4 MPa

Binder 3a,847

Deflection prediction

Maximum allowable long-term vertical deflection	Δ_{yall}/D **7.5%**
Predicted long-term vertical deflection	Δ_y/D **2.0%**

Strain prediction

Shape factor	D_f **6.58**
Maximum allowable long-term ring-bending strain	ε_{ball} **4%**
Predicted long-term ring-bending strain	ε_b **1.2%**

Buckling stability

Minimum allowable design factor for buckling	F_{sall} **2.5**
Buckling pressure for $H>H_w$ (excluding vacuum pressure)	q_b **184** kPa
	q_{all1} **16** kPa
	q_{all2} **260** kPa
Allowable buckling pressure (greater of q_{all1} or q_{all2})	q_{all} **260** kPa
Actual design factor for buckling (excluding vacuum pressure)	F_s **3.5**

Binder 3a,848

Notes

1. Soil loading on the pipe is calculated based on the prism load and ignores the effects of soil friction within the fill above the pipe.
2. Design loads on buried flexible pipelines, due to construction and other equipment, should be determined as they can exceed the loads that apply following the construction phase. It is the designer's responsibility to check the type of equipment to be used during construction, particularly when the cover tends towards the minimum. Allowance should be made for increased impact effects due to adverse surface conditions. It may be necessary to increase the cover locally to reduce the working loads due to construction and other equipment
3. The 2-year value for the ring-bending stiffness of the pipe may be used to represent the design basis of 50-year deflection, ring-bending strain and buckling response.
4. The ring bending modulus values are based on the AASHTO LRFD Bridge Design Specifications for corrugated PP and PE pipe.

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Project

Binder 3a,849

Name

Dickson Shops and Streetscape

Pipe details

Nominal Diameter

DN

225

mm

Type

StormPRO ®

Outside diameter
D_e 259 mm
Inside diameter
D_i 226 mm
Diameter at neutral axis of wall
D 238 mm
Initial 3-minute ring-bending modulus
E_b 1207 MPa
Long-term ring-bending modulus
E_{bL} 200 MPa
Poisson's ratio
μ 0.45
Initial 3-minute ring-bending stiffness
S_{DI} 8000 N/m/m
Long-term (2 year) ring-bending stiffness
S_{DL2} 1904 N/m/m
Long-term (50 year) ring-bending stiffness
S_{DL50} 1325 N/m/m

Site conditions

Binder 3a,850

User defined trench width

B

660

mm

(input only if trench width is wider than what the minimum is required)

Cover height

H 0.5 m

*For cover heights less than 0.5m please contact Vinidex

Water table height above pipe

H_w 0 m

Native soil type

Dense sand, dry

Embedment material description

Gravel - graded

Compaction requirement

100% dry density ratio (RD), 80% density index (ID)

Trench fill type

Loose granular materials

Trench width

B 660 mm

Embedment material modulus

E'_e 20 MPa

(subject to confirmation by geotechnical testing)

Native soil modulus

E'_n 15 MPa

(subject to confirmation by geotechnical testing)

Soil specific weight

γ 15 kN/m^3

Soil particle specific density

2.65

Design dead loads and live loads

Binder 3a 851

Design live load [2]

AS 5100 SM1600 Moving Load Single Lane

Construction load

Vertical design load (pressure at top of pipe) due to surface applied dead load

w_{gs} 0 kPa

Vertical design load (pressure at top of pipe) due to surface-applied live load

wq 174 kPa

Vertical design load (pressure at top of pipe) due to soil dead load [1]

wg 8 kPa

Effective combined soil modulus

Binder 3a 852

Ring-bending stiffness value for calculations [3]

50 years

B/D_e 2.5

E'_e/E'_n 1.3

Bedding constant

K 0.1

Design factor

Δf 0.8

Leonhardt correction factor

ζ 0.88

Effective combined soil modulus

E' 17.6 MPa

Binder 3a,853

Deflection prediction

Maximum allowable long-term vertical deflection	Δ_{yall}/D **7.5%**
Predicted long-term vertical deflection	Δ_y/D **1.7%**

Strain prediction

Shape factor	D_f **6.86**
Maximum allowable long-term ring-bending strain	ε_{ball} **4%**
Predicted long-term ring-bending strain	ε_b **1.0%**

Buckling stability

Minimum allowable design factor for buckling	F_{sall} **2.5**
Buckling pressure for $H>H_w$ (excluding vacuum pressure)	q_b **184** kPa
	q_{all1} **16** kPa
	q_{all2} **297** kPa
Allowable buckling pressure (greater of q_{all1} or q_{all2})	q_{all} **297** kPa
Actual design factor for buckling (excluding vacuum pressure)	F_s **4**

Binder 3a,854

Notes

1. Soil loading on the pipe is calculated based on the prism load and ignores the effects of soil friction within the fill above the pipe.
2. Design loads on buried flexible pipelines, due to construction and other equipment, should be determined as they can exceed the loads that apply following the construction phase. It is the designer's responsibility to check the type of equipment to be used during construction, particularly when the cover tends towards the minimum. Allowance should be made for increased impact effects due to adverse surface conditions. It may be necessary to increase the cover locally to reduce the working loads due to construction and other equipment
3. The 2-year value for the ring-bending stiffness of the pipe may be used to represent the design basis of 50-year deflection, ring-bending strain and buckling response.
4. The ring bending modulus values are based on the AASHTO LRFD Bridge Design Specifications for corrugated PP and PE pipe.

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Project

Binder 3a,855

Name

Dickson Shops and Streetscape

Pipe details

Nominal Diameter

DN

225

mm

Type

StormPRO ®

Outside diameter
D_e 259 mm
Inside diameter
D_i 226 mm
Diameter at neutral axis of wall
D 238 mm
Initial 3-minute ring-bending modulus
E_b 1207 MPa
Long-term ring-bending modulus
E_{bL} 200 MPa
Poisson's ratio
μ 0.45
Initial 3-minute ring-bending stiffness
S_{DI} 8000 N/m/m
Long-term (2 year) ring-bending stiffness
S_{DL2} 1904 N/m/m
Long-term (50 year) ring-bending stiffness
S_{DL50} 1325 N/m/m

Site conditions

Binder 3a,856

User defined trench width

B

660

mm

(input only if trench width is wider than what the minimum is required)

Cover height

H 0.5 m

*For cover heights less than 0.5m please contact Vinidex

Water table height above pipe

H_w 0 m

Native soil type

Dense sand, dry

Embedment material description

Gravel - single size

Compaction requirement

100% dry density ratio (RD), 80% density index (ID)

Trench fill type

Loose granular materials

Trench width

B 660 mm

Embedment material modulus

E'_e 14 MPa

(subject to confirmation by geotechnical testing)

Native soil modulus

E'_n 15 MPa

(subject to confirmation by geotechnical testing)

Soil specific weight

γ 15 kN/m^3

Soil particle specific density

2.65

Design dead loads and live loads

Binder 3a 857

Design live load [2]

No vehicle loading

Construction load

Vertical design load (pressure at top of pipe) due to surface applied dead load

w_{gs} 0 kPa

Vertical design load (pressure at top of pipe) due to surface-applied live load

wq 0 kPa

Vertical design load (pressure at top of pipe) due to soil dead load [1]

wg 8 kPa

Effective combined soil modulus

Binder 3a 858

Ring-bending stiffness value for calculations [3]

50 years

B/D_e 2.5

E'_e/E'_n 0.9

Bedding constant

K 0.1

Design factor

Δf 0.8

Leonhardt correction factor

ζ 1.03

Effective combined soil modulus

E' 14.4 MPa

Binder 3a,859

Deflection prediction

Maximum allowable long-term vertical deflection	Δ_{yall}/D **7.5%**
Predicted long-term vertical deflection	Δ_y/D **0.1%**

Strain prediction

Shape factor	D_f **6.58**
Maximum allowable long-term ring-bending strain	ε_{ball} **4%**
Predicted long-term ring-bending strain	ε_b **0.0%**

Buckling stability

Minimum allowable design factor for buckling	F_{sall} **2.5**
Buckling pressure for $H>H_w$ (excluding vacuum pressure)	q_b **10** kPa
	q_{all1} **16** kPa
	q_{all2} **260** kPa
Allowable buckling pressure (greater of q_{all1} or q_{all2})	q_{all} **260** kPa
Actual design factor for buckling (excluding vacuum pressure)	F_s **65**

Binder 3a,860

Notes

1. Soil loading on the pipe is calculated based on the prism load and ignores the effects of soil friction within the fill above the pipe.
2. Design loads on buried flexible pipelines, due to construction and other equipment, should be determined as they can exceed the loads that apply following the construction phase. It is the designer's responsibility to check the type of equipment to be used during construction, particularly when the cover tends towards the minimum. Allowance should be made for increased impact effects due to adverse surface conditions. It may be necessary to increase the cover locally to reduce the working loads due to construction and other equipment
3. The 2-year value for the ring-bending stiffness of the pipe may be used to represent the design basis of 50-year deflection, ring-bending strain and buckling response.
4. The ring bending modulus values are based on the AASHTO LRFD Bridge Design Specifications for corrugated PP and PE pipe.

***Disclaimer**

The information contained in the guidelines is based on the Australian standard AS/NZS 2566.1 "Buried flexible pipelines. Part 1: Structural design". Vinidex is providing this information as a guide and this is provided in good faith to assist users in obtaining the best performance of Vinidex products. Vinidex makes efforts to align information in the tool with the Australian standard above, but does not take responsibility for the accuracy of the information or the results of using the guideline. The guidelines are provided to be a general guide in determining design of buried flexible pipelines but cannot include the complex details of the specific installation. Application of the information may involve engineering judgements which cannot correctly be made without detailed knowledge of all conditions pertaining to a specific installation. Responsibility lies solely with the user to ensure the applicability of the information in the context of those circumstances. It is recommended that advice be obtained from a consultant registered with the Institution of Engineers.No warranty (other than Statutory warranty) is expressed or implied as to the content of the information or results obtained by use thereof, and Vinidex Pty Limited will not be held liable for any costs or damages, direct or indirect, that might arise from use of the guidelines. These terms and conditions are governed by the laws of New South Wales.

Project

Binder 3a,861

Name

Dickson Shops and Streetscape

Pipe details

Nominal Diameter

DN

225

mm

Type

StormPRO ®

Outside diameter
D_e 259 mm
Inside diameter
D_i 226 mm
Diameter at neutral axis of wall
D 238 mm
Initial 3-minute ring-bending modulus
E_b 1207 MPa
Long-term ring-bending modulus
E_{bL} 200 MPa
Poisson's ratio
μ 0.45
Initial 3-minute ring-bending stiffness
S_{DI} 8000 N/m/m
Long-term (2 year) ring-bending stiffness
S_{DL2} 1904 N/m/m
Long-term (50 year) ring-bending stiffness
S_{DL50} 1325 N/m/m

Site conditions

Binder 3a,862

User defined trench width

B

660

mm

(input only if trench width is wider than what the minimum is required)

Cover height

H 0.5 m

*For cover heights less than 0.5m please contact Vinidex

Water table height above pipe

H_w 0 m

Native soil type

Dense sand, dry

Embedment material description

Gravel - graded

Compaction requirement

100% dry density ratio (RD), 80% density index (ID)

Trench fill type

Loose granular materials

Trench width

B 660 mm

Embedment material modulus

E'_e 20 MPa

(subject to confirmation by geotechnical testing)

Native soil modulus

E'_n 15 MPa

(subject to confirmation by geotechnical testing)

Soil specific weight

γ 15 kN/m^3

Soil particle specific density

2.65

Design dead loads and live loads

Binder 3a 863

Design live load [2]

No vehicle loading

Construction load

Vertical design load (pressure at top of pipe) due to surface applied dead load

w_{gs} 0 kPa

Vertical design load (pressure at top of pipe) due to surface-applied live load

wq 0 kPa

Vertical design load (pressure at top of pipe) due to soil dead load [1]

wg 8 kPa

Effective combined soil modulus

Binder 3a 864

Ring-bending stiffness value for calculations [3]

50 years

B/D_e 2.5

E'_e/E'_n 1.3

Bedding constant

K 0.1

Design factor

Δf 0.8

Leonhardt correction factor

ζ 0.88

Effective combined soil modulus

E' 17.6 MPa

Binder 3a,865

Deflection prediction

Maximum allowable long-term vertical deflection	Δ_{yall}/D **7.5%**
Predicted long-term vertical deflection	Δ_y/D **0.1%**

Strain prediction

Shape factor	D_f **6.86**
Maximum allowable long-term ring-bending strain	ε_{ball} **4%**
Predicted long-term ring-bending strain	ε_b **0.0%**

Buckling stability

Minimum allowable design factor for buckling	F_{sall} **2.5**
Buckling pressure for $H>H_w$ (excluding vacuum pressure)	q_b **10** kPa
	q_{all1} **16** kPa
	q_{all2} **297** kPa
Allowable buckling pressure (greater of q_{all1} or q_{all2})	q_{all} **297** kPa
Actual design factor for buckling (excluding vacuum pressure)	F_s **74.2**

Binder 3a,866

Notes

1. Soil loading on the pipe is calculated based on the prism load and ignores the effects of soil friction within the fill above the pipe.
2. Design loads on buried flexible pipelines, due to construction and other equipment, should be determined as they can exceed the loads that apply following the construction phase. It is the designer's responsibility to check the type of equipment to be used during construction, particularly when the cover tends towards the minimum. Allowance should be made for increased impact effects due to adverse surface conditions. It may be necessary to increase the cover locally to reduce the working loads due to construction and other equipment
3. The 2-year value for the ring-bending stiffness of the pipe may be used to represent the design basis of 50-year deflection, ring-bending strain and buckling response.
4. The ring bending modulus values are based on the AASHTO LRFD Bridge Design Specifications for corrugated PP and PE pipe.

***Disclaimer**

The information contained in the guidelines is based on the Australian standard AS/NZS 2566.1 "Buried flexible pipelines. Part 1: Structural design". Vinidex is providing this information as a guide and this is provided in good faith to assist users in obtaining the best performance of Vinidex products. Vinidex makes efforts to align information in the tool with the Australian standard above, but does not take responsibility for the accuracy of the information or the results of using the guideline. The guidelines are provided to be a general guide in determining design of buried flexible pipelines but cannot include the complex details of the specific installation. Application of the information may involve engineering judgements which cannot correctly be made without detailed knowledge of all conditions pertaining to a specific installation. Responsibility lies solely with the user to ensure the applicability of the information in the context of those circumstances. It is recommended that advice be obtained from a consultant registered with the Institution of Engineers.No warranty (other than Statutory warranty) is expressed or implied as to the content of the information or results obtained by use thereof, and Vinidex Pty Limited will not be held liable for any costs or damages, direct or indirect, that might arise from use of the guidelines. These terms and conditions are governed by the laws of New South Wales.

Appendix C Concrete Pipe Loading Calculations

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PIPE LOAD SUMMARY SHEET

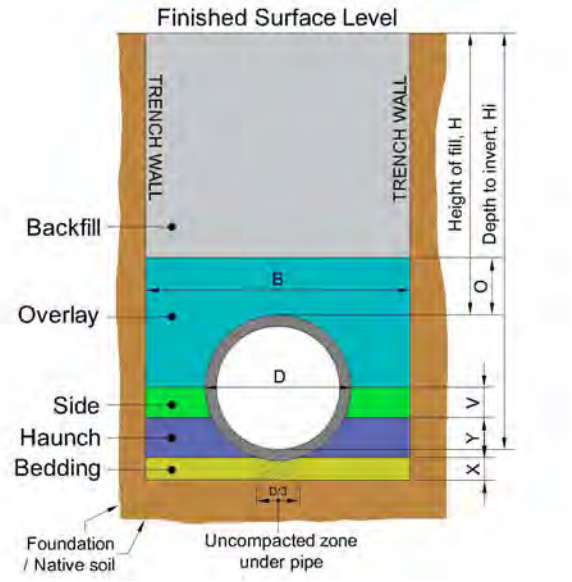
PIPECLASS3
Peace of mind for sustainable infrastructure

Date: 20-May-2025

Design of 375 dia. Class 4 RRJ drainage pipe

PROJECT DETAILS	
Job number:	PS208025
Client:	Oculus
Project:	Dickson Shops and Streetscape
Description:	RCP Pipe Loading Calculation
Designer:	WSP
Company:	Level 2, 121 Marcus Clarke Street Canberra, 2601

DESIGN PARAMETERS	
Installation Condition:	Trench
Pipe Nominal Diameter (mm):	375
Pipe External Diameter, D (mm):	445
Pipeline Orientation:	Both or skew
Soil Type:	clayey sand
Soil Density (kN/m³):	18
Soil Parameter Kμ:	0.15
Trench Width, B (m):	0.845
Height Of Fill, H (m):	0.2
Support Type:	HS2
Bedding Factor:	2.5
Excavation volume (solid) (m³/m)	0.630



In Service Load Cases/Combinations Considered (controlling load case/combination highlighted)

Load Description*	Fill Height (m)	Wg/2.5	Wq/1.5	Tc	Pipe Class
earth	0.4	1.5		1.5	2
W80(AS/NZS3725)	0.4	1.5	26.1	27.6	4
A160(AS/NZS3725)	0.4	1.5	26.1	27.6	4
M1600(AS/NZS3725)	0.4	1.5	19.6	21.1	3
S1600(AS/NZS3725)	0.4	1.5	11.5	13	2

All loads in kN/m. *Includes earth load at fill height shown.

Controlling Loads: earth + W80(AS/NZS3725)
Minimum Test Load: Tc = 1.5 + 26.1

Adopt 375 dia. Class 4 RRJ pipe (375/4 RRJ) in accordance with AS/NZS 4058:2007.

Design Notes:

1. In service live loads are considered as acting directly (no distribution) on the pipe (for cover < 0.4 m) in accordance with AS/NZS 3725:2007
2. A nominal wall thickness of 35 mm has been assumed.

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DETAILED LOAD CALCULATIONS

PIPECLASS3
Peace of mind for sustainable infrastructure

Date: 20-May-2025

Design of 375 dia. Class 4 RRJ drainage pipe

PROJECT DETAILS	
Job number:	PS208025
Client:	Oculus
Project:	Dickson Shops and Streetscape
Description:	RCP Pipe Loading Calculation
Designer:	WSP
Company:	Level 2, 121 Marcus Clarke Street Canberra, 2601

In Service Load Cases/Combinations Considered (controlling load case/combination highlighted)

Load Description*	Fill Height (m)	Wg/2.5	Wq/1.5	Tc	Pipe Class
earth	0.4	1.5		1.5	2
W80(AS/NZS3725)	0.4	1.5	26.1	27.6	4
A160(AS/NZS3725)	0.4	1.5	26.1	27.6	4
M1600(AS/NZS3725)	0.4	1.5	19.6	21.1	3
S1600(AS/NZS3725)	0.4	1.5	11.5	13	2

All loads in kN/m. *Includes earth load at fill height shown.

EARTH LOADS				
INSTALLATION CONDITION	Trench condition, vertical walls			
PIPE ORIENTATION	Both or skew			
TRENCH WIDTH	B	0.845	m	
Flexible pavement density		24.0	kN/m3	
Flexible pavement thickness		0.150	m	
Effective height of fill	He	0.400	m	
SPANGLER COEFFICIENT	Ct	0.441		Figure 6
WORKING LOAD DUE TO FILL	Wg	5.7	kN/m	Eqn 1
Positive Projection Check				
Settlement ratio	rs	1.000		Cl 6.3.6
Projection ratio	p	0.501		h/D
Plane of equal settlement height	He	0.400		
Modified Spangler coefficient	C'e	1.148		
Working load due to earth fill	Wg	3.7	kN/m	Eqn 2
Positive projection controls	Adopt Wg	3.7	kN/m	Cl 6.3.2

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Concrete Pipe Association of Australasia

DETAILED LOAD CALCULATIONS

Date: 20-May-2025

IN-SERVICE LIVE LOADS				
Vehicle	W80(AS/NZS3725)			
Footprint width at top of pipe	L1	1.080	m	AS/NZS3725
Footprint length at top of pipe	L2	0.780	m	
Footprint area	A	0.842	m²	
Load on footprint		80.000	kN	
Impact factor (dynamic load allowance)		1.34		Table C4
Live load pressure at top of pipe	q	127.255	kPa	Eqn 6
Minimum of L2 and D	S	0.445	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	1.564	m	Figure 10
Working load due to live load	Wq	39.1	kN/m	Eqn 7

Vehicle	A160(AS/NZS3725)			
Footprint width at top of pipe	L1	1.080	m	AS/NZS3725
Footprint length at top of pipe	L2	0.780	m	
Footprint area	A	0.842	m²	
Load on footprint		80.000	kN	
Impact factor (dynamic load allowance)		1.34		Table C4
Live load pressure at top of pipe	q	127.255	kPa	Eqn 6
Minimum of L2 and D	S	0.445	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	1.564	m	Figure 10
Working load due to live load	Wq	39.1	kN/m	Eqn 7

Vehicle	M1600(AS/NZS3725)			
Footprint width at top of pipe	L1	1.080	m	AS/NZS3725
Footprint length at top of pipe	L2	0.780	m	
Footprint area	A	0.842	m²	
Load on footprint		60.000	kN	
Impact factor (dynamic load allowance)		1.30		Table C4
Live load pressure at top of pipe	q	92.593	kPa	Eqn 6
Minimum of L2 and D	S	0.445	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	1.564	m	Figure 10
Working load due to live load	Wq (wheel)	28.5	kN/m	Eqn 7
UDL footprint width at top of pipe	L1	3.490	m	
UDL footprint length at top of pipe	L2	1.000	m	
UDL footprint area	A	3.490	m²	
Load on UDL footprint		6.0	kN	
Impact factor (dynamic load allowance)		1.33		Table C4
UDL pressure at top of pipe	q	2.278	kPa	Eqn 6
Minimum of L2 and D for UDL	S	0.445	m	Cl 6.5.3.4.1
Effective supporting length of pipe for UDL	Le	3.974	m	Figure 10
Working load due to live load	Wq (UDL)	0.9	kN/m	Eqn 7
Total working load due to live load	Wq	29.3	kN/m	wheel + UDL

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DETAILED LOAD CALCULATIONS

Date: 20-May-2025

IN-SERVICE LIVE LOADS				
Vehicle	S1600(AS/NZS3725)			
Footprint width at top of pipe	L1	1.080	m	AS/NZS3725
Footprint length at top of pipe	L2	0.780	m	
Footprint area	A	0.842	m²	
Load on footprint		40.000	kN	
Impact factor (dynamic load allowance)		1.00		Table C4
Live load pressure at top of pipe	q	47.483	kPa	Eqn 6
Minimum of L2 and D	S	0.445	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	1.564	m	Figure 10
Working load due to live load	Wq (wheel)	14.6	kN/m	Eqn 7
UDL footprint width at top of pipe	L1	3.490	m	
UDL footprint length at top of pipe	L2	1.000	m	
UDL footprint area	A	3.490	m²	
Load on UDL footprint		24.0	kN	
Impact factor (dynamic load allowance)		1.00		Table C4
UDL pressure at top of pipe	q	6.877	kPa	Eqn 6
Minimum of L2 and D for UDL	S	0.445	m	Cl 6.5.3.4.1
Effective supporting length of pipe for UDL	Le	3.974	m	Figure 10
Working load due to live load	Wq (UDL)	2.7	kN/m	Eqn 7
Total working load due to live load	Wq	17.3	kN/m	wheel + UDL

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Binder Bag 672

PIPE LOAD SUMMARY SHEET

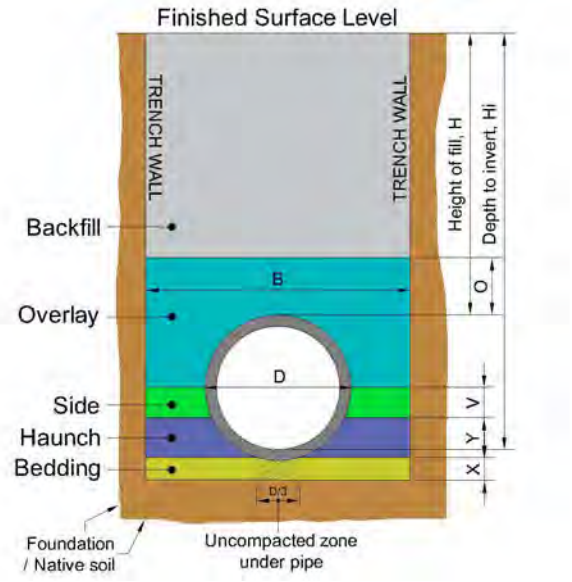
PIPECLASS3
Peace of mind for sustainable infrastructure

Date: 20-May-2025

Design of 450 dia. Class 10 RRJ drainage pipe

PROJECT DETAILS	
Job number:	PS208025
Client:	Oculus
Project:	Dickson Shops and Streetscape
Description:	RCP Pipe Loading Calculation
Designer:	WSP
Company:	Level 2, 121 Marcus Clarke Street Canberra, 2601

DESIGN PARAMETERS	
Installation Condition:	Trench
Pipe Nominal Diameter (mm):	450
Pipe External Diameter, D (mm):	534
Pipeline Orientation:	Both or skew
Soil Type:	clayey sand
Soil Density (kN/m³):	18
Soil Parameter Kμ:	0.15
Trench Width, B (m):	0.934
Height Of Fill, H (m):	0.15
Support Type:	HS2
Bedding Factor:	2.5
Excavation volume (solid) (m³/m)	0.730



In Service Load Cases/Combinations Considered (controlling load case/combination highlighted)

Load Description*	Fill Height (m)	Wg/2.5	Wq/1.5	Tc	Pipe Class
earth	0.35	1.5		1.5	2
W80(AS/NZS3725)	0.35	1.5	92.1	93.6	10
A160(AS/NZS3725)	0.35	1.5	92.1	93.6	10

All loads in kN/m. *Includes earth load at fill height shown.

Controlling Loads: earth + W80(AS/NZS3725)
Minimum Test Load: Tc = 1.5 + 92.1

Adopt 450 dia. Class 10 RRJ pipe (450/10 RRJ) in accordance with AS/NZS 4058:2007.

Design Notes:

1. In service live loads are considered as acting directly (no distribution) on the pipe (for cover < 0.4 m) in accordance with AS/NZS 3725:2007
2. A nominal wall thickness of 42 mm has been assumed.

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DETAILED LOAD CALCULATIONS

PIPECLASS3
Peace of mind for sustainable infrastructure

Date: 20-May-2025

Design of 450 dia. Class 10 RRJ drainage pipe

PROJECT DETAILS	
Job number:	PS208025
Client:	Oculus
Project:	Dickson Shops and Streetscape
Description:	RCP Pipe Loading Calculation
Designer:	WSP
Company:	Level 2, 121 Marcus Clarke Street Canberra, 2601

In Service Load Cases/Combinations Considered (controlling load case/combination highlighted)

Load Description*	Fill Height (m)	Wg/2.5	Wq/1.5	Tc	Pipe Class
earth	0.35	1.5		1.5	2
W80(AS/NZS3725)	0.35	1.5	92.1	93.6	10
A160(AS/NZS3725)	0.35	1.5	92.1	93.6	10

All loads in kN/m. *Includes earth load at fill height shown.

EARTH LOADS				
INSTALLATION CONDITION	Trench condition, vertical walls			
PIPE ORIENTATION	Both or skew			
TRENCH WIDTH	B	0.934	m	
Flexible pavement density		24.0	kN/m3	
Flexible pavement thickness		0.150	m	
Effective height of fill	He	0.350	m	
SPANGLER COEFFICIENT	Ct	0.354		Figure 6
WORKING LOAD DUE TO FILL	Wg	5.6	kN/m	Eqn 1
Positive Projection Check				
Settlement ratio	rs	1.000		Cl 6.3.6
Projection ratio	p	0.500		h/D
Plane of equal settlement height	He	0.350		
Modified Spangler coefficient	C'e	1.105		
Working load due to earth fill	Wg	3.7	kN/m	Eqn 2
Positive projection controls	Adopt Wg	3.7	kN/m	Cl 6.3.2

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Concrete Pipe Association of Australasia

DETAILED LOAD CALCULATIONS

Date: 20-May-2025

IN-SERVICE LIVE LOADS				
Vehicle	W80(AS/NZS3725)			
Footprint width at top of pipe	L1	0.200	m	AS/NZS3725
Footprint length at top of pipe	L2	0.500	m	
Footprint area	A	0.100	m²	
Load on footprint		80.000	kN	
Impact factor (dynamic load allowance)		1.35		Table C4
Live load pressure at top of pipe	q	1078.000	kPa	Eqn 6
Minimum of L2 and D	S	0.500	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	0.781	m	Figure 10
Working load due to live load	Wq	138.1	kN/m	Eqn 7

Vehicle	A160(AS/NZS3725)			
Footprint width at top of pipe	L1	0.200	m	AS/NZS3725
Footprint length at top of pipe	L2	0.500	m	
Footprint area	A	0.100	m²	
Load on footprint		80.000	kN	
Impact factor (dynamic load allowance)		1.35		Table C4
Live load pressure at top of pipe	q	1078.000	kPa	Eqn 6
Minimum of L2 and D	S	0.500	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	0.781	m	Figure 10
Working load due to live load	Wq	138.1	kN/m	Eqn 7

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Binder Page 75

PIPE LOAD SUMMARY SHEET

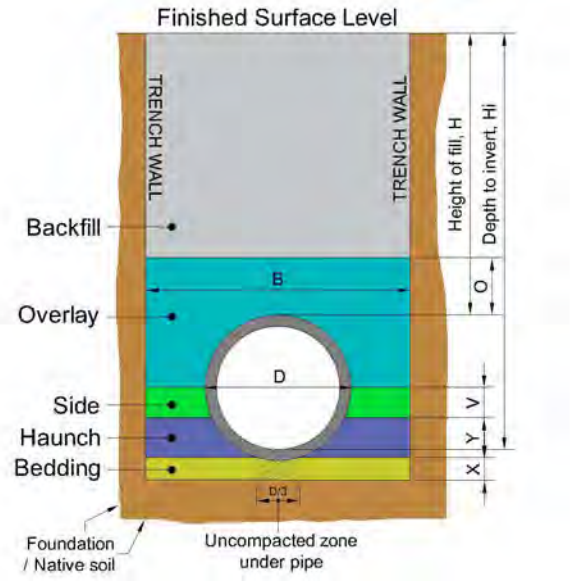
PIPECLASS3
Peace of mind for sustainable infrastructure

Date: 20-May-2025

Design of 450 dia. Class 4 RRJ drainage pipe

PROJECT DETAILS	
Job number:	PS208025
Client:	Oculus
Project:	Dickson Shops and Streetscape
Description:	RCP Pipe Loading Calculation
Designer:	WSP
Company:	Level 2, 121 Marcus Clarke Street Canberra, 2601

DESIGN PARAMETERS	
Installation Condition:	Trench
Pipe Nominal Diameter (mm):	450
Pipe External Diameter, D (mm):	534
Pipeline Orientation:	Both or skew
Soil Type:	clayey sand
Soil Density (kN/m³):	18
Soil Parameter Kμ:	0.15
Trench Width, B (m):	0.934
Height Of Fill, H (m):	0.2
Support Type:	HS2
Bedding Factor:	2.5
Excavation volume (solid) (m³/m)	0.780



In Service Load Cases/Combinations Considered (controlling load case/combination highlighted)

Load Description*	Fill Height (m)	Wg/2.5	Wq/1.5	Tc	Pipe Class
earth	0.4	1.7		1.7	2
W80(AS/NZS3725)	0.4	1.7	29.5	31.2	4
A160(AS/NZS3725)	0.4	1.7	29.5	31.2	4
M1600(AS/NZS3725)	0.4	1.7	22.1	23.8	3
S1600(AS/NZS3725)	0.4	1.7	13.1	14.8	2

All loads in kN/m. *Includes earth load at fill height shown.

Controlling Loads: earth + W80(AS/NZS3725)
Minimum Test Load: Tc = 1.7 + 29.5

Adopt 450 dia. Class 4 RRJ pipe (450/4 RRJ) in accordance with AS/NZS 4058:2007.

Design Notes:

1. In service live loads are considered as acting directly (no distribution) on the pipe (for cover < 0.4 m) in accordance with AS/NZS 3725:2007
2. A nominal wall thickness of 42 mm has been assumed.

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DETAILED LOAD CALCULATIONS

PIPECLASS3
Peace of mind for sustainable infrastructure

Date: 20-May-2025

Design of 450 dia. Class 4 RRJ drainage pipe

PROJECT DETAILS	
Job number:	PS208025
Client:	Oculus
Project:	Dickson Shops and Streetscape
Description:	RCP Pipe Loading Calculation
Designer:	WSP
Company:	Level 2, 121 Marcus Clarke Street Canberra, 2601

In Service Load Cases/Combinations Considered (controlling load case/combination highlighted)

Load Description*	Fill Height (m)	Wg/2.5	Wq/1.5	Tc	Pipe Class
earth	0.4	1.7		1.7	2
W80(AS/NZS3725)	0.4	1.7	29.5	31.2	4
A160(AS/NZS3725)	0.4	1.7	29.5	31.2	4
M1600(AS/NZS3725)	0.4	1.7	22.1	23.8	3
S1600(AS/NZS3725)	0.4	1.7	13.1	14.8	2

All loads in kN/m. *Includes earth load at fill height shown.

EARTH LOADS				
INSTALLATION CONDITION	Trench condition, vertical walls			
PIPE ORIENTATION	Both or skew			
TRENCH WIDTH	B	0.934	m	
Flexible pavement density		24.0	kN/m3	
Flexible pavement thickness		0.150	m	
Effective height of fill	He	0.400	m	
SPANGLER COEFFICIENT	Ct	0.402		Figure 6
WORKING LOAD DUE TO FILL	Wg	6.3	kN/m	Eqn 1
Positive Projection Check				
Settlement ratio	rs	1.000		Cl 6.3.6
Projection ratio	p	0.500		h/D
Plane of equal settlement height	He	0.400		
Modified Spangler coefficient	C'e	1.121		
Working load due to earth fill	Wg	4.3	kN/m	Eqn 2
Positive projection controls	Adopt Wg	4.3	kN/m	Cl 6.3.2

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DETAILED LOAD CALCULATIONS

Date: 20-May-2025

IN-SERVICE LIVE LOADS				
Vehicle	W80(AS/NZS3725)			
Footprint width at top of pipe	L1	1.080	m	AS/NZS3725
Footprint length at top of pipe	L2	0.780	m	
Footprint area	A	0.842	m²	
Load on footprint		80.000	kN	
Impact factor (dynamic load allowance)		1.34		Table C4
Live load pressure at top of pipe	q	127.255	kPa	Eqn 6
Minimum of L2 and D	S	0.534	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	1.661	m	Figure 10
Working load due to live load	Wq	44.2	kN/m	Eqn 7

Vehicle	A160(AS/NZS3725)			
Footprint width at top of pipe	L1	1.080	m	AS/NZS3725
Footprint length at top of pipe	L2	0.780	m	
Footprint area	A	0.842	m²	
Load on footprint		80.000	kN	
Impact factor (dynamic load allowance)		1.34		Table C4
Live load pressure at top of pipe	q	127.255	kPa	Eqn 6
Minimum of L2 and D	S	0.534	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	1.661	m	Figure 10
Working load due to live load	Wq	44.2	kN/m	Eqn 7

Vehicle	M1600(AS/NZS3725)			
Footprint width at top of pipe	L1	1.080	m	AS/NZS3725
Footprint length at top of pipe	L2	0.780	m	
Footprint area	A	0.842	m²	
Load on footprint		60.000	kN	
Impact factor (dynamic load allowance)		1.30		Table C4
Live load pressure at top of pipe	q	92.593	kPa	Eqn 6
Minimum of L2 and D	S	0.534	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	1.661	m	Figure 10
Working load due to live load	Wq (wheel)	32.2	kN/m	Eqn 7
UDL footprint width at top of pipe	L1	3.490	m	
UDL footprint length at top of pipe	L2	1.000	m	
UDL footprint area	A	3.490	m²	
Load on UDL footprint		6.0	kN	
Impact factor (dynamic load allowance)		1.33		Table C4
UDL pressure at top of pipe	q	2.278	kPa	Eqn 6
Minimum of L2 and D for UDL	S	0.534	m	Cl 6.5.3.4.1
Effective supporting length of pipe for UDL	Le	4.071	m	Figure 10
Working load due to live load	Wq (UDL)	1.0	kN/m	Eqn 7
Total working load due to live load	Wq	33.2	kN/m	wheel + UDL

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DETAILED LOAD CALCULATIONS

Date: 20-May-2025

IN-SERVICE LIVE LOADS				
Vehicle	S1600(AS/NZS3725)			
Footprint width at top of pipe	L1	1.080	m	AS/NZS3725
Footprint length at top of pipe	L2	0.780	m	
Footprint area	A	0.842	m²	
Load on footprint		40.000	kN	
Impact factor (dynamic load allowance)		1.00		Table C4
Live load pressure at top of pipe	q	47.483	kPa	Eqn 6
Minimum of L2 and D	S	0.534	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	1.661	m	Figure 10
Working load due to live load	Wq (wheel)	16.5	kN/m	Eqn 7
UDL footprint width at top of pipe	L1	3.490	m	
UDL footprint length at top of pipe	L2	1.000	m	
UDL footprint area	A	3.490	m²	
Load on UDL footprint		24.0	kN	
Impact factor (dynamic load allowance)		1.00		Table C4
UDL pressure at top of pipe	q	6.877	kPa	Eqn 6
Minimum of L2 and D for UDL	S	0.534	m	Cl 6.5.3.4.1
Effective supporting length of pipe for UDL	Le	4.071	m	Figure 10
Working load due to live load	Wq (UDL)	3.1	kN/m	Eqn 7
Total working load due to live load	Wq	19.6	kN/m	wheel + UDL

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PIPE LOAD SUMMARY SHEET

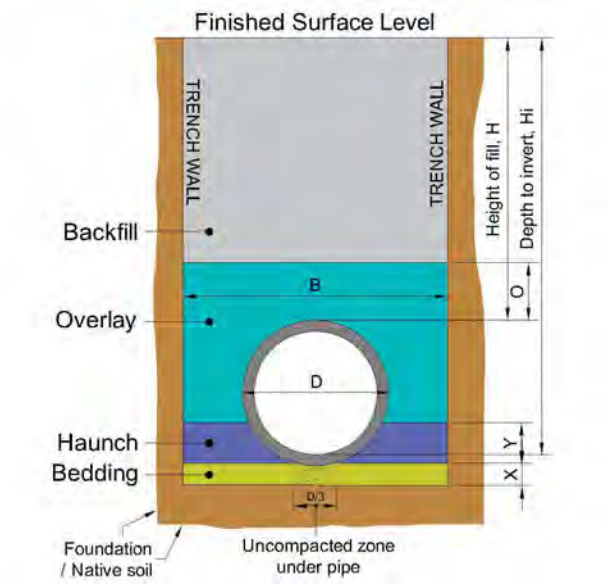
PIPECLASS3
Peace of mind for sustainable infrastructure

Date: 20-May-2025

Design of 525 dia. Class 3 RRJ drainage pipe

PROJECT DETAILS	
Job number:	PS208025
Client:	Oculus
Project:	Dickson Shops and Streetscape
Description:	RCP Pipe Loading Calculation
Designer:	WSP
Company:	Level 2, 121 Marcus Clarke Street Canberra, 2601

DESIGN PARAMETERS	
Installation Condition:	Trench
Pipe Nominal Diameter (mm):	525
Pipe External Diameter, D (mm):	616
Pipeline Orientation:	Both or skew
Soil Type:	clayey sand
Soil Density (kN/m³):	18
Soil Parameter Kμ:	0.15
Trench Width, B (m):	1.016
Height Of Fill, H (m):	0.4
Support Type:	H2
Bedding Factor:	2
Excavation volume (solid) (m³/m)	1.130



In Service Load Cases/Combinations Considered (controlling load case/combination highlighted)

Load Description*	Fill Height (m)	Wg/2.0	Wq/1.5	Tc	Pipe Class
earth	0.4	2.4		2.4	2
W80(AS/NZS3725)	0.4	2.4	32.3	34.7	3
A160(AS/NZS3725)	0.4	2.4	32.3	34.7	3
M1600(AS/NZS3725)	0.4	2.4	24.2	26.6	3
S1600(AS/NZS3725)	0.4	2.4	14.2	16.6	2

All loads in kN/m. *Includes earth load at fill height shown.

Controlling Loads: earth + W80(AS/NZS3725)
Minimum Test Load: Tc = 2.4 + 32.3

Adopt 525 dia. Class 3 RRJ pipe (525/3 RRJ) in accordance with AS/NZS 4058:2007.

Design Notes:

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Concrete Pipe Association of Australasia

PIPE LOAD SUMMARY SHEET

Date: 20-May-2025

1. A nominal wall thickness of 45.5 mm has been assumed.
2. For skewed orientations, this program calculates the worst case of transverse and longitudinal orientations. In rare cases a skew orientation (usually between 40 – 60 °) can theoretically induce a working live load that is marginally higher (<5%) than that calculated when considering either orthogonal orientation. It is recommended that this influence be confirmed independently for these skew situations when the reserve capacity of the determined class of pipe is low.

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DETAILED LOAD CALCULATIONS

PIPECLASS3
Peace of mind for sustainable infrastructure

Date: 20-May-2025

Design of 525 dia. Class 3 RRJ drainage pipe

PROJECT DETAILS	
Job number:	PS208025
Client:	Oculus
Project:	Dickson Shops and Streetscape
Description:	RCP Pipe Loading Calculation
Designer:	WSP
Company:	Level 2, 121 Marcus Clarke Street Canberra, 2601

In Service Load Cases/Combinations Considered (controlling load case/combination highlighted)

Load Description*	Fill Height (m)	Wg/2.0	Wq/1.5	Tc	Pipe Class
earth	0.4	2.4		2.4	2
W80(AS/NZS3725)	0.4	2.4	32.3	34.7	3
A160(AS/NZS3725)	0.4	2.4	32.3	34.7	3
M1600(AS/NZS3725)	0.4	2.4	24.2	26.6	3
S1600(AS/NZS3725)	0.4	2.4	14.2	16.6	2

All loads in kN/m. *Includes earth load at fill height shown.

EARTH LOADS				
INSTALLATION CONDITION	Trench condition, vertical walls			
PIPE ORIENTATION	Both or skew			
TRENCH WIDTH	B	1.016	m	
SPANGLER COEFFICIENT	Ct	0.371		Figure 6
WORKING LOAD DUE TO FILL	Wg	6.9	kN/m	Eqn 1
Positive Projection Check				
Settlement ratio	rs	1.000		Cl 6.3.6
Projection ratio	p	0.700		h/D
Plane of equal settlement height	He	0.400		
Modified Spangler coefficient	C'e	1.104		
Working load due to earth fill	Wg	4.9	kN/m	Eqn 2
Positive projection controls	Adopt Wg	4.9	kN/m	Cl 6.3.2

IN-SERVICE LIVE LOADS				
Vehicle	W80(AS/NZS3725)			
Footprint width at top of pipe	L1	1.080	m	AS/NZS3725
Footprint length at top of pipe	L2	0.780	m	
Footprint area	A	0.842	m²	
Load on footprint		80.000	kN	
Impact factor (dynamic load allowance)		1.34		Table C4
Live load pressure at top of pipe	q	127.255	kPa	Eqn 6
Minimum of L2 and D	S	0.616	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	1.750	m	Figure 10
Working load due to live load	Wq	48.4	kN/m	Eqn 7

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DETAILED LOAD CALCULATIONS

Date: 20-May-2025

IN-SERVICE LIVE LOADS				
Vehicle	A160(AS/NZS3725)			
Footprint width at top of pipe	L1	1.080	m	AS/NZS3725
Footprint length at top of pipe	L2	0.780	m	
Footprint area	A	0.842	m²	
Load on footprint		80.000	kN	
Impact factor (dynamic load allowance)		1.34		Table C4
Live load pressure at top of pipe	q	127.255	kPa	Eqn 6
Minimum of L2 and D	S	0.616	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	1.750	m	Figure 10
Working load due to live load	Wq	48.4	kN/m	Eqn 7

Vehicle	M1600(AS/NZS3725)			
Footprint width at top of pipe	L1	1.080	m	AS/NZS3725
Footprint length at top of pipe	L2	0.780	m	
Footprint area	A	0.842	m²	
Load on footprint		60.000	kN	
Impact factor (dynamic load allowance)		1.30		Table C4
Live load pressure at top of pipe	q	92.593	kPa	Eqn 6
Minimum of L2 and D	S	0.616	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	1.750	m	Figure 10
Working load due to live load	Wq (wheel)	35.2	kN/m	Eqn 7
UDL footprint width at top of pipe	L1	3.780	m	
UDL footprint length at top of pipe	L2	1.000	m	
UDL footprint area	A	3.780	m²	
Load on UDL footprint		6.0	kN	
Impact factor (dynamic load allowance)		1.30		Table C4
UDL pressure at top of pipe	q	2.063	kPa	Eqn 6
Minimum of L2 and D for UDL	S	0.616	m	Cl 6.5.3.4.1
Effective supporting length of pipe for UDL	Le	4.450	m	Figure 10
Working load due to live load	Wq (UDL)	1.1	kN/m	Eqn 7
Total working load due to live load	Wq	36.3	kN/m	wheel + UDL

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DETAILED LOAD CALCULATIONS

Date: 20-May-2025

IN-SERVICE LIVE LOADS				
Vehicle	S1600(AS/NZS3725)			
Footprint width at top of pipe	L1	1.080	m	AS/NZS3725
Footprint length at top of pipe	L2	0.780	m	
Footprint area	A	0.842	m²	
Load on footprint		40.000	kN	
Impact factor (dynamic load allowance)		1.00		Table C4
Live load pressure at top of pipe	q	47.483	kPa	Eqn 6
Minimum of L2 and D	S	0.616	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	1.750	m	Figure 10
Working load due to live load	Wq (wheel)	18.1	kN/m	Eqn 7
UDL footprint width at top of pipe	L1	3.780	m	
UDL footprint length at top of pipe	L2	1.000	m	
UDL footprint area	A	3.780	m²	
Load on UDL footprint		24.0	kN	
Impact factor (dynamic load allowance)		1.00		Table C4
UDL pressure at top of pipe	q	6.349	kPa	Eqn 6
Minimum of L2 and D for UDL	S	0.616	m	Cl 6.5.3.4.1
Effective supporting length of pipe for UDL	Le	4.450	m	Figure 10
Working load due to live load	Wq (UDL)	3.3	kN/m	Eqn 7
Total working load due to live load	Wq	21.4	kN/m	wheel + UDL

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PIPE LOAD SUMMARY SHEET

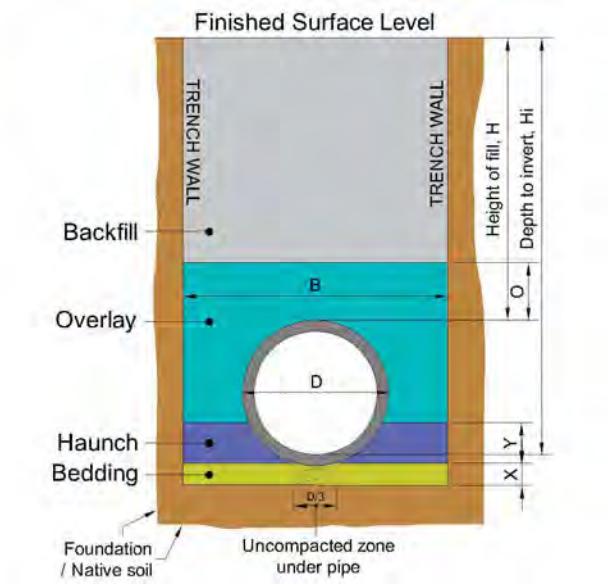
PIPECLASS3
Peace of mind for sustainable infrastructure

Date: 20-May-2025

Design of 525 dia. Class 2 RRJ drainage pipe

PROJECT DETAILS	
Job number:	PS208025
Client:	Oculus
Project:	Dickson Shops and Streetscape
Description:	RCP Pipe Loading Calculation
Designer:	WSP
Company:	Level 2, 121 Marcus Clarke Street Canberra, 2601

DESIGN PARAMETERS	
Installation Condition:	Trench
Pipe Nominal Diameter (mm):	525
Pipe External Diameter, D (mm):	616
Pipeline Orientation:	Both or skew
Soil Type:	clayey sand
Soil Density (kN/m³):	18
Soil Parameter Kμ:	0.15
Trench Width, B (m):	0.916
Height Of Fill, H (m):	0.75
Support Type:	H2
Bedding Factor:	2
Excavation volume (solid) (m³/m)	1.340



In Service Load Cases/Combinations Considered (controlling load case/combination highlighted)

Load Description*	Fill Height (m)	Wg/2.0	Wq/1.5	Tc	Pipe Class
earth	0.75	5		5	2
W80(AS/NZS3725)	0.75	5	14.6	19.6	2
A160(AS/NZS3725)	0.75	5	14.6	19.6	2
M1600(AS/NZS3725)	0.75	5	13.7	18.7	2
S1600(AS/NZS3725)	0.75	5	9	14	2

All loads in kN/m. *Includes earth load at fill height shown.

Controlling Loads: earth + W80(AS/NZS3725)
Minimum Test Load: Tc = 5 + 14.6

Adopt 525 dia. Class 2 RRJ pipe (525/2 RRJ) in accordance with AS/NZS 4058:2007.

Design Notes:

1. A nominal wall thickness of 45.5 mm has been assumed.

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Concrete Pipe Association of Australasia

DETAILED LOAD CALCULATIONS

PIPECLASS3
Peace of mind for sustainable infrastructure

Date: 20-May-2025

Design of 525 dia. Class 2 RRJ drainage pipe

PROJECT DETAILS	
Job number:	PS208025
Client:	Oculus
Project:	Dickson Shops and Streetscape
Description:	RCP Pipe Loading Calculation
Designer:	WSP
Company:	Level 2, 121 Marcus Clarke Street Canberra, 2601

In Service Load Cases/Combinations Considered (controlling load case/combination highlighted)

Load Description*	Fill Height (m)	Wg/2.0	Wq/1.5	Tc	Pipe Class
earth	0.75	5		5	2
W80(AS/NZS3725)	0.75	5	14.6	19.6	2
A160(AS/NZS3725)	0.75	5	14.6	19.6	2
M1600(AS/NZS3725)	0.75	5	13.7	18.7	2
S1600(AS/NZS3725)	0.75	5	9	14	2

All loads in kN/m. *Includes earth load at fill height shown.

EARTH LOADS				
INSTALLATION CONDITION	Trench condition, vertical walls			
PIPE ORIENTATION	Both or skew			
TRENCH WIDTH	B	0.916	m	
SPANGLER COEFFICIENT	Ct	0.726		Figure 6
WORKING LOAD DUE TO FILL	Wg	11.0	kN/m	Eqn 1
Positive Projection Check				
Settlement ratio	rs	1.000		Cl 6.3.6
Projection ratio	p	0.700		h/D
Plane of equal settlement height	He	0.750		
Modified Spangler coefficient	C'e	1.207		
Working load due to earth fill	Wg	10.0	kN/m	Eqn 2
Positive projection controls	Adopt Wg	10.0	kN/m	Cl 6.3.2

IN-SERVICE LIVE LOADS				
Vehicle	W80(AS/NZS3725)			
Footprint width at top of pipe	L1	1.588	m	AS/NZS3725
Footprint length at top of pipe	L2	1.287	m	
Footprint area	A	2.044	m²	
Load on footprint		80.000	kN	
Impact factor (dynamic load allowance)		1.29		Table C4
Live load pressure at top of pipe	q	50.397	kPa	Eqn 6
Minimum of L2 and D	S	0.616	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	2.258	m	Figure 10
Working load due to live load	Wq	21.8	kN/m	Eqn 7

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Concrete Pipe Association of Australasia

DETAILED LOAD CALCULATIONS

Date: 20-May-2025

IN-SERVICE LIVE LOADS				
Vehicle	A160(AS/NZS3725)			
Footprint width at top of pipe	L1	1.588	m	AS/NZS3725
Footprint length at top of pipe	L2	1.287	m	
Footprint area	A	2.044	m²	
Load on footprint		80.000	kN	
Impact factor (dynamic load allowance)		1.29		Table C4
Live load pressure at top of pipe	q	50.397	kPa	Eqn 6
Minimum of L2 and D	S	0.616	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	2.258	m	Figure 10
Working load due to live load	Wq	21.8	kN/m	Eqn 7

Vehicle	M1600(AS/NZS3725)			
Footprint width at top of pipe	L1	3.787	m	AS/NZS3725
Footprint length at top of pipe	L2	1.588	m	
Footprint area	A	6.014	m²	
Load on footprint		180.000	kN	
Impact factor (dynamic load allowance)		1.26		Table C4
Live load pressure at top of pipe	q	37.601	kPa	Eqn 6
Minimum of L2 and D	S	0.616	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	4.457	m	Figure 10
Working load due to live load	Wq (wheel)	19.7	kN/m	Eqn 7
UDL footprint width at top of pipe	L1	4.288	m	
UDL footprint length at top of pipe	L2	1.000	m	
UDL footprint area	A	4.288	m²	
Load on UDL footprint		6.0	kN	
Impact factor (dynamic load allowance)		1.26		Table C4
UDL pressure at top of pipe	q	1.758	kPa	Eqn 6
Minimum of L2 and D for UDL	S	0.616	m	Cl 6.5.3.4.1
Effective supporting length of pipe for UDL	Le	4.957	m	Figure 10
Working load due to live load	Wq (UDL)	0.9	kN/m	Eqn 7
Total working load due to live load	Wq	20.6	kN/m	wheel + UDL

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DETAILED LOAD CALCULATIONS

Date: 20-May-2025

IN-SERVICE LIVE LOADS				
Vehicle	S1600(AS/NZS3725)			
Footprint width at top of pipe	L1	3.787	m	AS/NZS3725
Footprint length at top of pipe	L2	1.588	m	
Footprint area	A	6.014	m²	
Load on footprint		120.000	kN	
Impact factor (dynamic load allowance)		1.00		Table C4
Live load pressure at top of pipe	q	19.954	kPa	Eqn 6
Minimum of L2 and D	S	0.616	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	4.457	m	Figure 10
Working load due to live load	Wq (wheel)	10.4	kN/m	Eqn 7
UDL footprint width at top of pipe	L1	4.288	m	
UDL footprint length at top of pipe	L2	1.000	m	
UDL footprint area	A	4.288	m²	
Load on UDL footprint		24.0	kN	
Impact factor (dynamic load allowance)		1.00		Table C4
UDL pressure at top of pipe	q	5.598	kPa	Eqn 6
Minimum of L2 and D for UDL	S	0.616	m	Cl 6.5.3.4.1
Effective supporting length of pipe for UDL	Le	4.957	m	Figure 10
Working load due to live load	Wq (UDL)	3.0	kN/m	Eqn 7
Total working load due to live load	Wq	13.4	kN/m	wheel + UDL

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PIPE LOAD SUMMARY SHEET

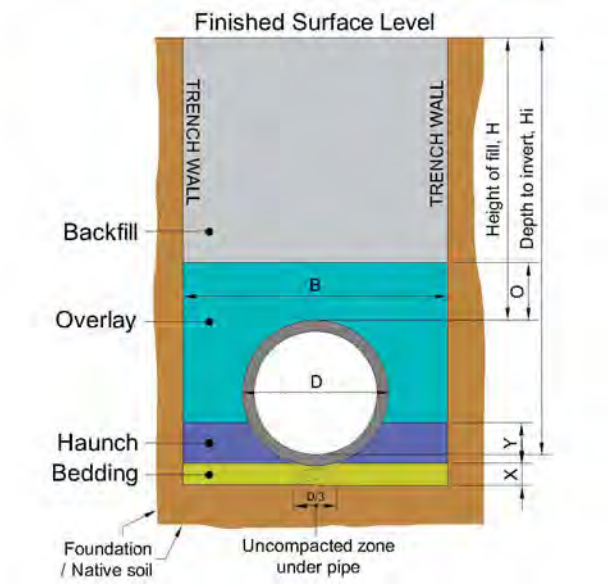
PIPECLASS3
Peace of mind for sustainable infrastructure

Date: 20-May-2025

Design of 600 dia. Class 2 RRJ drainage pipe

PROJECT DETAILS	
Job number:	PS208025
Client:	Oculus
Project:	Dickson Shops and Streetscape
Description:	RCP Pipe Loading Calculation
Designer:	WSP
Company:	Level 2, 121 Marcus Clarke Street Canberra, 2601

DESIGN PARAMETERS	
Installation Condition:	Trench
Pipe Nominal Diameter (mm):	600
Pipe External Diameter, D (mm):	699
Pipeline Orientation:	Both or skew
Soil Type:	clayey sand
Soil Density (kN/m³):	18
Soil Parameter Kμ:	0.15
Trench Width, B (m):	0.999
Height Of Fill, H (m):	0.6
Support Type:	H2
Bedding Factor:	2
Excavation volume (solid) (m³/m)	1.400



In Service Load Cases/Combinations Considered (controlling load case/combination highlighted)

Load Description*	Fill Height (m)	Wg/2.0	Wq/1.5	Tc	Pipe Class
earth	0.677	4.9		4.9	2
W80(AS/NZS3725)	0.677	4.9	18.3	23.2	2
A160(AS/NZS3725)	0.677	4.9	18.3	23.2	2
M1600(AS/NZS3725)	0.677	4.9	14.1	19	2
S1600(AS/NZS3725)	0.677	4.9	9.3	14.2	2

All loads in kN/m. *Includes earth load at fill height shown.

Controlling Loads: earth + W80(AS/NZS3725)
Minimum Test Load: Tc = 4.9 + 18.3

Adopt 600 dia. Class 2 RRJ pipe (600/2 RRJ) in accordance with AS/NZS 4058:2007.

Design Notes:

1. A nominal wall thickness of 49.5 mm has been assumed.

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Concrete Pipe Association of Australasia

DETAILED LOAD CALCULATIONS

PIPECLASS3
Peace of mind for sustainable infrastructure

Date: 20-May-2025

Design of 600 dia. Class 2 RRJ drainage pipe

PROJECT DETAILS	
Job number:	PS208025
Client:	Oculus
Project:	Dickson Shops and Streetscape
Description:	RCP Pipe Loading Calculation
Designer:	WSP
Company:	Level 2, 121 Marcus Clarke Street Canberra, 2601

In Service Load Cases/Combinations Considered(controlling load case/combination highlighted)

Load Description*	Fill Height (m)	Wg/2.0	Wq/1.5	Tc	Pipe Class
earth	0.677	4.9		4.9	2
W80(AS/NZS3725)	0.677	4.9	18.3	23.2	2
A160(AS/NZS3725)	0.677	4.9	18.3	23.2	2
M1600(AS/NZS3725)	0.677	4.9	14.1	19	2
S1600(AS/NZS3725)	0.677	4.9	9.3	14.2	2

All loads in kN/m. *Includes earth load at fill height shown.

EARTH LOADS				
INSTALLATION CONDITION	Trench condition, vertical walls			
PIPE ORIENTATION	Both or skew			
TRENCH WIDTH	B	0.999	m	
Flexible pavement density		23.0	kN/m3	
Flexible pavement thickness		0.060	m	
Effective height of fill	He	0.677	m	
SPANGLER COEFFICIENT	Ct	0.613		Figure 6
WORKING LOAD DUE TO FILL	Wg	11.0	kN/m	Eqn 1
Positive Projection Check				
Settlement ratio	rs	1.000		Cl 6.3.6
Projection ratio	p	0.700		h/D
Plane of equal settlement height	He	0.677		
Modified Spangler coefficient	C'e	1.160		
Working load due to earth fill	Wg	9.9	kN/m	Eqn 2
Positive projection controls	Adopt Wg	9.9	kN/m	Cl 6.3.2

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Concrete Pipe Association of Australasia

DETAILED LOAD CALCULATIONS

Date: 20-May-2025

IN-SERVICE LIVE LOADS				
Vehicle	W80(AS/NZS3725)			
Footprint width at top of pipe	L1	1.482	m	AS/NZS3725
Footprint length at top of pipe	L2	1.182	m	
Footprint area	A	1.752	m²	
Load on footprint		80.000	kN	
Impact factor (dynamic load allowance)		1.30		Table C4
Live load pressure at top of pipe	q	59.299	kPa	Eqn 6
Minimum of L2 and D	S	0.699	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	2.242	m	Figure 10
Working load due to live load	Wq	27.4	kN/m	Eqn 7

Vehicle	A160(AS/NZS3725)			
Footprint width at top of pipe	L1	1.482	m	AS/NZS3725
Footprint length at top of pipe	L2	1.182	m	
Footprint area	A	1.752	m²	
Load on footprint		80.000	kN	
Impact factor (dynamic load allowance)		1.30		Table C4
Live load pressure at top of pipe	q	59.299	kPa	Eqn 6
Minimum of L2 and D	S	0.699	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	2.242	m	Figure 10
Working load due to live load	Wq	27.4	kN/m	Eqn 7

Vehicle	M1600(AS/NZS3725)			
Footprint width at top of pipe	L1	1.482	m	AS/NZS3725
Footprint length at top of pipe	L2	1.182	m	
Footprint area	A	1.752	m²	
Load on footprint		60.000	kN	
Impact factor (dynamic load allowance)		1.27		Table C4
Live load pressure at top of pipe	q	43.342	kPa	Eqn 6
Minimum of L2 and D	S	0.699	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	2.242	m	Figure 10
Working load due to live load	Wq (wheel)	20.0	kN/m	Eqn 7
UDL footprint width at top of pipe	L1	4.070	m	
UDL footprint length at top of pipe	L2	1.000	m	
UDL footprint area	A	4.070	m²	
Load on UDL footprint		6.0	kN	
Impact factor (dynamic load allowance)		1.27		Table C4
UDL pressure at top of pipe	q	1.880	kPa	Eqn 6
Minimum of L2 and D for UDL	S	0.699	m	Cl 6.5.3.4.1
Effective supporting length of pipe for UDL	Le	4.830	m	Figure 10
Working load due to live load	Wq (UDL)	1.1	kN/m	Eqn 7
Total working load due to live load	Wq	21.1	kN/m	wheel + UDL

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DETAILED LOAD CALCULATIONS

Date: 20-May-2025

IN-SERVICE LIVE LOADS				
Vehicle	S1600(AS/NZS3725)			
Footprint width at top of pipe	L1	1.482	m	AS/NZS3725
Footprint length at top of pipe	L2	1.182	m	
Footprint area	A	1.752	m²	
Load on footprint		40.000	kN	
Impact factor (dynamic load allowance)		1.00		Table C4
Live load pressure at top of pipe	q	22.835	kPa	Eqn 6
Minimum of L2 and D	S	0.699	m	Cl 6.5.3.4.1
Effective supporting length of pipe	Le	2.242	m	Figure 10
Working load due to live load	Wq (wheel)	10.6	kN/m	Eqn 7
UDL footprint width at top of pipe	L1	4.070	m	
UDL footprint length at top of pipe	L2	1.000	m	
UDL footprint area	A	4.070	m²	
Load on UDL footprint		24.0	kN	
Impact factor (dynamic load allowance)		1.00		Table C4
UDL pressure at top of pipe	q	5.897	kPa	Eqn 6
Minimum of L2 and D for UDL	S	0.699	m	Cl 6.5.3.4.1
Effective supporting length of pipe for UDL	Le	4.830	m	Figure 10
Working load due to live load	Wq (UDL)	3.5	kN/m	Eqn 7
Total working load due to live load	Wq	14.0	kN/m	wheel + UDL

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Appendix N

Non-Conformance Lists

Summary of Departures from Standards (Lighting)

Item	MIS Standard	Technical Requirement	Proposed Provision	Further Comment
	ACTSD-4201 pre-approved luminaire table MIS-14 Public Lighting	TCCS prefers the use of pre-approved luminaires as listed on the Public Lighting Standard Drawings ACTSD-4201. MIS 14: 3.1.2 Decorative Luminaires In some instances, decorative luminaires may be provided for enhanced amenity which are not deemed 'equivalent' by TCCS	Luminaires that are not on the pre-approved list have been proposed, as those on the list were not generally suitable for the project. The luminaires were chosen for improved aesthetics and visual performance.	All luminaire types have been discussed with TCCS and approved. Luminaires proposed generally meet they TCCS technical requirements.
	MIS 14 Public Lighting 3.1 Luminaires	Preference for zero upward waste light ratio	Pedestrian area luminaires with <3% upward waste light ratio are proposed, to balance environmental performance with improved vertical illuminance for safety and comfort.	This proposal was discussed with TCCS and approved.
	MIS 14 Public Lighting 3.1 Luminaires	Every luminaire installed as an unmetered connection point must be listed on the Australian Energy Market Operator (AEMO) National Electricity Market Load Table for Unmetered Connection Points	A small amount of decorative lighting (1.172kW total) is from non-AEMO-listed loads. This non-standard decorative lighting is recommended to be included to assist with improving public amenity and comfort, and providing architecturally-appropriate outcomes.	This has been discussed with TCCS and approved.
	MIS 14 Public Lighting	Standard column heights	Due to low-height building awnings and narrow spaces between awnings, proposed pole heights in some areas are lower than standard. Standard height poles would be above building awnings and not provide adequate illumination due to shading.	This has been discussed with TCCS and approved.
	MIS 14 Public Lighting	2.6.9 Luminaires Fixed to Buildings Luminaires fixed to buildings which will become TCCS assets for the purpose of public lighting, will generally not be accepted.	In some areas where building awnings and narrow pathways make the use of poles unfeasible, luminaires mounted to buildings have been proposed.	This has been discussed with TCCS and approved.

Summary of Departures from Standards (Civil)

Item	MIS Standard	Technical Requirement	Proposed Provision	Further Comment
1	MIS 08 Stormwater	MIS 9.7 Manholes: Manholes shall be constructed in accordance with ACTSD-0827 1050 ND manholes or ACTSD-0828 as required	It is noted that the TCCS standard pits are typically for a road corridor, and standard sumps are not also ideal for paved open spaces. The proposed pit sizing, functionality, spatial constraints have necessitated consideration of alternatives pit types. Additionally grates are required to capture stormwater from the surfaces.	Some of the non-TCCS pits are available in a range of smaller sizes and wide variety of materials (Glass Reinforced Concrete, Polymer) , and these products and their lids are typically certified to Australian standards (AS3500 & AS 3996)
2	MIS 08 Stormwater	MIS 7.1.2 Minimum Pipe diameter: Any pipe draining water from a surface subject to traffic loads 375mm	Pipe diameters of 225mm provided at some trafficable locations due to limited cover depth. Pipes under flexible pavement at shallow depths are to be encased to protect from damage.	This is an existing issue that cannot be addressed as part of a renewal scheme.
3	MIS 08 Stormwater	MIS 7.3.2 Stormwater pipelines shall be designed and constructed to be self-cleansing (e.g. free from accumulation of silt). The desirable minimum grade for pipelines is 1.0%. An absolute minimum grade of 0.5% may be acceptable where steeper grades are not practical. Such instances shall be brought to the attention of TCCS for consideration before finalising designs.	Some pipes are flatter than 1% in many areas across site as existing levels downstream restrict depths. Minimum gradients applied are compliant with AS 3500.	This is an existing issue that cannot be addressed as part of a renewal scheme.
4	MIS 08 Stormwater	MIS 7.3.1.1 Minimum cover over pipelines shall be 0.6 m from top of pipe to finished surface level. For pipelines under road pavements, the required cover shall be measured from top of pipe to pavement subgrade level. Where this is not possible, a higher pipe class shall be selected to provide adequate strength to meet overburden, construction and traffic loads in accordance with Section 7.1.3.1. TCCS approval is required to be sought where it is proposed to adopt less than the minimum cover requirements.	Pipe cover reduces to less than 0.3m is some locations as existing network is shallow and downstream invert levels restrict depths. Cover is compliant with AS 3500, and higher strength class pipe and concrete encasement may be considered	This is an existing issue that cannot be addressed as part of a renewal scheme.

Item	MIS Standard	Technical Requirement	Proposed Provision	Further Comment
5	MIS 08 Stormwater	MIS 1.2.3 Conceptualise Continuous: Continuous designated overland flow paths shall be provided from the top of the catchment through the entire urban area to ensure a clear major drainage network.	Overland flood analysis (for a major storm) for the site is outside the project scope, which is focused on renewal of the existing stormwater assets in poor condition.	
6	MIS 08 Stormwater	MIS 9.4.7 Minimum fall: A minimum fall of 50 mm shall be provided through a sump or manhole (refer to Figure 8-10). A 50 mm minimum fall shall also be provided for pipelines designed to operate under hydraulic head at maximum design flow.	Sumps may be introduced as some locations as existing network levels downstream restrict depths to introduce 50mm falls through pits.	Locations will be selected to ensure ease of access for maintenance.
7	MIS 08 Stormwater	MIS 7.5.2 Branch connections: Requirement: Pipeline junctions should occur within a sump, manhole or special structure. Branch connections may be permitted provided that adequate structural strength can be achieved at the junction. Requirement: A manhole shall be constructed on the branch pipeline within 20 m of the branch connection. Entry angle: Entry angles for branches shall be between 45° and 90° to the main pipeline in horizontal direction only (refer to Figure 8-7). Vertical entry will not be permitted.	Some of the downpipe/property connections are assumed to be via branches, and these are to be retained unless where damaged.	This is an existing issue that cannot be addressed as part of a renewal scheme.

Item	MIS Standard	Technical Requirement	Proposed Provision	Further Comment
8	MIS 08 Stormwater	MIS 7.7 Service ties: Requirement: Each new lease shall be individually serviced with a single service tie and riser from a stormwater pipeline to provide for drainage of buildings on the lease. However, on redevelopment and large multi-unit sites, if the provision of a single tie will not service the entire lease or is considered impractical, TCCS may permit additional service ties to be provided. Exception: In some cases, such as blocks in a cul-de-sac or for 'preserved environmental areas', specific approval may be given for a direct connection to a stormwater pipeline to be waived and provision made for drainage to be connected to a road gutter or directed to an overland drainage path. Standard Drawing: Service ties and risers shall be provided in accordance with ACTSD-0802.	Details of buried existing property connections are unknown, and reinstalling as individually serviced connections with a single service tie and riser is impractical due to the layouts of the blocks. The connections as per ACTSD-0802 cannot be achieved due to the spatial constraint and atypical block configuration.	This is an existing issue that cannot be addressed as part of a renewal scheme.
9	MIS 08 Stormwater	MIS 7.7.1 Service tie depths Requirement: The service tie shall be deep enough such that the lease drainage system can command the whole lease at a grade not less than 0.5% with 400 mm minimum cover within the lease. Minimum cover: The service tie shall have 600 mm minimum cover over lease drainage pipes at the service tie connection	Details of buried existing property connections are unknown, and even where these may need to be replaced, the minimum cover depths of 600mm cannot be achieved due to the overall shallow network. Practical considerations to apply where property connections are encountered.	This is an existing issue that cannot be addressed as part of a renewal scheme.

Item	MIS Standard	Technical Requirement	Proposed Provision	Further Comment
10	MIS 08 Stormwater	MIS 7.7.8 Clearance from other services: Minimum clearances between stormwater pipelines and other underground services shall be in accordance with Table 8-25	Existing pipe corridors are to be retained across the site and at several locations' horizontal clearance of 600mm cannot be achieved.	This is an existing issue that cannot be addressed as part of a renewal scheme.
11	MIS 01 Street planning and design	5.4.2.2 Minimum grades Requirement: Conform to the following minimum grades. Road with kerb and gutter: Minimum desirable grade: 1%. Flatter grades (between 0.5% and 1.0%) may be permitted subject to providing satisfactory evidence that drainage provision and the proposed construction practices are such that ponding will not occur. Grades flatter that 0.5% may be permitted only in exceptional circumstances (i.e. widening of existing pavement). The designer shall outline procedures that will ensure that the finished gutter profile and pavement surface are free draining and that the width of flow is within the requirements	Existing sections of Joan Kellet way are less than 0.5%, and the new Kerb is installed to follow this (but generally to be less than the absolute min of 0.3% as advised in Austroads Guide to Road Design Part 5A). Linear channels (Trench grates) are proposed in this location to assist with the draining this area (and there is no clear guidance on this in MIS standards).	This is an existing issue that cannot be addressed as part of a renewal scheme.
12	MIS 06 Verges	2.1.2 Verge crossfall General: Changes of grade across the verge should not be so severe that vehicles cannot easily enter block driveways without scraping. In general, because driveways can be located at any location along the verge, the whole verge needs to be designed to suit vehicle access. Crossfalls in verge: Grade towards the carriageway unless the verge has been designed to convey run-off into open space areas. Conform to the following: Desirable minimum: 1 in 50. Desirable maximum: 1 in 6.	Paved areas adjacent to Joan Kellet way are flatter than 1 in 50. The design provides a minimum grade of 0.5% in these areas.	This is an existing issue that cannot be addressed as part of a renewal scheme.

Binder 3a 898

1.1 Design Compliance

Design Departures

Description			Notes
Item #	**Description of Change/Departure**	**Justification for Change**	
1.0	Proposed trees placed closer then the 1.85m from the face of kerb along Joan Kellett Way.	Trees were located 1.57m from the front face of kerb to achieve the requested 3.0m active route through the shops precinct as requested by key stakeholders.	-
2.0	Proposed bin within Zone C (refer to L206 - Surface Finishes Plan - Zone C) are not located within 6m of a serviceable entrance. Bins are located approximately 26m from Dickson Place.	Bins were located within the southern portion of the Shops Precinct to provide adequate opportunities for the public to dispose of waste within the Precinct. This is also co-located with the provision of outdoor dining to be retained within the Precinct.	-
3.0	Timber decking has been retained within Taglietti Square and Zone A.	Timber to be maintained by the City Renewal Authority.	-

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Appendix O

Engineering Drawing Register and Engineering Drawings

ENGINEERING DRAWING LIST

Discipline	Dwg Number	Title	Revision	Last issue Date
Civil	C000	COVER SHEET, LOCALITY PLAN AND DRAWING SCHEDULE	P8	28.05.25
Civil	C001	GENERAL PROJECT NOTES AND REQUIREMENTS	P8	28.05.25
Civil	C005	EXISTING CONDITIONS PLAN	P8	28.05.25
Civil	C010	EROSION AND SEDIMENT CONTROL LAYOUT PLAN	P8	28.05.25
Civil	C011	EROSION AND SEDIMENT NOTES AND DETAIL	P8	28.05.25
Civil	C020	STORMWATER DRAINAGE OVERALL LAYOUT PLAN	P8	28.05.25
Civil	C021	STORMWATER DRAINAGE LAYOUT PLAN SHEET 1	P8	28.05.25
Civil	C022	STORMWATER DRAINAGE LAYOUT PLAN SHEET 2	P8	28.05.25
Civil	C023	STORMWATER DRAINAGE LAYOUT PLAN SHEET 3	P8	28.05.25
Civil	C024	STORMWATER DRAINAGE LAYOUT PLAN SHEET 4	P8	28.05.25
Civil	C025	STORMWATER DRAINAGE LAYOUT PLAN SHEET 5	P8	28.05.25
Civil	C026	STORMWATER DRAINAGE LAYOUT PLAN SHEET 6	P8	28.05.25
Civil	C027	STORMWATER DRAINAGE LAYOUT PLAN SHEET 7	P8	28.05.25
Civil	C030	CIVIL WORKS LAYOUT OVERALL LAYOUT PLAN	P8	28.05.25
Civil	C031	CIVIL WORKS LAYOUT PLAN SHEET 1	P8	28.05.25
Civil	C032	CIVIL WORKS LAYOUT PLAN SHEET 2	P8	28.05.25
Civil	C033	CIVIL WORKS LAYOUT PLAN SHEET 3	P8	28.05.25
Civil	C034	CIVIL WORKS LAYOUT PLAN SHEET 4	P8	28.05.25
Civil	C035	CIVIL WORKS LAYOUT PLAN SHEET 5	P8	28.05.25
Civil	C036	CIVIL WORKS LAYOUT PLAN SHEET 6	P8	28.05.25
Civil	C037	CIVIL WORKS LAYOUT PLAN SHEET 7	P8	28.05.25
Civil	C040	PAVEMENT LAYOUT OVERALL LAYOUT PLAN	P8	28.05.25
Civil	C041	PAVEMENT LAYOUT PLAN SHEET 1	P8	28.05.25
Civil	C042	PAVEMENT LAYOUT PLAN SHEET 2	P8	28.05.25
Civil	C043	PAVEMENT LAYOUT PLAN SHEET 3	P8	28.05.25
Civil	C044	PAVEMENT LAYOUT PLAN SHEET 4	P8	28.05.25
Civil	C045	PAVEMENT LAYOUT PLAN SHEET 5	P8	28.05.25
Civil	C046	PAVEMENT LAYOUT PLAN SHEET 6	P8	28.05.25
Civil	C047	PAVEMENT LAYOUT PLAN SHEET 7	P8	28.05.25
Civil	C050	TRAFFIC CONTROL DEVICES OVERALL LAYOUT PLAN	P8	28.05.25
Civil	C051	TRAFFIC CONTROL DEVICES LAYOUT PLAN SHEET 1	P8	28.05.25
Civil	C052	TRAFFIC CONTROL DEVICES LAYOUT PLAN SHEET 2	P8	28.05.25
Civil	C053	TRAFFIC CONTROL DEVICES LAYOUT PLAN SHEET 3	P8	28.05.25
Civil	C054	TRAFFIC CONTROL DEVICES LAYOUT PLAN SHEET 4	P8	28.05.25
Civil	C055	TRAFFIC CONTROL DEVICES LAYOUT PLAN SHEET 5	P8	28.05.25
Civil	C056	TRAFFIC CONTROL DEVICES LAYOUT PLAN SHEET 6	P8	28.05.25
Civil	C057	TRAFFIC CONTROL DEVICES LAYOUT PLAN SHEET 7	P8	28.05.25
Civil	C060	EARTHWORKS CUT AND FILL OVERALL LAYOUT PLAN	P8	28.05.25
Civil	C061	EARTHWORKS CUT AND FILL LAYOUT PLAN SHEET 1	P8	28.05.25
Civil	C062	EARTHWORKS CUT AND FILL LAYOUT PLAN SHEET 2	P8	28.05.25
Civil	C063	EARTHWORKS CUT AND FILL LAYOUT PLAN SHEET 3	P8	28.05.25
Civil	C064	EARTHWORKS CUT AND FILL LAYOUT PLAN SHEET 4	P8	28.05.25
Civil	C065	EARTHWORKS CUT AND FILL LAYOUT PLAN SHEET 5	P8	28.05.25
Civil	C066	EARTHWORKS CUT AND FILL LAYOUT PLAN SHEET 6	P8	28.05.25
Civil	C067	EARTHWORKS CUT AND FILL LAYOUT PLAN SHEET 7	P8	28.05.25
Civil	C071	STORMWATER DRAINAGE PROFILES SHEET 1	P8	28.05.25
Civil	C072	STORMWATER DRAINAGE PROFILES SHEET 2	P8	28.05.25
Civil	C073	STORMWATER DRAINAGE PROFILES SHEET 3	P8	28.05.25
Civil	C075	STORMWATER DRAINAGE SCHEDULES	P8	28.05.25
Civil	C101	CIVIL WORKS DETAILS SHEET 1	P8	28.05.25
Civil	C102	CIVIL WORKS DETAILS SHEET 2	P8	28.05.25
Civil	C103	CIVIL WORKS DETAILS SHEET 3	P8	28.05.25
Civil	C104	CIVIL WORKS DETAILS SHEET 4	P8	28.05.25
Civil	C105	CIVIL WORKS DETAILS SHEET 5	P8	28.05.25

ENGINEERING DRAWING LIST

Discipline	Dwg Number	Title	Revision	Last issue Date
Electrical	E000	COVER SHEET AND DRAWING INDEX	P8	28.05.25
Electrical	E001	LEGEND OF SYMBOLS	P8	28.05.25
Electrical	E010	SITE DEMOLITION LAYOUT	P7	28.05.25
Electrical	E100	PROPOSED LIGHTING LAYOUT	P8	28.05.25
Electrical	E110	LIGHTING DETAILS	P4	28.05.25
Electrical	E200	PROPOSED POWER AND LIGHTING RETICULATION LAYOUT	P10	28.05.25
Electrical	E300	SINGLE LINE DIAGRAM	P9	28.05.25
Electrical	E400	SPECIFICATION	P8	28.05.25
Structural	ST_01-000	FACE SHEET AND DRAWING INDEX	P7	09.09.25
Structural	ST_01-001	GENERAL NOTES - SHEET 1	P6	09.09.25
Structural	ST_01-002	GENERAL NOTES - SHEET 2	P6	09.09.25
Structural	ST_01-010	TYPICAL STEELWORK DETAILS	P5	09.09.25
Structural	ST_01-100	LANDSCAPE GENERAL ARRANGEMENT PLAN	P8	09.09.25
Structural	ST_01-101	TIMBER DECK PLANS, SECTIONS AND DETAILS - SHEET 1	P6	09.09.25
Structural	ST_01-102	TIMBER DECK PLANS, SECTIONS AND DETAILS - SHEET 2	P6	09.09.25
Structural	ST_01-103	TIMBER DECK PLANS, SECTIONS AND DETAILS - SHEET 3	P5	09.09.25
Structural	ST_01-104	TIMBER DECK PLANS, SECTIONS AND DETAILS - SHEET 4	P5	09.09.25
Structural	ST_01-110	TYPICAL MULTIPOLE STREETLIGHT DETAILS - SHEET 1	P7	09.09.25
Structural	ST_01-111	TYPICAL MULTIPOLE STREETLIGHT DETAILS (ALTERNATIVE) - SHEET 2	P6	09.09.25
Structural	ST_01-120	TYPICAL LANDSCAPE DETAILS - SHEET 1	P7	09.09.25
Structural	ST_01-121	TYPICAL LANDSCAPE DETAILS - SHEET 2	P7	09.09.25

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PRINT IN COLOUR

DICKSON SHOPS AND STREETSCAPE

CIVIL DRAWINGS

DRAWING INDEX	
DRAWING NUMBER	**DRAWING TITLE**
C000	COVER SHEET, LOCALITY PLAN AND DRAWING SCHEDULE
C001	GENERAL PROJECT NOTES AND REQUIREMENTS
C005	EXISTING CONDITIONS PLAN
C010	EROSION AND SEDIMENT CONTROL LAYOUT PLAN
C011	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
C020	STORMWATER DRAINAGE OVERALL LAYOUT PLAN
C021	STORMWATER DRAINAGE LAYOUT PLAN SHEET 1
C022	STORMWATER DRAINAGE LAYOUT PLAN SHEET 2
C023	STORMWATER DRAINAGE LAYOUT PLAN SHEET 3
C024	STORMWATER DRAINAGE LAYOUT PLAN SHEET 4
C025	STORMWATER DRAINAGE LAYOUT PLAN SHEET 5
C026	STORMWATER DRAINAGE LAYOUT PLAN SHEET 6
C027	STORMWATER DRAINAGE LAYOUT PLAN SHEET 7
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C035	CIVIL WORKS LAYOUT PLAN SHEET 5
C036	CIVIL WORKS LAYOUT PLAN SHEET 6
C037	CIVIL WORKS LAYOUT PLAN SHEET 7
C040	PAVEMENT OVERALL LAYOUT PLAN
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C043	PAVEMENT LAYOUT PLAN SHEET 3
C044	PAVEMENT LAYOUT PLAN SHEET 4
C045	PAVEMENT LAYOUT PLAN SHEET 5
C046	PAVEMENT LAYOUT PLAN SHEET 6
C047	PAVEMENT LAYOUT PLAN SHEET 7

DRAWING INDEX	
DRAWING NUMBER	**DRAWING TITLE**
C050	TRAFFIC CONTROL DEVICES OVERALL LAYOUT PLAN
C051	TRAFFIC CONTROL DEVICES LAYOUT PLAN SHEET 1
C052	TRAFFIC CONTROL DEVICES LAYOUT PLAN SHEET 2
C053	TRAFFIC CONTROL DEVICES LAYOUT PLAN SHEET 3
C054	TRAFFIC CONTROL DEVICES LAYOUT PLAN SHEET 4
C055	TRAFFIC CONTROL DEVICES LAYOUT PLAN SHEET 5
C056	TRAFFIC CONTROL DEVICES LAYOUT PLAN SHEET 6
C057	TRAFFIC CONTROL DEVICES LAYOUT PLAN SHEET 7
C060	EARTHWORKS CUT AND FILL OVERALL LAYOUT PLAN
C061	EARTHWORKS CUT AND FILL LAYOUT PLAN SHEET 1
C062	EARTHWORKS CUT AND FILL LAYOUT PLAN SHEET 2
C063	EARTHWORKS CUT AND FILL LAYOUT PLAN SHEET 3
C064	EARTHWORKS CUT AND FILL LAYOUT PLAN SHEET 4
C065	EARTHWORKS CUT AND FILL LAYOUT PLAN SHEET 5
C066	EARTHWORKS CUT AND FILL LAYOUT PLAN SHEET 6
C067	EARTHWORKS CUT AND FILL LAYOUT PLAN SHEET 7
C071	STORMWATER DRAINAGE PROFILES SHEET 1
C072	STORMWATER DRAINAGE PROFILES SHEET 2
C073	STORMWATER DRAINAGE PROFILES SHEET 3
C075	STORMWATER DRAINAGE SCHEDULES
C101	CIVIL WORKS DETAILS SHEET 1 OF 5
C102	CIVIL WORKS DETAILS SHEET 2 OF 5
C103	CIVIL WORKS DETAILS SHEET 3 OF 5
C104	CIVIL WORKS DETAILS SHEET 4 OF 5
C105	CIVIL WORKS DETAILS SHEET 5 OF 5



LOCALITY PLAN
N.T.S.

SERVICE CLASHES
CONTRACTOR TO REFER TO SERVICES DOCUMENTATION AND LIAISE WITH THE RELEVANT AUTHORITY TO MITIGATE ANY SERVICE CLASHES WITH THE PROPOSED WORKS.

WARNING
BEWARE OF UNDERGROUND SERVICES.
THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CIVIL CONTRACTOR PRIOR TO CONSTRUCTION OF ANY CIVIL WORKS. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

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REV	DATE	BY	DESCRIPTION	CHK	APP
P8	28/05/2025	J.C	DESIGN ACCEPTANCE ISSUE	M.B	J.L
P7	24/04/2025	J.C	100% DOCUMENT READINESS	MB	J.L
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P4	31/01/2025	J.C	100% DOCUMENT READINESS	J.L	J.L
P3	08/11/2024	J.C	DOCUMENT READINESS (75%)	M.B	J.L
P2	02/10/2024	J.C	FINAL FSP ISSUE	J.L	J.L
P1	16/09/2024	J.C	DRAFT FSP ISSUE	J.L	J.L

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CLIENT: ACT Government — CITY RENEWAL AUTHORITY
ARCHITECT: OCULUS

PROJECT: DICKSON SHOPS AND STREETSCAPE
TITLE: COVER SHEET, LOCALITY PLAN AND DRAWING SCHEDULE

SCALE @ A1:	CHECKED:	APPROVED:
N.T.S	I.Y	J.L
PROJECT NUMBER:	DRAWN:	DATE:
PS208025	J.P	23/05/2025
DRAWING No:		REV:
C000		P8

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DATE PLOTTED: 23/05/2025 1:27:48 PM BY: CASEY.ING, JAYVEE

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GENERAL

1. THE PROJECT DETAILS ARE BASED ON DETAIL SITE SURVEY COMPLETED BY VERIS REF 22023-085B Rev E IN FILE 22023-085B_DT_001_RevE_MGA2020.dwg, ISSUED 02/09/2024. THE CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK.
2. EXISTING SERVICES HAVE BEEN PLOTTED FROM SUPPLIED DATA AND AS SUCH THEIR ACCURACY CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT.
3. THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT BY A LICENSED LAND SURVEYOR. CONFIRM SETOUT WITH ARCHITECT.
4. ALL SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACKFILLED WITH APPROVED FILL MATERIAL AND COMPACTED TO 100% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 E1.1.
5. ON COMPLETION OF SERVICES INSTALLATION, ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL AREAS, GRASSED AREAS AND ROAD PAVEMENTS.
6. WHERE NEW WORK ABUTS EXISTING, THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE FREE FROM ABRUPT CHANGES, IS OBTAINED.
7. CARE TO BE TAKEN WHEN EXCAVATING ELECTRICITY, TELECOMMUNICATION AND GAS SERVICES. NO MECHANICAL EXCAVATION TO BE UNDERTAKEN OVER ELECTRICITY, TELECOMMUNICATION AND GAS; HAND EXCAVATE IN THESE AREAS. LIAISE WITH RELEVANT AUTHORITY.
8. ALL WORKS SHALL BE IN ACCORDANCE WITH RELEVANT COUNCIL STANDARDS, DETAILS SHOWN ON THE DRAWINGS, THE SPECIFICATION AND THE DIRECTIONS OF THE ARCHITECT.
9. THE CONTRACTOR SHALL NOT DISTURB ANY EXISTING SURVEY BENCH MARKS OR REFERENCE MARKS (UNLESS INDICATED FOR REMOVAL) WITHOUT DEPT. OF NATURAL RESOURCES APPROVAL IN WRITING.
10. THE CONTRACTOR SHALL OBTAIN ALL RELEVANT AUTHORITIES APPROVALS. (PRIOR TO COMMENCEMENT AND UPON COMPLETION).
11. WORK ON EXISTING EXTERNAL STORMWATER SERVICES BY CONTRACTOR ARE SUBJECT TO INSPECTION AND APPROVAL BY COUNCIL.
12. THE CONTRACTOR SHALL LOCATE AND CONFIRM LEVELS OF ALL EXISTING SERVICE CONNECTIONS PRIOR TO COMMENCING WORK.
13. THE CONTRACTOR SHALL REFER TO LANDSCAPE DRAWINGS FOR DETAILS OF TREATMENT OF BATTERS, SWALE DRAINS AND ANY OTHER AREAS DISTURBED AS PART OF CIVIL WORKS.
14. ROAD OPENINGS:
    THE CONTRACTOR'S ATTENTION IS DRAWN TO THE REQUIREMENTS OF COUNCIL. WHERE THE WORK IS LOCATED IN A ROAD RESERVE OR CROSSES THE PAVEMENT OF A PUBLIC ROADWAY OR FOOTWAY, OBTAIN A CONSENT COVERING THE NECESSARY OPENINGS AND COMPLY WITH ALL THE CONDITIONS COVERING THE ISSUE OF SUCH A CONSENT. A CHARGE IS MADE FOR PERMITS ISSUED IN RESPECT OF PAVEMENT OPENINGS. CONTRACTOR TO OBTAIN DETAILS FROM COUNCIL, MEET ALL REQUIREMENTS AND PAYMENTS, AND CARRY OUT ALL LIAISON AT NO EXTRA COST. ALL PAVEMENT SURFACING IS TO BE UNDERTAKEN BY THE CONTRACTOR. ALL PAVEMENT REINSTATEMENT TO BE UNDERTAKEN BY THE CONTRACTOR.
15. REFER ALSO TO HYDRAULIC, LANDSCAPING, MECHANICAL AND ELECTRICAL CONSULTANTS' DRAWINGS FOR ADDITIONAL SITE SERVICES TO BE CO-ORDINATED FOR CONSTRUCTION UNDER PROPOSED CARPARK AND ROAD PAVEMENTS.
16. ALL CONSTRUCTION WORK SHALL BE CARRIED OUT SO THAT AT ANY TIME ADJOINING PROPERTY OWNERS ARE NOT DEPRIVED OF AN ALL-WEATHER ACCESS OR SUBJECTED TO ADDITIONAL STORM WATER RUN-OFF DURING THE PERIOD OF CONSTRUCTION.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OF ANY DAMAGE TO COUNCIL'S INFRASTRUCTURE. SUCH REPAIR OR REINSTATEMENT TO BE CARRIED OUT IMMEDIATELY TO THE SATISFACTION OF THE SUBDIVISION AND DEVELOPMENT MANAGER OF COUNCIL.
18. SITE INSPECTIONS REQUIRED AS SPECIFIED.
19. FOR CIVIL SETOUT INFORMATION CONTACT WSP (PH 6281 9500) AND AN AUTOCAD DRAWING FILE WILL BE ISSUED FOR SITE SETOUT SUBJECT TO CONDITIONS.
20. CONTRACTOR IS TO ALLOW TO INCLUDE ANY REQUIRED COUNCIL INSPECTION AND COMPLIANCE FEES IN THE CONTRACT.

EXISTING SERVICES AND FEATURES

1. THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION AND REMOVAL IF REQUIRED OF ALL EXISTING SERVICES IN AREAS AFFECTED BY THE WORKS WITHIN THE CONTRACT AREA, AS SHOWN ON THE DRAWINGS UNLESS DIRECTED OTHERWISE BY THE SUPERINTENDENT. ALL TO REGULATORY AUTHORITY STANDARDS AND APPROVAL.
2. THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES SERVICES TO ALL BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED.
3. PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL OBTAIN THE SUPERINTENDENT'S APPROVAL FOR HIS PROGRAMME FOR THE RELOCATION/CONSTRUCTION OF TEMPORARY SERVICES.
4. EXISTING BUILDINGS, EXTERNAL STRUCTURES, AND TREES SHOWN ON THESE DRAWINGS ARE FEATURES EXISTING PRIOR TO ANY SEPARATE AND PRECEDING DEMOLITION WORKS.
5. CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN EXISTING SUPPLY TO BUILDINGS REMAINING IN OPERATION DURING WORKS TO THE SATISFACTION AND APPROVAL OF THE SUPERINTENDENT. ONCE DIVERSION IS COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT.
6. INTERRUPTION TO SUPPLY OF EXISTING SERVICES SHALL BE DONE SO AS NOT TO CAUSE ANY INCONVENIENCE TO THE ADJACENT RESIDENCES. CONTRACTOR TO GAIN APPROVAL OF THE SUPERINTENDENT FOR TIME OF INTERRUPTION.

STORMWATER

1. ALL EXTERNAL 300 DIA. DRAINAGE PIPES AND LARGER SHALL BE CLASS "3" APPROVED SPIGOT AND SOCKET RCP PIPES WITH RUBBER RING JOINTS, (U.N.O.). ALL DRAINAGE PIPES UP TO AND INCLUDING 225 DIA. SHALL BE SEWER GRADE uPVC WITH SOLVENT WELD JOINTS, (U.N.O.).
2. EQUIVALENT STRENGTH FRC PIPES MAY BE USED.
3. ALL PIPE JUNCTIONS UP TO AND INCLUDING 450 DIA. AND ALL TAPERS SHALL BE VIA PURPOSE MADE FITTINGS.
4. MINIMUM GRADE TO STORMWATER LINES TO BE 1%. (U.N.O.).
5. CONTRACTOR TO SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTORS TO ENSURE PROPER CONNECTION TO DISSIMILAR PIPEWORK.
6. ALL CONNECTIONS TO EXISTING DRAINAGE PITS SHALL BE MADE IN A TRADESMAN-LIKE MANNER AND THE INTERNAL WALL OF THE PIT AT THE POINT OF ENTRY SHALL BE CEMENT RENDERED TO ENSURE A SMOOTH FINISH. THE CONTRACTOR IS TO REPLACE DOWNSTREAM RECEIVING STORMWATER STRUCTURES, SHOULD THE STRUCTURE BE DAMAGED DURING INSTALLATION.
7. WHERE SUBSOIL DRAINAGE LINES PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS UNSLOTTED uPVC SEWER GRADE PIPE SHALL BE USED.
8. PROVIDE 3.0m LENGTH OF 100 DIA. SUBSOIL DRAINAGE PIPE WRAPPED IN FABRIC SOCK, AT UPSTREAM END OF EACH STORMWATER STRUCTURE (UNO)
9. BEDDING SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF THE MUNICIPAL INFRASTRUCTURE TECHNICAL SPECIFICATION 03 - UNDERGROUND SERVICES.
10. AT CONNECTION TO PITS, INVERT OF SUBSOIL DRAINS TO BE ABOVE MAIN STORMWATER PIPE OBVERT.
11. EQUIVALENT STRENGTH PRECAST STORMWATER PITS AND MANHOLES MAY BE USED.
12. PROVIDE CCTV INSPECTION AND REPORT OF ALL INSTALLED STORMWATER PIPES AT COMPLETION OF WORKS.
13. ALL PIPES TO BE INSTALLED IN ACCORDANCE WITH MUNICIPAL INFRASTRUCTURE TECHNICAL SPECIFICATION 03 - UNDERGROUND SERVICES,SUBSURFACE DRAINAGE 03I, AND PIPE DRAINAGE 03B.

ASPHALTIC CONCRETE

GENERAL
1. ASPHALTIC CONCRETE MIX DESIGN, MANUFACTURE, PLACING AND COMPACTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATION AND AS2734 - 2005 ASPHALT (HOT MIXED) PAVING - A GUIDE TO GOOD PRACTICE.

PAVEMENT PREPARATION
2. THE EXISTING SURFACE TO BE SEALED SHALL BE DRY AND BROOMED BEFORE COMMENCEMENT OF WORK TO ENSURE COMPLETE REMOVAL OF ALL SUPERFICIAL FOREIGN MATTER.
3. ALL DEPRESSIONS OR UNEVEN AREAS ARE TO BE TACK-COATED AND BROUGHT UP TO GENERAL LEVEL OF PAVEMENT WITH ASPHALTIC CONCRETE BEFORE LAYING OF MAIN COURSE.

TACK COAT
4. THE WHOLE OF THE AREA TO BE SHEETED WITH ASPHALTIC CONCRETE SHALL BE LIGHTLY AND EVENLY COATED WITH RAPID SETTING BITUMEN.

JOINTS
5. THE NUMBER OF JOINTS BOTH LONGITUDINAL AND TRANSVERSE SHALL BE KEPT TO A MINIMUM.
6. THE DENSITY AND SURFACE FINISH AT JOINTS SHALL BE SIMILAR TO THOSE OF THE REMAINDER OF THE LAYER.

COMPACTION
7. ALL COMPACTION SHALL BE UNDERTAKEN USING SELF PROPELLED ROLLERS.
8. INITIAL ROLLING SHALL BE COMPLETED BEFORE THE MIX TEMPERATURE FALLS BELOW 105°C.
9. SECONDARY ROLLING SHALL BE COMPLETED BEFORE THE MIX TEMPERATURE FALLS BELOW 60°C.

FINISHED PAVEMENT PROPERTIES
10. FINISHED SURFACES SHALL BE SMOOTH, DENSE AND TRUE TO SHAPE AND SHALL NOT VARY MORE THAN THE SPECIFIED TOLERANCES.

EARTHWORKS

1. FOLLOWING DEMOLITION OF EXISTING STRUCTURES, ALL VEGETATION, SOILS CONTAINING ORGANIC AND DELETERIOUS MATERIAL, CONCRETE SLABS, CONCRETE BUILDING FOOTINGS AND PAVEMENT AREAS SHALL BE STRIPPED AND REMOVED FROM SITE.
2. ALL EXISTING TREE STUMPS AND ROOTS SHALL BE GRUBBED OUT TO A MINIMUM DEPTH OF 750mm.
3. DEPRESSIONS FORMED BY REMOVAL OF UNDERGROUND ELEMENTS AND OR WEAKENED AREAS SHOULD BE CLEANED OUT AND FILLED WITH COMPACTED IMPORTED FILL MATERIAL.
4. EXPOSED CONSTRUCTION AREAS SHALL BE PROOF ROLLED USING A VEHICLE WITH A LOADING OF AT LEAST 5 TONNES PER AXLE IN THE PRESENCE OF THE NOMINATED GEOTECHNICAL TESTING AUTHORITY AND A REPRESENTATIVE OF WSP. AREAS DEMONSTRATING EXCESSIVE MOVEMENT SHALL BE TREATED IF POSSIBLE, OR REMOVED TO COMPETENT MATERIAL AND REPLACED WITH COMPACTED IMPORTED FILL MATERIAL. CONTRACTOR TO ALLOW A PROVISIONAL SUM FOR REMOVAL OF UNSUITABLE MATERIAL AND REPLACEMENT WITH COMPACTED IMPORTED FILL MATERIAL.
5. ALL SOFT, WET OR UNSUITABLE MATERIAL IS TO BE REMOVED AND REPLACED WITH APPROVED MATERIAL SATISFYING THE REQUIREMENTS LISTED BELOW FOR IMPORTED FILL MATERIAL.
6. PLACE IMPORTED FILL MATERIALS SATISFYING THE REQUIREMENTS LISTED BELOW TO NOMINATED BULK EARTHWORKS LEVELS ON BULK EARTHWORKS PLAN.
7. ALL IMPORTED FILL MATERIAL SHALL BE FREE OF TREE STUMPS AND ROOTS, CLAY, TOPSOIL, STEEL, ORGANIC MATERIAL AND OTHER CONTAMINANTS AND SUITABLE TO BE COMPACTED TO CONFORM TO THE "MUNICIPAL INFRASTRUCTURE TECHNICAL SPECIFICATION 02-EARTHWORKS" COMPACTION AND MOISTURE REQUIREMENTS. MATERIAL USED IN THE TOP 150 MM BELOW SUBGRADES SHALL BE FREE OF PARTICLES LARGER THAN 150 MM AND MATERIAL USED IN THE TOP 1M BELOW SUBGRADES SHALL BE FREE OF PARTICLES LARGER THAN 300MM. ELSEWHERE ROCK MATERIAL SHALL BE BROKEN DOWN TO LESS THAN 600MM UNLESS OTHERWISE APPROVED BY THE SUPERINTENDENT.
8. CONTRACTOR TO PROVIDE CERTIFICATION TO SUPERINTENDENT FROM NATA REGISTERED LAB THAT THE FILL MATERIAL IS FREE OF ACTUAL OR POTENTIAL ACID SULFATE SOILS.
9. ALL ENGINEERED FILL MATERIAL SHALL BE PLACED IN MAXIMUM 200mm THICK LAYERS AND COMPACTED AT OPTIMUM MOISTURE CONTENT (+ OR - 2%) TO ACHIEVE THE FOLLOWING MINIMUM COMPACTION VALUES:

LOCATION	COHESIVE SOILS	COHESIONLESS SOILS
BUILDING AREAS		
• FOUNDATION SUPPORT	98%	80%
• FLOOR SLABS	98%	80%
PAVEMENT AREAS		
• TOP 300mm BELOW SUBGRADE LEVEL	98%	80%
• BELOW THE TOP 300mm	95%	75%
LANDSCAPE AREAS	95%	75%

WHERE THE ABOVE VALUES ARE DETERMINED IN ACCORDANCE WITH AS 1289.5.1.1 (STANDARD COMPACTION) FOR COHESIVE SOILS AND AS 1289.5.6.1 (STANDARD METHOD) FOR COHESIONLESS SOILS.

10. ALL EARTHWORKS OPERATIONS SHALL BE CARRIED OUT WITH 'LEVEL 1' ENGINEERING SUPERVISION IN ACCORDANCE WITH APPENDIX B OF AS 3798. THE GEOTECHNICAL TESTING AUTHORITY SHALL BE FROM THE NOMINATED PANEL OF PROVIDERS WITHIN THE CIVIL SPECIFICATION. THE NOMINATED GEOTECHNICAL TESTING AUTHORITY SHALL PROVIDE CERTIFICATION AS NOTED IN THE GEOTECHNICAL REPORT THAT ALL GENERAL EARTHWORKS OPERATIONS HAVE BEEN CARRIED OUT IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS AND THE CONTROLLED FILL IS SUITABLE FOR PURPOSE WITH A MINIMUM 150 KPa BEARING CAPACITY UNDER THE BUILDING. ALL CERTIFICATIONS RECOMMENDED IN THE PROJECT GEOTECHNICAL REPORT ARE TO BE PROVIDED BY THE CONTRACTOR.
11. THE CONTRACTOR SHALL PROGRAMME THE EARTHWORKS OPERATION SO THAT THE WORKING AREAS ARE ADEQUATELY DRAINED DURING THE PERIOD OF CONSTRUCTION. THE SURFACE SHALL BE GRADED AND SEALED OFF TO REMOVE DEPRESSIONS, ROLLER MARKS AND SIMILAR WHICH WOULD ALLOW WATER TO POND AND PENETRATE THE UNDERLYING MATERIAL. ANY DAMAGE RESULTING FROM THE CONTRACTOR NOT OBSERVING THESE REQUIREMENTS SHALL BE RECTIFIED BY THE CONTRACTOR AT THEIR COST. CONTRACTOR IS TO ALSO NOTE THAT THE EXISTING SOILS INCLUDING NATURAL SILTY SAND AND HIGH PLASTICITY CLAYS ARE LIKELY TO BE SUSCEPTIBLE TO SOFTENING WHEN WET, TO THE POINT WHERE THE SITE MAY BECOME INTRAFFICABLE. THE CONTRACTOR IS TO PROVIDE TEMPORARY HAUL ROADS WHERE NECESSARY TO ALLOW ACCESS TO THE WORKS AREAS.
12. TESTING OF THE SUBGRADE SHALL BE CARRIED OUT IN ACCORDANCE WITH AS 3798 BY AN APPROVED NATA REGISTERED LABORATORY AT THE CONTRACTOR'S EXPENSE.
13. ALL BASE AND SUB-BASE MATERIALS SHALL BE PLACED IN MAXIMUM 100mm THICK LAYERS AND LAID AND COMPACTED IN ACCORDANCE WITH THE "MUNICIPAL INFRASTRUCTURE TECHNICAL SPECIFICATION 04 - FLEXIBLE PAVEMENTS" EXECUTION REQUIREMENTS FOR LAYING, TRIMMING, SHAPING, CURING, AND COMPACTION.
14. CONTRACTOR TO ENSURE VIA THE APPROPRIATE SELECTION OF FILL MATERIAL AND EARTHWORKS THAT, UPON COMPLETION OF THE EARTHWORKS, THAT THE BUILDING PLATFORM HAS A CLASS 'M' CLASSIFICATION IN ACCORDANCE WITH AS 2870.
15. ANY SURPLUS EXCAVATED MATERIAL SHALL BE DISPOSED OF OFF SITE AT AN APPROVED TIP SITE.
16. ANY CONTAMINATED MATERIAL SHALL BE MANAGED AND DISPOSED OF ACCORDING TO THE CURRENT LOCAL COUNCIL AND EPA REQUIREMENTS INCLUDING CERTIFICATION.
17. THE USE OF POTABLE WATER IS NOT PERMITTED IN ACTIVITIES ASSOCIATED WITH ROAD AND PAVEMENT CONSTRUCTION, THE COMPACTION OF FILL MATERIAL OR DUST SUPPRESSION CONTRACTOR TO UTILISE RECYCLED OR SUITABLE NON POTABLE WATER FOR THESE ACTIVITIES WITHIN THE CONTRACT. USE OF RECYCLED WATER MUST BE IN ACCORDANCE WITH THE REQUIREMENTS OF COUNCIL.

SERVICE CLASHES
CONTRACTOR TO REFER TO SERVICES DOCUMENTATION AND LIAISE WITH THE RELEVANT AUTHORITY TO MITIGATE ANY SERVICE CLASHES WITH THE PROPOSED WORKS.

WARNING
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CLIENT: ACT Government — CITY RENEWAL AUTHORITY

ARCHITECT: OCULUS

PROJECT: DICKSON SHOPS AND STREETSCAPE

TITLE: GENERAL PROJECT NOTES AND REQUIREMENTS

SCALE @ A1:	CHECKED:	APPROVED:
N.T.S	I.Y	J.L
PROJECT NUMBER:	DRAWN:	DATE:
PS208025	J.P	23/05/2025
DRAWING No: C001		REV: P8

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NOTE: THERE IS NO SURVEY AVAILABLE FOR THE EXISTING CAR PARK SURROUNDED BY JOAN KELLET WAY, SO ALL OUTLINES ARE INDICATIVE DETAILED FEATURE SURVEY AND UNDERGROUND SERVICES LOCATION MUST BE COMPLETED TO CONFIRM DESIGN INTENT AND SITE SETOUT FOR THE EXISTING CAR PARK AREA.(SECTION 30 BLOCK 19) AND NEW INSTALLATIONS, PRIOR TO ANY SITE WORKS COMMENCING.

NOTES:

1. REFER TO DRAWING PS208025-C000 FOR DRAWING LIST. REFER TO DRAWING PS208025-C001 FOR GENERAL NOTES AND REQUIREMENTS.
2. THE SITE FEATURE AND LEVEL SURVEY WAS PROVIDED BY BY VERIS IN REF 22023-085B Rev E AND REFLECTS THE EXISTING CONDITIONS CURRENT TO 02/09/2024. CAD DRAWING NO. 22023-085B_DT_001_RevE_MGA2020.dwg, FOR FURTHER INFORMATION RELATING TO SURVEY CONTACT VERIS ON PH 6202 7600.
3. WARNING: THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THE EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.
4. ALL EXISTING DRAINAGE CHANNELS ARE LIVE. THE CONTRACTOR MUST MAKE ADEQUATE PROVISIONS TO MAINTAIN THESE DURING THE WORKS INCLUDING TEMPORARY RE ROUTING ETC.

LEGEND:

- PROJECT BOUNDARY LINE
- EX.D — EXISTING DRAINAGE
- EX.W — EXISTING WATER
- EX.E — EXISTING ELECTRICAL
- EX.E H/V — EXISTING ELECTRICAL HIGH VOLTAGE
- EX.E L/V — EXISTING ELECTRICAL LOW VOLTAGE
- EX.G — EXISTING GAS
- EX.T — EXISTING COMMUNICATIONS
- EX.S — EXISTING SEWER

HANNA ENDERS LANE
JOAN KELLET
JOAN KELLET WAY
BADHAM STREET
COWPER STREET
DICKSON PLACE

SERVICE CLASHES

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ARCHITECT: OCULUS

PROJECT: DICKSON SHOPS AND STREETSCAPE

TITLE: EXISTING CONDITIONS PLAN

SCALE @ A1:	CHECKED:	APPROVED:
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PROJECT NUMBER:	DRAWN:	DATE:
PS208025	J.P	23/05/2025
DRAWING No: C005		REV: P8

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NOTES:

1. REFER TO DRAWING PS208025-C000 FOR DRAWING LIST. REFER TO DRAWING PS208025-C001 FOR GENERAL NOTES AND REQUIREMENTS.
2. SEDIMENT AND CONTROL MEASURES SHOWN ON THIS PLAN ARE PREPARED AS A GUIDE FOR CONSTRUCTION APPROVAL BY THE EPA (OR OTHER RELEVANT AUTHORITY). IT DOES NOT IN ANY WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO PLAN AND IMPLEMENT ENVIRONMENTAL PROTECTION MEASURES AS REQUIRED BY LAW, THE COUNCIL AND THE CONTRACT THROUGHOUT THE WORKS.
3. NO WATER TO LEAVE SITE UNTIL THE SITE HAS 70% COVERAGE/STABILISATION.
4. USE DETENTION TANK EXCAVATION AS A TEMPORARY SEDIMENT BASIN DURING CONSTRUCTION.
5. FOR EROSION AND SEDIMENT CONTROL NOTES AND DETAILS REFER PS208025-C011.

LEGEND:

- PROPOSED BUILDING AREA
- PROPOSED TEMPORARY STABILISED SITE ENTRY/EXIT LOCATION TO BE DETERMINED BY CONTRACTOR
- OVERLAND FLOW PATH
- PROPOSED SEDIMENT FENCE
- PROPOSED INLET SEDIMENT TRAP
- PROPOSED SITE BOUNDARY FENCE
- CUT AREA
- FILL AREA

BADHAM STREET
HANNA ENDERS LANE
JOAN KELLET WAY
COWPER STREET
DICKSON PLACE

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P1	16/09/2024	J.C	DRAFT FSP ISSUE	J.L	J.L

DRAWING STATUS: **FOR APPROVAL**
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CLIENT: ACT Government — CITY RENEWAL AUTHORITY

ARCHITECT: OCULUS

PROJECT: DICKSON SHOPS AND STREETSCAPE

TITLE: EROSION AND SEDIMENT CONTROL LAYOUT PLAN

SCALE @ A1:	CHECKED:	APPROVED:
1:400	I.Y	J.L
PROJECT NUMBER:	DRAWN:	DATE:
PS208025	J.P	23/05/2025
DRAWING No: C010		REV: P8

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DATE PLOTTED: 23/05/2025 1:39:05 PM BY: CABOTTING, JAYVEE

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EROSION AND SEDIMENT CONTROL NOTES ~~Binder 3a,90B~~

GENERAL INSTRUCTIONS

1. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, LANDSCAPING PLANS AND WRITTEN INSTRUCTIONS RELATING TO THE SUBJECT DEVELOPMENT.
2. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO CONTROL EROSION AND DOWNSTREAM SEDIMENTATION DURING ALL STAGES OF CONSTRUCTION INCLUDING THE MAINTENANCE PERIOD.
3. THE EXTENT AND POSITION OF THE EROSION AND SEDIMENT CONTROL MEASURES TO BE DETERMINED ON SITE BY THE CONTRACTOR TO SUIT THE CONSTRUCTION PROGRAM.
4. THESE PLANS PRESENT CONCEPTS ONLY AND THE MEASURES SHOWN ON THIS DRAWING(S) ARE MINIMUM REQUIREMENTS ONLY.
5. THE CONTRACTOR SHALL AT ALL TIMES BE RESPONSIBLE FOR THE ESTABLISHMENT, MANAGEMENT AND MAINTENANCE OF THE EROSION AND SEDIMENT CONTROL MEASURES TO MEET COUNCIL STANDARDS.
6. LARGE OPEN AREAS OR STEEP BATTERS SHOULD NOT BE LEFT EXPOSED/UNSTABILISED FOR MORE THAN 10 DAYS OR IF WET WEATHER IS FORECAST.
7. EXPOSED AREAS INCLUDING BATTERS WHICH REMAIN UN-WORKED FOR MORE THEN 10 DAYS SHOULD BE STABILISED USING TEMPORARY HYDROMULCHING, HYDROSEEDING OR MULCHING, EVEN IF AREAS WILL BE WORKED AT A LATER TIME.
8. ALL WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST VERSION OF THE BLUE BOOK, IECA (2008) GUIDELINES AND INDUSTRY BEST MANAGEMENT PRACTICES.
9. THE CONTRACTOR SHALL BE AWARE OF ITS RESPONSIBILITIES FOR PROTECTING THE DOWNSTREAM ENVIRONMENT AND RECEIVING WATER FROM POLLUTION AND ENVIRONMENTAL HARM, UNDER THE ENVIRONMENTAL PROTECTION ACT 1997.
10. ADDITIONALLY THE CONTRACTOR SHALL BE AWARE OF ITS DUTY TO NOTIFY THE LOCAL AUTHORITY AND THE ENVIRONMENTAL PROTECTION AUTHORITY (CANBERRA) OF A POTENTIAL OR ACTUAL INCIDENT OF ENVIRONMENTAL HARM, UNDER THE ENVIRONMENTAL PROTECTION ACT 1997.
11. ALL WORKS MUST BE CARRIED OUT IN ACCORDANCE WITH ENVIRONMENT PROTECTION GUIDELINES FOR CONSTRUCTION AND AND DEVELOPMENT IN THE ACT, AUGUST 2022.

RECOMMENDED IMPLEMENTATION SEQUENCE:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND FUNCTIONAL PRIOR TO WORKS COMMENCING AND IN THE FOLLOWING SEQUENCE.
   a. CONSTRUCT TEMPORARY STABILISED SITE ACCESS, ENSURING ADJACENT STORMWATER RUN OFF IS DIVERTED AWAY FROM ACCESS
   b. INSTALL SEDIMENT FENCING AND/OR BARRIER FENCING TO CONFINE INGRESS TO AND EGRESS FROM THE SITE TO STABILISED ACCESS POINT(S) ONLY.
   c. PROVIDE INLET PROTECTION TO STORMWATER INLETS AND GULLIES ON ALL ROADS ADJOINING THE SITE.
   d. CONSTRUCT BARRIER FENCING AROUND RESTRICTED 'NO-GO' ZONES OF RETAINED VEGETATION, AREAS NOT TO BE DISTURBED AND AREAS WHICH WILL REMAIN UN-WORKED.
   e. CONSTRUCT UPSTREAM DIVERSION CHANNELS TO DIVERT CLEAN WATER AROUND WORKSITE, AND INSTALL APPROPRIATE CHANNEL STABILISATION.
   f. CONSTRUCT LOW FLOW EARTH BANKS AS CATCH DRAINS PARALLEL TO CONTOURS TO LIMIT LARGE SLOPE LENGTHS (SLOPES SHOULD BE LESS THEN 80M IN LENGTH).
   g. INSTALL ALL TEMPORARY SEDIMENT FENCES.
   h. CONSTRUCT ANY NOMINATED SEDIMENT BASINS AND SEDIMENT TRAPS.
   i. STABILISE ALL DISTURBED AREAS ASAP AND PROGRESSIVELY AS WORKS ARE COMPLETED. TEMPORARY STABILISATION TO BE DONE USING MULCHING, HYDROMULCHING, HYDROSEEDEDING OR DIRECT SEEDING TO GIVE A 70% COVERAGE OF GROUND SURFACE WITHIN 14 DAYS OF WORKS COMPLETING (EVEN IF WORKS MAY CONTINUE LATER).
2. UNDERTAKE SITE DEVELOPMENT WORKS SO THAT LAND DISTURBANCE IS CONFINED TO MINIMUM WORKABLE AREAS.
3. DISTURBED AREAS TO EXTEND NO MORE THAN 5 METRES (PREFERABLY 2 METRES) FROM ESSENTIAL WORKS AREAS.
4. WORK AREAS TO BE DELINEATED BY BARRIER FENCING AND DIVERSION CHANNEL UPSLOPE AND SEDIMENT FENCING DOWNSLOPE.
5. THE CONTRACTOR SHALL ENSURE THAT THE EXISTING VEGETATION AND GROUNDCOVER IS RETAINED AS MUCH AS POSSIBLE.
6. TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR LATER USE ONSITE.
7. NATIVE SITE VEGETATION REQUIRED AND APPROVED FOR CLEARING SHOULD BE MULCHED AND STOCKPILED FOR LATER USE IN LANDSCAPING, STABILISATION AND/OR SITE REHABILITATION WORKS.
8. AT ALL TIMES THE CONTRACTOR SHALL MONITOR THE PREVAILING WEATHER CONDITIONS AND PROTECT ANY DOWNSTREAM CONSTRUCTION AND RECEIVING ENVIRONMENTS.
9. EROSION AND SEDIMENT CONTROL PROTECTION MEASURES SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT CONTRACT.
10. PLANS AND CONTROL MEASURES FOR LARGE SITES WILL NEED TO BE REVISED AND UPDATED TO REFLECT THE SITE STAGES AND PROGRESSION OF WORKS.
11. MEASURES INCLUDING SEDIMENT FENCES SHOULD BE MOVED AND REINSTATED AS WORKS PROGRESS.
12. FOOT AND VEHICULAR TRAFFIC TO BE RESTRICTED IN RECENTLY STABILISED AREAS INCLUDING THOSE HYDROSEEDED, TURFED OR SEEDED.

CONTROL MEASURES

1. FINAL SITE LANDSCAPING SHALL BE UNDERTAKEN AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS OF CONSTRUCTION COMPLETION
2. SEDIMENT LADEN WATER SHALL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM BY USING INLET PROTECTION.
3. ALL PERIMETER BANKS AND CHANNEL DRAINS SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
4. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL ONLY BE REMOVED ONCE SITE IS STABILISED AND UPSTREAM WORKS HAVE BEEN COMPLETED.
5. AT CONSTRUCTION COMPLETION ALL TEMPORARY EARTH STRUCTURES, INCLUDING SOIL STOCKPILES ARE TO BE TRACK ROLLED AND SEEDED. THE CONTRACTOR IS TO ENSURE A 70% COVERAGE WITHIN 14 DAYS.

DUST CONTROL

1. DURING WINDY AND DRY WEATHER ANY UNPROTECTED AREAS SHALL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL. WHERE WATER IS NOT AVAILABLE IN SUFFICIENT QUANTITIES, SOIL BINDERS OR DUST RETARDANTS TO BE USED FOR DUST SUPPRESSION.
2. EXPOSED SURFACES INCLUDING BATTERS SHOULD BE LEFT ROUGH TO REDUCE WIND SPEEDS AND POTENTIAL FOR WIND EROSION.
3. USE OPEN WEAVE BARRIER FENCING ON WINDWARD SIDE OF SITE IF REQUIRED (REFER DETAIL). FENCING IS GENERALLY REQUIRED WHERE AREA OF DISTURBANCE IS >5000m^2.

OTHER MATTERS

1. ACCEPTABLE RECEPTORS AND DISPOSAL PRACTICES WILL BE USED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHERS, LITTER AND GENERAL WASTE MATERIALS.
2. ANY EXISTING TREES WHICH ARE NOT REQUIRED OR APPROVED TO BE CLEARED FOR THE WORKS AND/OR FORM PART OF THE FINAL LANDSCAPING PLAN SHOULD BE PROTECTED FROM CONSTRUCTION ACTIVITIES BY:
   a. PROTECTING THEM WITH BARRIER FENCING OR MARKERS.
   b. ENSURING NOTHING IS NAILED TO THEM
   c. PROHIBITING PAVING, GRADING OR PLACING OF STOCKPILES WITHIN DRIP LINE.
3. ALL VEHICLE AND EQUIPMENT WASHING SHOULD BE CONTAINED IN SPECIFIC BUNDED AREAS, DISCONNECTED FROM CONCENTRATED FLOW PATHS AND THE STORMWATER SYSTEM.
4. ANY NECESSARY VEHICLE OR EQUIPMENT REFUELING SHOULD BE UNDERTAKEN AWAY FROM CONCENTRATED FLOW PATHS AND PREFERABLY WITHIN A BUNDED AREA.
5. ANY ONSITE FUEL STORAGE AREAS SHOULD BE COVERED AND BUNDED.

MAINTENANCE OF PUBLIC ROADS

1. ALL CONSTRUCTION VEHICLES DEPARTING FROM THE SITE SHALL HAVE THEIR TYRES WASHED DOWN OR SEDIMENT REMOVED BY A STABILISED SITE ACCESS DEVICE.
2. THE STABILISED SITE ACCESS AREAS SHALL BE LOCATED SUCH THAT SILTED WATER IS FILTERED THROUGH A SUITABLE SEDIMENT TRAP (SUCH AS A SEDIMENT FENCE) INSTALLED DOWNSTREAM OF ACCESS.
3. THE CONTRACTOR SHALL INSPECT THE PUBLIC ROADS ADJACENT TO THE SITE DAILY AND MANUALLY REMOVE ANY SEDIMENT DEPOSITS (BY SWEEPING NOT WASH DOWN).

SITE INSPECTION AND MAINTENANCE

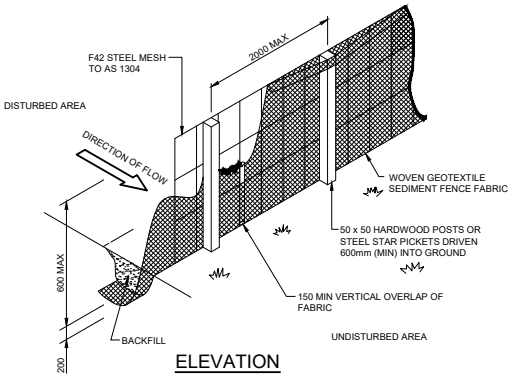
1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED REGULARLY, IMMEDIATELY BEFORE SITE CLOSURE, PRIOR TO PREDICTED LARGE STORM EVENTS AND AFTER EVERY SIGNIFICANT (> 5MM) RAINFALL EVENT OR AT LEAST ON A WEEKLY BASIS.
2. THE CONTRACTOR WILL AS A MINIMUM CONDUCT EACH INSPECTION IN LINE WITH THE FOLLOWING
   a. RECORD TYPE OF DEVICE/CONTROL MEASURE BEING INSPECTED AND ITS LOCATION;
   b. RECORD THE CONDITION OF EVERY CONTROL MEASURE;
   c. RECORD MAINTENANCE REQUIREMENTS FOR EVERY CONTROL DEVICE;
   d. RECORD SEDIMENT VOLUMES REMOVED FROM SEDIMENT TRAPPING DEVICES;
   e. RECORD DETAILS OF SEDIMENT BASIN TREATMENT, FLOCCULANT DOSAGE AND CLEANOUT;
   f. RECORD SEDIMENT DISPOSAL PROCEDURES AND LOCATION.
3. REPAIRS AND MAINTENANCE OF ALL DEVICES AND MEASURES INCLUDING DIVERSION CHANNELS SHALL BE UNDERTAKEN AS REQUIRED, ENSURING ALL MEASURES ARE FULLY FUNCTIONAL AT ALL TIMES.
4. ENSURE SEDIMENT LADEN WATER HAS NOT BEEN DIVERTED AROUND DEVICES.
5. REPAIR SCOUR DAMAGE TO SEDIMENT CONTROL MEASURES AFTER RAINFALL EVENTS AND REINSTATE DEVICES AS NECESSARY.
6. SEDIMENT FENCES WILL REQUIRE CLEANING WHEN SEDIMENT REACHES 300MM DEPTH OR ONE-HALF THE HEIGHT OF THE FILTER FABRIC AND ALL OTHER SEDIMENT TRAPS WILL REQUIRE CLEANING OUT WHEN 30% OF DESIGN CAPACITY IS REACHED.
7. ALL INLET AND GULLY TRAPS TO BE CLEANED NOT HOSED AFTER EVERY RAINFALL EVENT, (1>5mm) OR AT LEAST ON A WEEKLY BASIS.
8. SEDIMENT REMOVED FROM ANY TRAPPING DEVICE TO BE RELOCATED, ENSURING FURTHER POLLUTION TO DOWNSTREAM ENVIRONMENTS WILL NOT OCCUR.
9. ALL SEEDING, HYDROSEEDING AND TURFING REQUIRES REGULAR WATERING, UNTIL EFFECTIVE COVER ESTABLISHED AND PLANTS ARE GROWING VIGOROUSLY. WATERING SHOULD VARY DEPENDING ON WEATHER AND SOIL CONDITIONS.
10. WATERING SHOULD START IMMEDIATELY AFTER PLANTING AND SHOULD COMPLY WITH THE FOLLOWING AS A MINIMUM:
    WEEK 1 3 WATERINGS/WEEK
    WEEK 2-6 2 WATERINGS/WEEK
    WEEK 7-12 1 WATERING/WEEK
11. EXCESSIVE VEGETATION GROWTH WILL BE CONTROLLED THROUGH MOWING OR SLASHING.
12. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE INSPECTION, MAINTENANCE AND TESTING OF DEVICES IS UNDERTAKEN ON SITE.
13. THE CONTRACTOR TO KEEP DETAILED AND LEGIBLE RECORDS OF ALL INSPECTION AND MAINTENANCE UNDERTAKEN ON THE EROSION AND SEDIMENT CONTROL DEVICES.
14. ALL SITE WASTE INCLUDING GENERAL RUBBISH TO BE DISPOSED OF IN AN ENVIRONMENTALLY RESPONSIBLE MANNER IN ACCORDANCE WITH THE ENVIRONMENTAL PROTECTION (WASTE MANAGEMENT) POLICY 2000 AND ENVIRONMENTAL PROTECTION (WASTE MANAGEMENT) REGULATION 2000.
15. THE CONTRACTOR SHALL CONSTRUCT AND IMPLEMENT ADDITIONAL MEASURES AS NECESSARY TO ENSURE PROTECTION OF DOWNSTREAM ENVIRONMENTS.

SEDIMENT BASIN MAINTENANCE

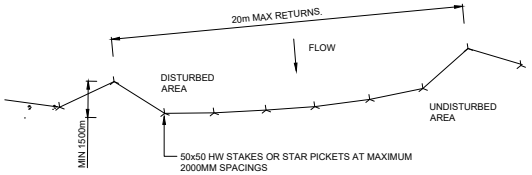
1. THE CONTRACTOR SHALL KEEP DETAILED AND ACCURATE RECORDS OF THE MONITORING, TREATMENT, TESTING AND MAINTENANCE OF THE SEDIMENT BASIN INCLUDING RECORDED RAINFALL VOLUME, FLOCCULATING AGENTS USED AND TEST RESULTS PRIOR TO DEWATERING.
2. THE STORMWATER RUNOFF COLLECTED IN THE SEDIMENT BASIN SHALL BE MONITORED, TREATED AND TESTED PRIOR TO DISCHARGE, INCLUDING WATER TO BE REUSED ON SITE.
3. WATER TESTING TO BE UNDERTAKEN BY A SUITABLY QUALIFIED PERSON.
4. ALL LABORATORY TESTING TO BE UNDERTAKEN BY A NATA ACCREDITED LABORATORY.
5. ALL WATER PUMPED FROM THE SEDIMENT BASIN SHALL BE TESTED FOR ENVIRONMENTAL COMPLIANCE AGAINST THE RELEASE CRITERIA IN THE TABLE BELOW (AS A MINIMUM), UNLESS ALTERNATIVE (MORE STRINGENT) STANDARDS ARE SPECIFIED BY THE LOCAL AUTHORITY PRIOR TO RELEASE.

PARAMETER	RELEASE CRITERIA
SUSPENDED SOLIDS	50mg/l MAX
pH	WITHIN RANGE 6.5-8.5
VISUAL AMENITY	NO VISUAL PLUME

6. WATER TESTING TO BE UNDERTAKEN USING EITHER A HANDHELD PH/TURBIDITY METER OR SAMPLES COLLECTED FOR LABORATORY TESTING PRIOR TO BASIN DEWATERING.
7. THE SEDIMENT BASIN SHALL BE TREATED BY FLOCCULATION AFTER ALL RAINFALL EVENTS (> 5MM) USING GYPSUM OR ALUM. MANUAL DOSAGE OF BASIN SHALL BE UNDERTAKEN USING A MINIMUM RATE OF 32kg/100m3 FOR GYPSUM AND 1.5-9kg/100m3 FOR ALUM. HIGHER DOSAGE MAY BE REQUIRED DEPENDING ON SOIL TYPE AND APPLICATION TECHNIQUE.
8. THE CHOSEN FLOCCULENT SHALL BE SPREAD EVENLY OVER THE BASIN SURFACE AREA. THE BASIN WILL REQUIRE A PUMP SYSTEM TO SPRAY SLURRY OF FLOCCULANTS OVER SURFACE AT AN ANGLE OF 10 - 20 DEGREES.
9. THE TREATED BASIN SHALL BE DEWATERED WITH A PUMP SYSTEM WITH A FLOATING INLET TO ENSURE SETTLED SEDIMENT IS NOT ENTRAINED AND DISCHARGED.
10. BASIN DEWATERING SHALL OCCUR WITHIN 5 DAYS FROM CONCLUSION OF RAINFALL EVENT.
11. SEDIMENT BASINS WILL REQUIRE DEWATERING AND SEDIMENT CLEANOUT ONCE STORAGE CAPACITY REACHES 70%.
12. CAPTURED SEDIMENT WILL BE DISPOSED OF IN AN ENVIRONMENTALLY RESPONSIBLE MANNER AS TO NOT CAUSE FURTHER CONTAMINATION OR DOWNSTREAM POLLUTION. SEDIMENT SHOULD NOT BE DISPOSED OF IN CONCENTRATED FLOWS, WHERE IT CAN BE RE-ENTRAINED OR WHERE THE RECEIVING WATER HAS A PH OF < 5.5.
13. THE BASIN AND ALL OTHER CONTROL DEVICES WILL BE MAINTAINED IN AN OPERATIONAL STATE UNTIL SITE STABILISED.
14. REPAIR ANY SCOUR DAMAGE TO THE SEDIMENT BASIN BATTERS AND EMERGENCY SPILLWAY FOLLOWING RAINFALL EVENTS.
15. SEDIMENT BASIN SHOULD NOT BE CONSTRUCTED WITH SMOOTH INTERNAL SLOPES AND BASIN BATTERS SHOULD NOT BE STEEPER THEN 3(H):1(V).
16. BASINS SHOULD BE APPROPRIATELY FENCED AND MARKED BY WARNING SIGNS IF UNSUPERVISED PUBLIC ACCESS IS LIKELY AND PUBLIC SAFETY IS AT RISK.



ELEVATION

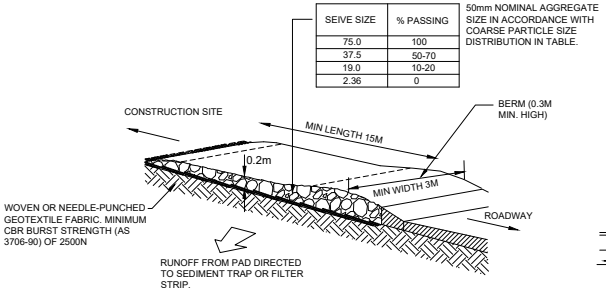


PLAN

SEDIMENT FENCE DETAIL

AS SHOWN

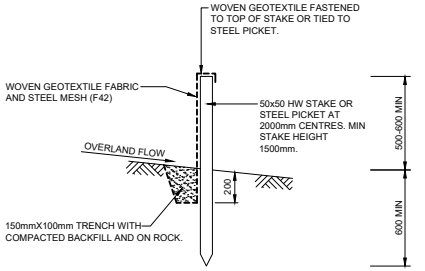
NOTES:
1. HORIZONTAL BAR STEEL MESH TO BE FLUSH WITH TOP OF GEOTEXTILE FABRIC WITH NO VERTICAL BARS PROTRUDING PAST TOP OF SEDIMENT FENCE.
2. NO SHADE CLOTH TO BE USED FOR SEDIMENT FENCING.
3. CATCHMENT DRAINING TO SEDIMENT FENCE SHOULD BE MAX 0.6ha.
4. UPSTEAM SLOPE TO BE 1:2 max AND SLOPE LENGTH 60m MAX.
5. SEDIMENT FENCES ARE TO BE INSTALLED PARALLEL TO CONTOURS WHERE POSSIBLE AND HAVE RETURNS EVERY 20 METRES, TO LIMIT CONTRIBUTING CATCHMENT AND ENCOURAGE PONDING
6. SEDIMENT FENCES TO BE INSTALLED NO MORE THAN 5 METRES FROM DISTURBED AREAS OR STOCKPILES.



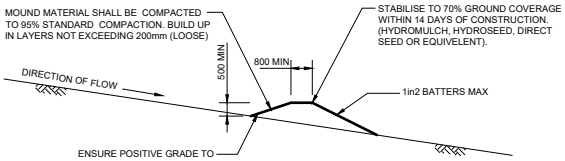
TEMPORARY STABILISED SITE ENTRY/EXIT (ROCK)

SCALE N.T.S.

NOTES:
1. STABILISED ACCESS SHOULD BE CLEANED AND MAINTAINED AFTER EVERY RAINFALL EVENT (>5mm) AND WHEN SEDIMENT ACCUMULATION IS NOTED.
2. FINE ACCUMULATED SEDIMENTS SHOULD BE REMOVED FROM AGGREGATE REGULARLY.

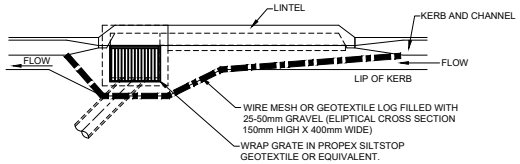


SECTION DETAIL



DIVERSION MOUND / BUNDWALL DETAIL

SCALE N.T.S.



TEMPORARY GULLY TRAP DETAIL

SCALE N.T.S.

SERVICE CLASHES
CONTRACTOR TO REFER TO SERVICES DOCUMENTATION AND LIAISE WITH THE RELEVANT AUTHORITY TO MITIGATE ANY SERVICE CLASHES WITH THE PROPOSED WORKS.

WARNING
BEWARE OF UNDERGROUND SERVICES.
THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CIVIL CONTRACTOR PRIOR TO CONSTRUCTION OF ANY CIVIL WORKS. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

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REV	DATE	BY	DESCRIPTION	CHK	APP
P8	28/05/2025	J.C	DESIGN ACCEPTANCE ISSUE	M.B	J.L
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DRAWING STATUS: **FOR APPROVAL** NOT TO BE USED FOR CONSTRUCTION

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CLIENT: ACT Government — CITY RENEWAL AUTHORITY

ARCHITECT: OCULUS

PROJECT: DICKSON SHOPS AND STREETSCAPE

TITLE: EROSION AND SEDIMENT NOTES AND DETAILS

SCALE @ A1:	CHECKED:	APPROVED:
N.T.S	I.Y	J.L
PROJECT NUMBER:	DRAWN:	DATE:
PS208025	J.P	23/05/2025
DRAWING No:		REV:
C011		P8

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NOTE: THERE IS NO SURVEY AVAILABLE FOR THE EXISTING CAR PARK SURROUNDED BY JOAN KELLET WAY, SO ALL OUTLINES ARE INDICATIVE DETAILED FEATURE SURVEY AND UNDERGROUND SERVICES LOCATION MUST BE COMPLETED TO CONFIRM DESIGN INTENT AND SITE SETOUT FOR THE EXISTING CAR PARK AREA (SECTION 30 BLOCK 19) AND NEW INSTALLATIONS, PRIOR TO ANY SITE WORKS COMMENCING.

NOTES:

1. REFER TO DRAWING PS208025-C000 FOR DRAWING LIST. REFER TO DRAWING PS208025-C001 FOR GENERAL NOTES AND REQUIREMENTS.
2. ALL PIT GRATES/COVERS SUBJECT TO VEHICLE TRAFFIC SHALL BE CLASS D LOAD RATED.
3. ALL GRATED PITS WITHIN PEDESTRIAN PATHS SHALL HAVE SLIP RESISTANT, AND HEELSAFE GRATES.
4. THE CONTRACTOR IS TO ALLOW FOR DOWNPIPE CONNECTION FROM BUILDING PERIMETER TO STORMWATER NETWORK AND FOR MISCELLANEOUS GRATES, PITS AND PIPE NETWORK WITHIN THE CURTILAGE OF THE BUILDING.
5. THE CONTRACTOR IS TO INSTALL SUBSOIL DRAINAGE SYSTEMS WITHIN NEW SOFTSCAPE LANDSCAPING.
6. THE CONTRACTOR IS TO ALLOW FOR SHORING AND SUPPORT FOR DEEP PIPE TRENCH EXCAVATIONS AND EXCAVATIONS IN CLOSE PROXIMITY TO FOOTINGS/STRUCTURES.
7. THE CONTRACTOR IS TO ALLOW FOR DIVERSION AND PROTECTION OF EXISTING IN-GROUND UTILITIES WITHIN PROPOSED DRAINAGE CORRIDORS (INCLUDING ANY TEMPORARY CONNECTIONS).
8. REFER TO HYDRAULIC DRAWINGS FOR ALL BUILDING STORMWATER INCLUDING DOWNPIPES, FLOOR WASTE ETC, AND THEIR ASSOCIATED IN-GROUND PIPEWORK CONNECTING TO NEAREST CIVIL STORMWATER PIT.
9. ALL STORMWATER DRAINAGE WORKS ARE TO BE UNDERTAKEN IN ACCORDANCE WITH THE LATEST VERSION OF MUNICIPAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS 03A - TRENCHING FOR UNDERGROUND SERVICES; 03B - -PIPE DRAINAGE; 03D - DRAINAGE STRUCTURES; AND 03H ROAD OPENING & RESTORATION.
10. CONSTRUCTION LOADING OF NEWLY INSTALLED PIPES IS NOT TO EXCEED LOAD LIMITATIONS AS OUTLINED ON DETAIL SHEET C103 AND C104.

LEGEND:

- PROJECT BOUNDARY LINE
- EX.D — EXISTING DRAINAGE
- EX.W — EXISTING WATER
- EX.E — EXISTING ELECTRICAL
- EX.E HV — EXISTING ELECTRICAL HIGH VOLTAGE
- EX.E LV — EXISTING ELECTRICAL LOW VOLTAGE
- EX.G — EXISTING GAS
- EX.T — EXISTING COMMUNICATIONS
- EX.S — EXISTING SEWER
- EX.S — EXISTING SERVICES LINE TO BE DEMOLISHED
- 300Ø — PROPOSED STORMWATER DRAINAGE
- GRATED PIT
- TYPE R AND TYPE QS
- TRENCH GRATE
- AG — AG DRAIN
- PIT.01 — PIT NUMBER REFERENCE
- SEALED PIT
- 300Ø — EXISTING STORMWATER DRAINAGE RETAINED (CONNECTIONS)
- EXISTING STORMWATER DRAINAGE TO BE DEMOLISHED
- PROPOSED PIPE TO BE ENCASED
- 576.38 — PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED 100mmØ UPVC STORMWATER DRAINAGE CONNECTION PIPE
- > SSD > — SUBSOIL DRAIN (REFER TO ACTSD-0301)
- FLUSHING POINT (REFER TO ACTSD-0302)

C025 C021 C022 C023 C024 C026 C027

HANNA ENDERS LANE
JOAN KELLET WAY
JOAN KELLET WAY
HANNA ENDERS LANE
COWPER STREET
BADHAM STREET
DICKSON PLACE

SERVICE CLASHES
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P1	16/09/2024	J.C	DRAFT FSP ISSUE	J.L	J.L

DRAWING STATUS: **FOR APPROVAL**
NOT TO BE USED FOR CONSTRUCTION

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CLIENT: ACT Government — CITY RENEWAL AUTHORITY
ARCHITECT: OCULUS

PROJECT: DICKSON SHOPS AND STREETSCAPE
TITLE: STORMWATER DRAINAGE OVERALL LAYOUT PLAN

SCALE @ A1:	CHECKED:	APPROVED:
1:400	I.Y	J.L
PROJECT NUMBER:	DRAWN:	DATE:
PS208025	J.P	10/06/2025
DRAWING No:		REV:
C020		P8

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DATE PLOTTED: 10/06/2025 11:18:09 AM BY: CAB[OTHK], JAYVEE

Binder 3a,908

PRINT IN COLOUR

FOR CONTINUATION REFER TO PS208025-C025

2 1 0 2 4 6m
1:100

NOTES:

1. REFER TO DRAWING PS208025-C000 FOR DRAWING LIST. REFER TO DRAWING PS208025-C001 FOR GENERAL NOTES AND REQUIREMENTS.
2. REFER TO DRAWING PS208025-C020 FOR SPECIFIC NOTES AND LEGEND.

JOAN KELLET WAY

JOAN KELLET WAY

MATCH LINE

MATCH LINE

FOR CONTINUATION REFER TO PS208025-C023

FOR CONTINUATION REFER TO PS208025-C024

TROLLEY BAY

SERVICE CLASHES
CONTRACTOR TO REFER TO SERVICES DOCUMENTATION AND LIAISE WITH THE RELEVANT AUTHORITY TO MITIGATE ANY SERVICE CLASHES WITH THE PROPOSED WORKS.

WARNING
BEWARE OF UNDERGROUND SERVICES.
THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CIVIL CONTRACTOR PRIOR TO CONSTRUCTION OF ANY CIVIL WORKS. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

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REV	DATE	BY	DESCRIPTION	CHK	APP
P8	28/05/2025	J.C	DESIGN ACCEPTANCE ISSUE	M.B	J.L
P7	24/04/2025	J.C	100% DOCUMENT READINESS	MB	J.L
P6	08/04/2025	J.C	100% DOCUMENT READINESS	M.B	J.L
P5	07/02/2025	J.C	100% DOCUMENT READINESS	MB	J.L
P4	31/01/2025	J.C	100% DOCUMENT READINESS	J.L	J.L
P3	08/11/2024	J.C	DOCUMENT READINESS (75%)	M.B	J.L
P2	02/10/2024	J.C	FINAL FSP ISSUE	J.L	J.L
P1	16/09/2024	J.C	DRAFT FSP ISSUE	J.L	J.L

DRAWING STATUS: FOR APPROVAL
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CLIENT: ACT Government — CITY RENEWAL AUTHORITY

ARCHITECT: OCULUS

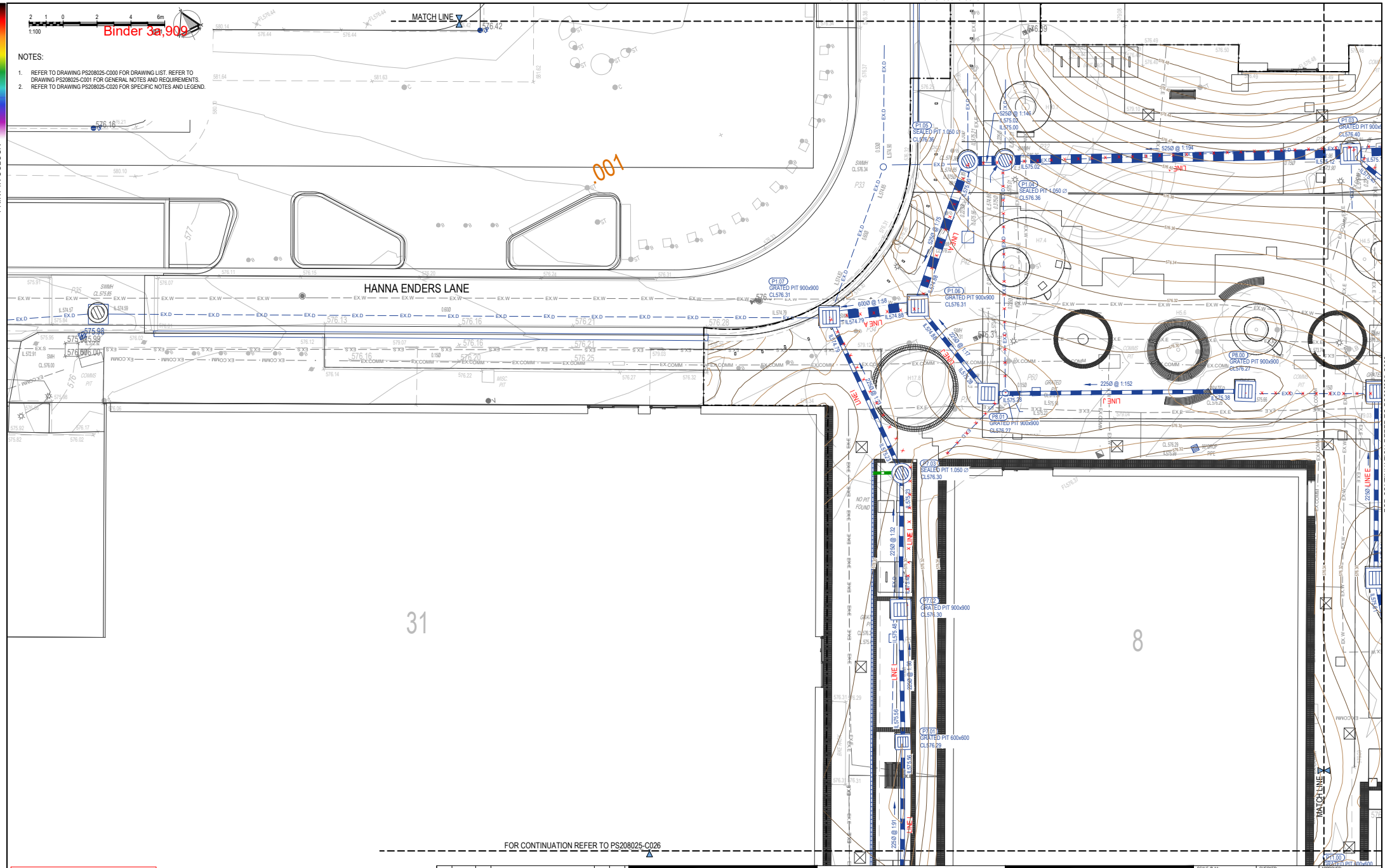
PROJECT: DICKSON SHOPS AND STREETSCAPE

TITLE: STORMWATER DRAINAGE LAYOUT PLAN SHEET 1

SCALE @ A1:	CHECKED:	APPROVED:
1:100	I.Y	J.L
PROJECT NUMBER:	DRAWN:	DATE:
PS208025	J.P	11/06/2025
DRAWING No:		REV:
C021		P8

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DATE PLOTTED: 11/06/2025 8:30:24 AM BY: LONGKHANG, JAMES



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SERVICE CLASHES
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WARNING
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REV	DATE	BY	DESCRIPTION	CHK	APP
P8	28/05/2025	J.C	DESIGN ACCEPTANCE ISSUE	M.B	J.L
P7	24/04/2025	J.C	100% DOCUMENT READINESS	MB	J.L
P6	08/04/2025	J.C	100% DOCUMENT READINESS	M.B	J.L
P5	07/02/2025	J.C	100% DOCUMENT READINESS	MB	J.L
P4	31/01/2025	J.C	100% DOCUMENT READINESS	J.L	J.L
P3	08/11/2024	J.C	DOCUMENT READINESS (75%)	M.B	J.L
P2	02/10/2024	J.C	FINAL FSP ISSUE	J.L	J.L
P1	16/09/2024	J.C	DRAFT FSP ISSUE	J.L	J.L

DRAWING STATUS: FOR APPROVAL
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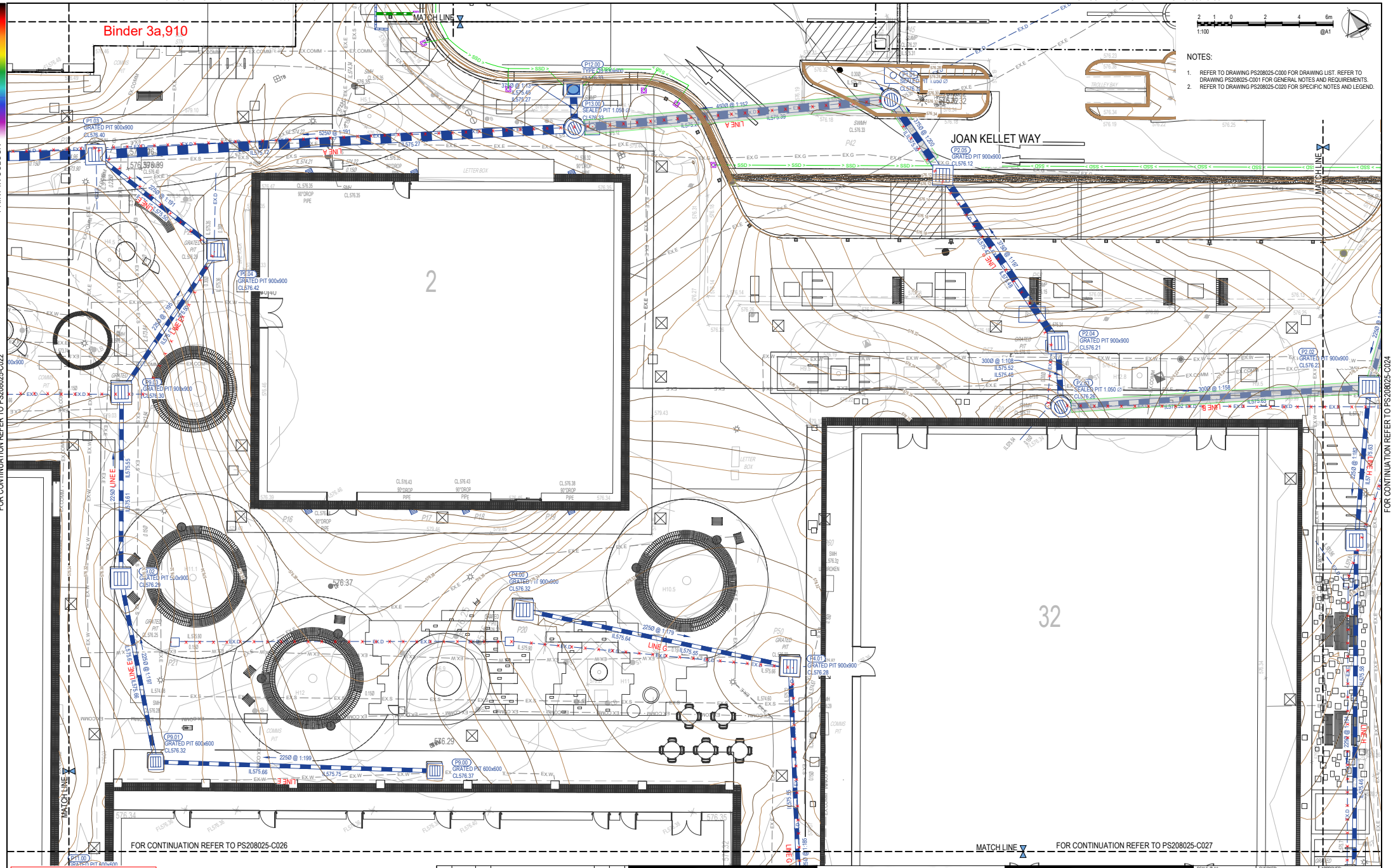
CLIENT: ACT Government — CITY RENEWAL AUTHORITY
ARCHITECT: OCULUS

PROJECT: DICKSON SHOPS AND STREETSCAPE
TITLE: STORMWATER DRAINAGE LAYOUT PLAN SHEET 2

SCALE @ A1:	CHECKED:	APPROVED:
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PROJECT NUMBER:	DRAWN:	DATE:
PS208025	J.P	11/06/2025
DRAWING No:		REV:
C022		P8

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DATE PLOTTED: 11/06/2025 8:31:17 AM BY: CONSKWANG, JAMES



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SERVICE CLASHES
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WARNING
BEWARE OF UNDERGROUND SERVICES.
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BEFORE YOU DIG www.byda.com.au

REV	DATE	BY	DESCRIPTION	CHK	APP
P8	28/05/2025	J.C	DESIGN ACCEPTANCE ISSUE	M.B	J.L
P7	24/04/2025	J.C	100% DOCUMENT READINESS	MB	J.L
P6	08/04/2025	J.C	100% DOCUMENT READINESS	M.B	J.L
P5	07/02/2025	J.C	100% DOCUMENT READINESS	MB	J.L
P4	31/01/2025	J.C	100% DOCUMENT READINESS	J.L	J.L
P3	08/11/2024	J.C	DOCUMENT READINESS (75%)	M.B	J.L
P2	02/10/2024	J.C	FINAL FSP ISSUE	J.L	J.L
P1	16/09/2024	J.C	DRAFT FSP ISSUE	J.L	J.L

DRAWING STATUS: **FOR APPROVAL**
NOT TO BE USED FOR CONSTRUCTION

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CLIENT: ACT Government — CITY RENEWAL AUTHORITY
ARCHITECT: OCULUS

PROJECT: DICKSON SHOPS AND STREETSCAPE
TITLE: STORMWATER DRAINAGE LAYOUT PLAN SHEET 3

SCALE @ A1:	CHECKED:	APPROVED:
1:100	I.Y	J.L
PROJECT NUMBER:	DRAWN:	DATE:
PS208025	J.P	11/06/2025
DRAWING No:		REV:
C023		P8

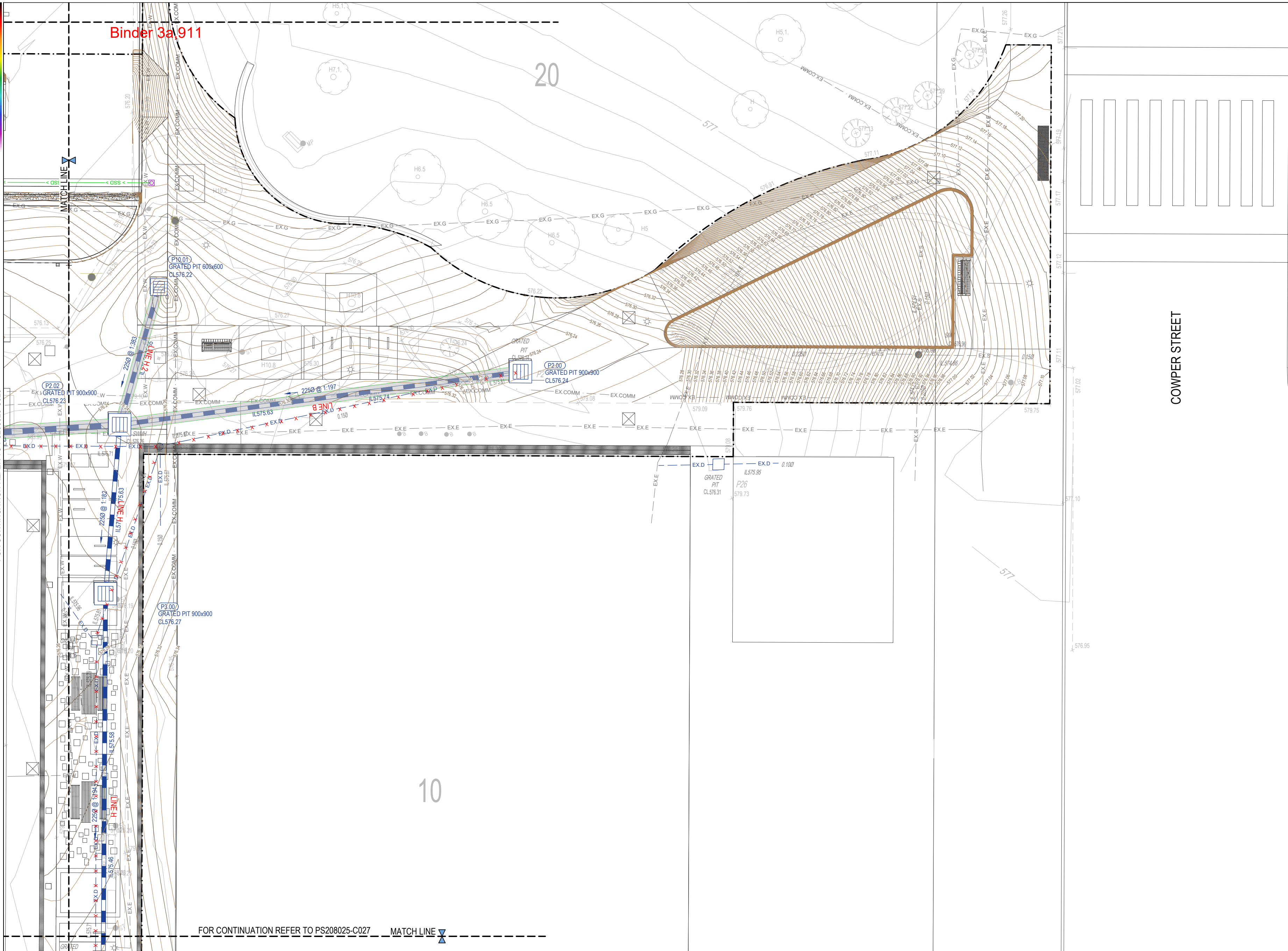
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DATE PLOTTED: 11/06/2025 8:43:27 AM BY: LONGKHANG, JAMES

FOR CONTINUATION REFER TO PS208025-C021

PRINT IN COLOUR

FOR CONTINUATION REFER TO PS208025-C023



FOR CONTINUATION REFER TO PS208025-C027 MATCH LINE

NOTES:

1. REFER TO DRAWING PS208025-C000 FOR DRAWING LIST. REFER TO DRAWING PS208025-C001 FOR GENERAL NOTES AND REQUIREMENTS.
2. REFER TO DRAWING PS208025-C020 FOR SPECIFIC NOTES AND LEGEND.

SERVICE CLASHES

CONTRACTOR TO REFER TO SERVICES DOCUMENTATION AND LIAISE WITH THE RELEVANT AUTHORITY TO MITIGATE ANY SERVICE CLASHES WITH THE PROPOSED WORKS.

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REV	DATE	BY	DESCRIPTION	CHK	APP
P8	28/05/2025	J.C	DESIGN ACCEPTANCE ISSUE	M.B	J.L
P7	24/04/2025	J.C	100% DOCUMENT READINESS	MB	J.L
P6	08/04/2025	J.C	100% DOCUMENT READINESS	M.B	J.L
P5	07/02/2025	J.C	100% DOCUMENT READINESS	MB	J.L
P4	31/01/2025	J.C	100% DOCUMENT READINESS	J.L	J.L
P3	08/11/2024	J.C	DOCUMENT READINESS (75%)	M.B	J.L
P2	02/10/2024	J.C	FINAL FSP ISSUE	J.L	J.L
P1	16/09/2024	J.C	DRAFT FSP ISSUE	J.L	J.L

DRAWING STATUS: **FOR APPROVAL** NOT TO BE USED FOR CONSTRUCTION

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CLIENT: ACT Government CITY RENEWAL AUTHORITY

ARCHITECT: OCULUS

PROJECT: DICKSON SHOPS AND STREETSCAPE

TITLE: STORMWATER DRAINAGE LAYOUT PLAN SHEET 4

SCALE @ A1:	CHECKED:	APPROVED:
1:100	I.Y	J.L
PROJECT NUMBER: PS208025	DRAWN: J.P	DATE: 11/06/2025

DRAWING No: C024 REV: P8

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CAD FILE: PS208025-C021-C027.DWG
DATE PLOTTED: 11/06/2025 6:44:06 AM BY : LONGKWANG, JAMES

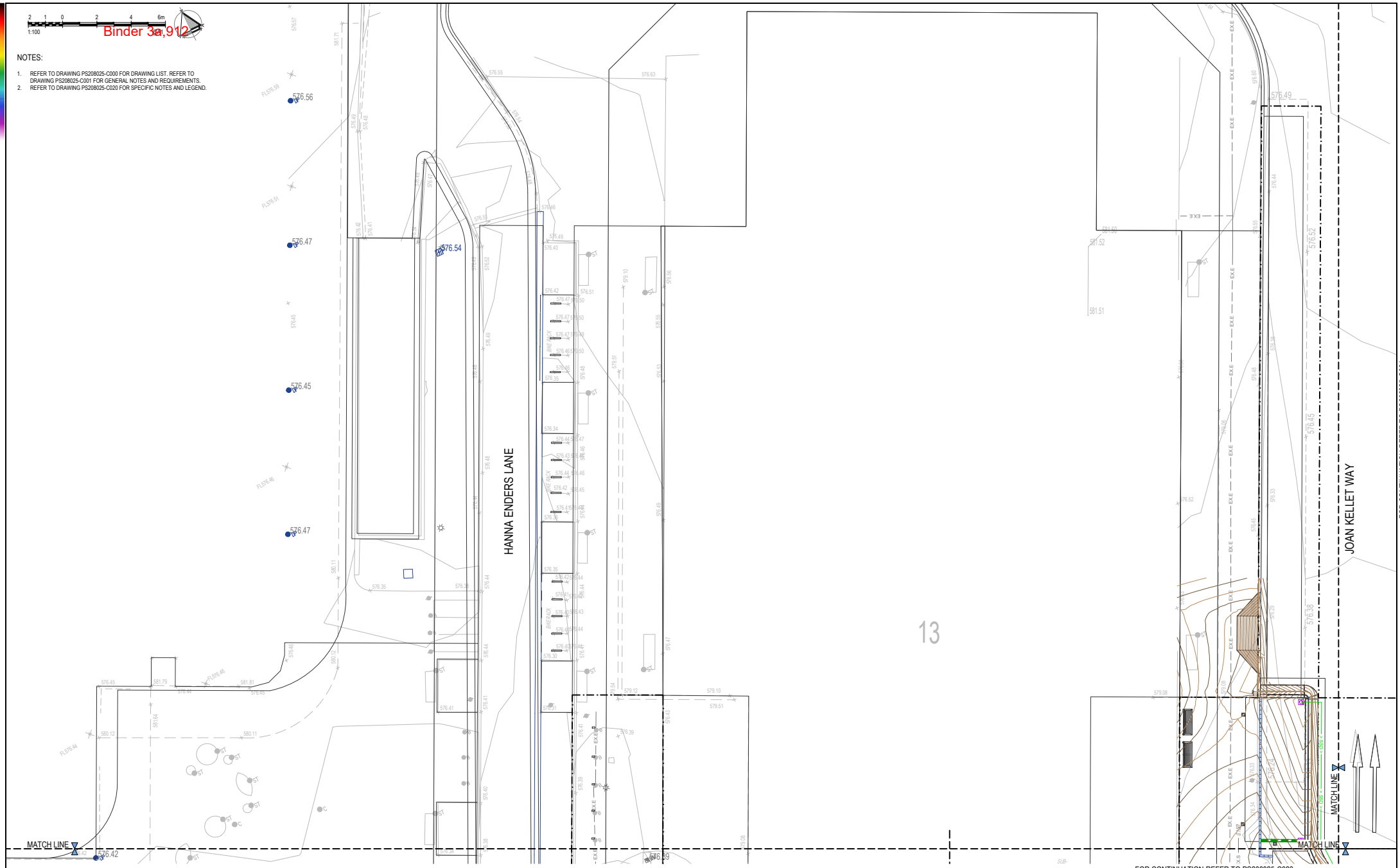
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NOTES:

1. REFER TO DRAWING PS208025-C000 FOR DRAWING LIST. REFER TO DRAWING PS208025-C001 FOR GENERAL NOTES AND REQUIREMENTS.
2. REFER TO DRAWING PS208025-C020 FOR SPECIFIC NOTES AND LEGEND.



FOR CONTINUATION REFER TO PS208025-C022

FOR CONTINUATION REFER TO PS208025-C023

FOR CONTINUATION REFER TO PS208025-C021

SERVICE CLASHES
CONTRACTOR TO REFER TO SERVICES DOCUMENTATION AND LIAISE WITH THE RELEVANT AUTHORITY TO MITIGATE ANY SERVICE CLASHES WITH THE PROPOSED WORKS.

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REV	DATE	BY	DESCRIPTION	CHK	APP
P8	28/05/2025	J.C	DESIGN ACCEPTANCE ISSUE	M.B	J.L
P7	24/04/2025	J.C	100% DOCUMENT READINESS	M.B	J.L
P6	08/04/2025	J.C	100% DOCUMENT READINESS	M.B	J.L
P5	07/02/2025	J.C	100% DOCUMENT READINESS	M.B	J.L
P4	31/01/2025	J.C	100% DOCUMENT READINESS	J.L	J.L
P3	08/11/2024	J.C	DOCUMENT READINESS (75%)	M.B	J.L
P2	02/10/2024	J.C	FINAL FSP ISSUE	J.L	J.L
P1	16/09/2024	J.C	DRAFT FSP ISSUE	J.L	J.L

DRAWING STATUS: **FOR APPROVAL**
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CLIENT: ACT Government — CITY RENEWAL AUTHORITY

ARCHITECT: OCULUS

PROJECT: DICKSON SHOPS AND STREETSCAPE

TITLE: STORMWATER DRAINAGE LAYOUT PLAN SHEET 5

SCALE @ A1:	CHECKED:	APPROVED:
1:100	I.Y	J.L
PROJECT NUMBER:	DRAWN:	DATE:
PS208025	J.P	11/06/2025
DRAWING No:		REV:
C025		P8

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DATE PLOTTED: 11/06/2025 8:43:07 AM BY: LONGKWANG, JAMES

FOR CONTINUATION REFER TO PS208025-C022

FOR CONTINUATION REFER TO PS208025-C023

FOR CONTINUATION REFER TO PS208025-C027

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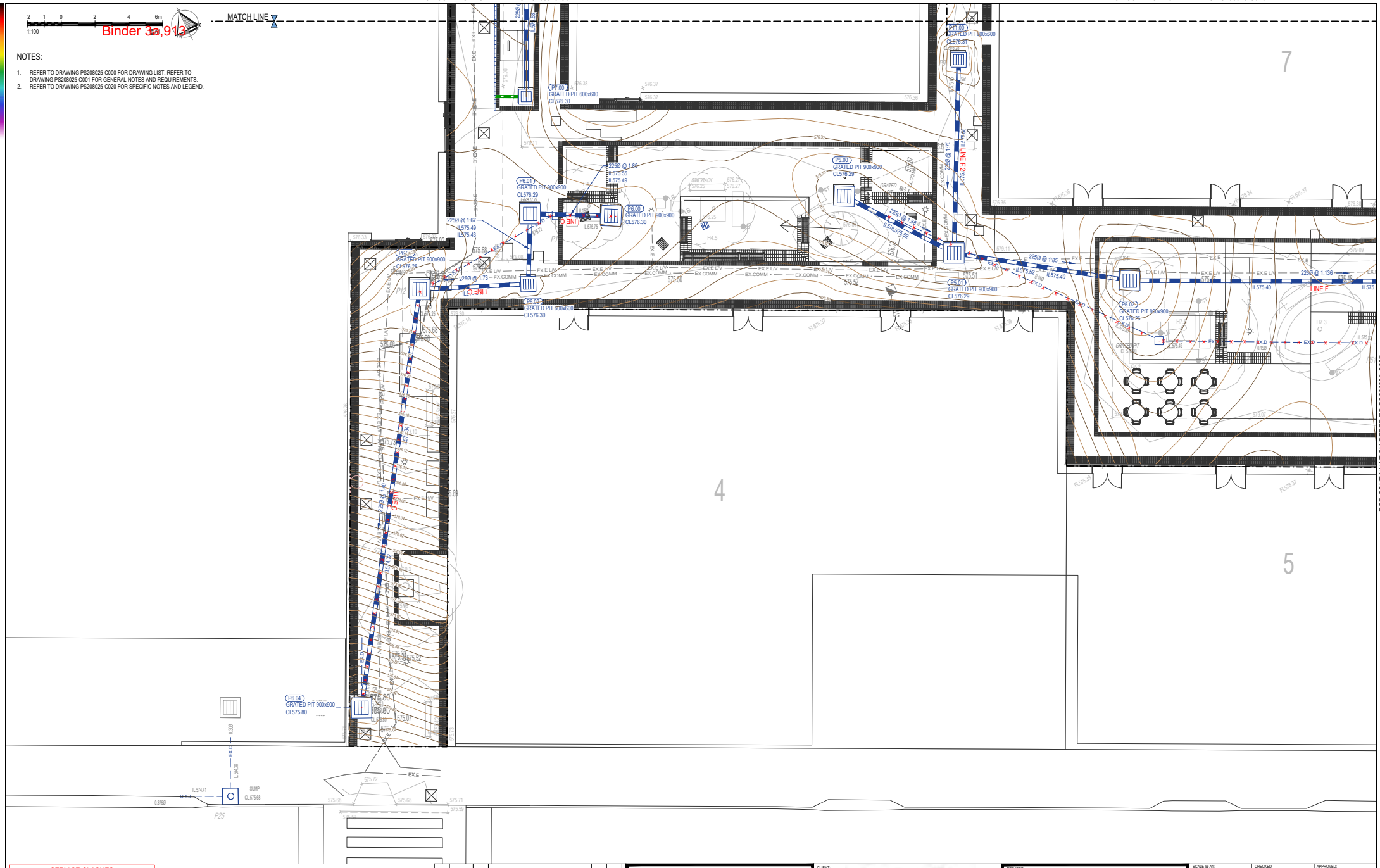
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Binder 3a,913

MATCH LINE

NOTES:

1. REFER TO DRAWING PS208025-C000 FOR DRAWING LIST. REFER TO DRAWING PS208025-C001 FOR GENERAL NOTES AND REQUIREMENTS.
2. REFER TO DRAWING PS208025-C020 FOR SPECIFIC NOTES AND LEGEND.



SERVICE CLASHES
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REV	DATE	BY	DESCRIPTION	CHK	APP
P8	28/05/2025	J.C	DESIGN ACCEPTANCE ISSUE	M.B	J.L
P7	24/04/2025	J.C	100% DOCUMENT READINESS	MB	J.L
P6	08/04/2025	J.C	100% DOCUMENT READINESS	M.B	J.L
P5	07/02/2025	J.C	100% DOCUMENT READINESS	MB	J.L
P4	31/01/2025	J.C	100% DOCUMENT READINESS	J.L	J.L
P3	08/11/2024	J.C	DOCUMENT READINESS (75%)	M.B	J.L
P2	02/10/2024	J.C	FINAL FSP ISSUE	J.L	J.L
P1	16/09/2024	J.C	DRAFT FSP ISSUE	J.L	J.L

DRAWING STATUS: **FOR APPROVAL**
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CLIENT: ACT Government — CITY RENEWAL AUTHORITY

ARCHITECT: OCULUS

PROJECT: DICKSON SHOPS AND STREETSCAPE

TITLE: STORMWATER DRAINAGE LAYOUT PLAN SHEET 6

SCALE @ A1:	CHECKED:	APPROVED:
1:100	I.Y	J.L
PROJECT NUMBER:	DRAWN:	DATE:
PS208025	J.P	11/06/2025
DRAWING No:		REV:
C026		P8

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DATE PLOTTED: 11/06/2025 8:43:47 AM BY: LONGKWANG, JAMES

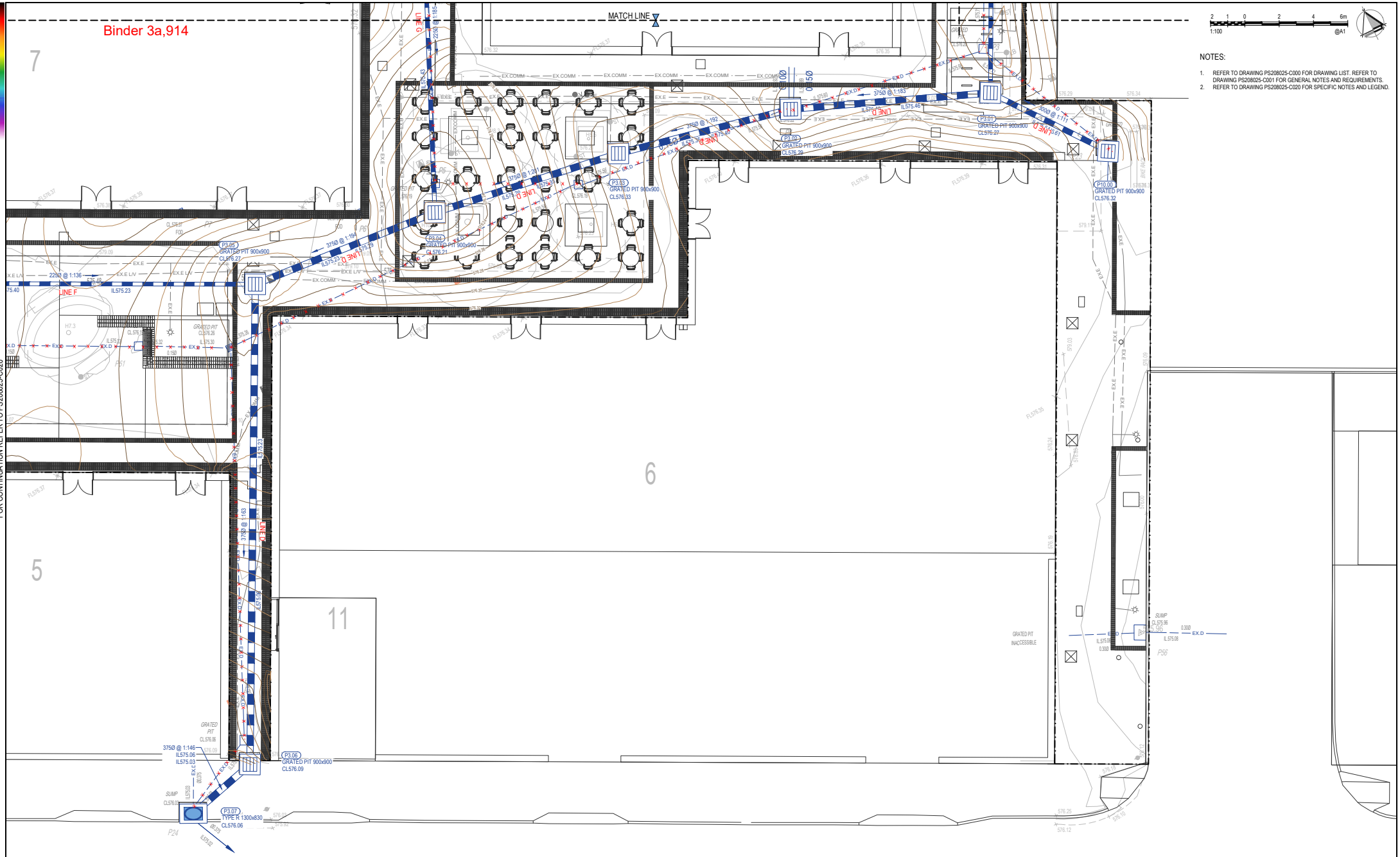
FOR CONTINUATION REFER TO PS208025-C023

FOR CONTINUATION REFER TO PS208025-C024

FOR CONTINUATION REFER TO PS208025-C026

PRINT IN COLOUR

Binder 3a,914



2 1 0 2 4 6m
1:100 @A1

NOTES:

1. REFER TO DRAWING PS208025-C000 FOR DRAWING LIST. REFER TO DRAWING PS208025-C001 FOR GENERAL NOTES AND REQUIREMENTS.
2. REFER TO DRAWING PS208025-C020 FOR SPECIFIC NOTES AND LEGEND.

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REV	DATE	BY	DESCRIPTION	CHK	APP
P8	28/05/2025	J.C	DESIGN ACCEPTANCE ISSUE	M.B	J.L
P7	24/04/2025	J.C	100% DOCUMENT READINESS	MB	J.L
P6	08/04/2025	J.C	100% DOCUMENT READINESS	M.B	J.L
P5	07/02/2025	J.C	100% DOCUMENT READINESS	MB	J.L
P4	31/01/2025	J.C	100% DOCUMENT READINESS	J.L	J.L
P3	08/11/2024	J.C	DOCUMENT READINESS (75%)	M.B	J.L
P2	02/10/2024	J.C	FINAL FSP ISSUE	J.L	J.L
P1	16/09/2024	J.C	DRAFT FSP ISSUE	J.L	J.L

DRAWING STATUS: **FOR APPROVAL**
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CLIENT: ACT Government — CITY RENEWAL AUTHORITY

ARCHITECT: OCULUS

PROJECT: DICKSON SHOPS AND STREETSCAPE

TITLE: STORMWATER DRAINAGE LAYOUT PLAN SHEET 7

SCALE @ A1:	CHECKED:	APPROVED:
1:100	I.Y	J.L
PROJECT NUMBER:	DRAWN:	DATE:
PS208025	J.P	11/06/2025
DRAWING No:		REV:
C027		P8

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DATE PLOTTED: 11/06/2025 8:46:37 AM BY: LONGKHANG, JAMES

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8 4 0 8 16 24m
1:400

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NOTE: THERE IS NO SURVEY AVAILABLE FOR THE EXISTING CAR PARK SURROUNDED BY JOAN KELLET WAY, SO ALL OUTLINES ARE INDICATIVE DETAILED FEATURE SURVEY AND UNDERGROUND SERVICES LOCATION MUST BE COMPLETED TO CONFIRM DESIGN INTENT AND SITE SETOUT FOR THE EXISTING CAR PARK AREA (SECTION 30 BLOCK 19) AND NEW INSTALLATIONS, PRIOR TO ANY SITE WORKS COMMENCING.

NOTES:

1. REFER TO DRAWING PS208025-C000 FOR DRAWING LIST. REFER TO DRAWING PS208025-C001 FOR GENERAL NOTES AND REQUIREMENTS.
2. THE CONTRACTOR IS TO MAKE REFERENCE TO ARCHITECT DRAWINGS FOR LANDSCAPE PROPOSALS.
3. THE CONTRACTOR IS TO INCLUDE ALLOWANCE FOR TEMPORARY TRAFFIC MANAGEMENT AND CONTROL, INCLUDING ANY PHASING ARRANGEMENTS REQUIRED TO UNDERTAKE WORKS.
4. THE CONTRACTOR IS TO ALLOW FOR ANY EXISTING UTLITY DIVERSIONS, ALTERATIONS, UPGRADES OR PROTECTION WORKS REQUIRED FOR THE NEW WORKS.
5. ALL KERBS, GUTTERS AND KERB LAYBACKS ARE TO BE CONSTRUCTED ON COMPACTED GRANULAR SUBBASE TO MATCH ADJACENT PAVEMENT LAYER, UNLESS OTHERWISE NOTED.
6. KERB TRANSITIONS SHALL BE PROVIDED AT EVERY CHANGE OF PROFILE, AND FOR ALL TIE INS TO EXISTING KERBS. THE MINIMUM LENGTH OF TRANSITIONS SHALL BE IN ACCORDANCE WITH ACTSD-0101 REV 0 TABLE 1, OR ANY SUBSEQUENT REVISIONS.
7. CONCRETE KERB RAMPS ARE TO BE FORMED UP AND POURED AS A SINGLE INTEGRAL SLAB.
8. FOR CONSTRUCTION OF RETAINING WALLS THE CONTRACTOR IS TO ALLOW FOR ANY SUBSOIL DRAINAGE, BALUSTRADES, AND SLOPE TREATMENT REQUIRED.
9. THE CONTRACTOR IS TO ALLOW FOR REINSTATEMENT OF PAVEMENTS AT TIE IN TO EXISTING ROADS.
10. REFER TO LANDSCAPE DRAWINGS FOR DETAILS OF HANDRAILS AND BALUSTRADES FOR RETAINING WALLS WHERE REQUIRED.
11. ALL EXCAVATION WITHIN THE TREE PROTECTION ZONES OF THE VERGE TREES MUST BE CARRIED OUT THROUGH HAND DIGGING, HYDRO EXCAVATION OR ANY OTHER RECOMMENDED METHODS TO ENSURE MINIMAL DAMAGE TO THE TREE ROOTS.
12. REFER TO ACCOMPANYING LANDSCAPE DRAWINGS FOR TREE MANAGEMENT PLAN, CANOPY AND TREE PROTECTION REQUIREMENTS, SOFT PLANTING AND VEGETATION SPECIFICATIONS

LEGEND:

- MKG — PROPOSED MOUNTABLE KERB AND GUTTER
- KG — PROPOSED KERB AND GUTTER
- KO — PROPOSED KERB ONLY
- FK — PROPOSED FLUSH KERB
- CK — PROPOSED FLUSH KERB
- OCI — PROPOSED OPEN INVERT CHANNEL
- RW — PROPOSED RETAINING WALL
- PROPOSED KERB RAMP
- B — PROPOSED BOLLARD
- TREE PROTECTION ZONE
- 449.50 — PROPOSED CONTOURS
- 444.50 — EXISTING CONTOURS
- 3.46% — SURFACE SLOPE ARROW
- + P576.35 — SPOT SURFACE ELEVATION

C035 C031 C032 C033 C034 C036 C037

HANNA ENDERS LANE
JOAN KELLET WAY
COWPER STREET
BADHAM STREET
DICKSON PLACE

SERVICE CLASHES

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WARNING

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REV	DATE	BY	DESCRIPTION	CHK	APP
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P7	24/04/2025	J.C	100% DOCUMENT READINESS	MB	J.L
P6	08/04/2025	J.C	100% DOCUMENT READINESS	M.B	J.L
P5	07/02/2025	J.C	100% DOCUMENT READINESS	MB	J.L
P4	31/01/2025	J.C	100% DOCUMENT READINESS	J.L	J.L
P3	08/11/2024	J.C	DOCUMENT READINESS (75%)	M.B	J.L
P2	02/10/2024	J.C	FINAL FSP ISSUE	J.L	J.L
P1	16/09/2024	J.C	DRAFT FSP ISSUE	J.L	J.L

DRAWING STATUS: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION

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CLIENT: ACT Government — CITY RENEWAL AUTHORITY

ARCHITECT: OCULUS

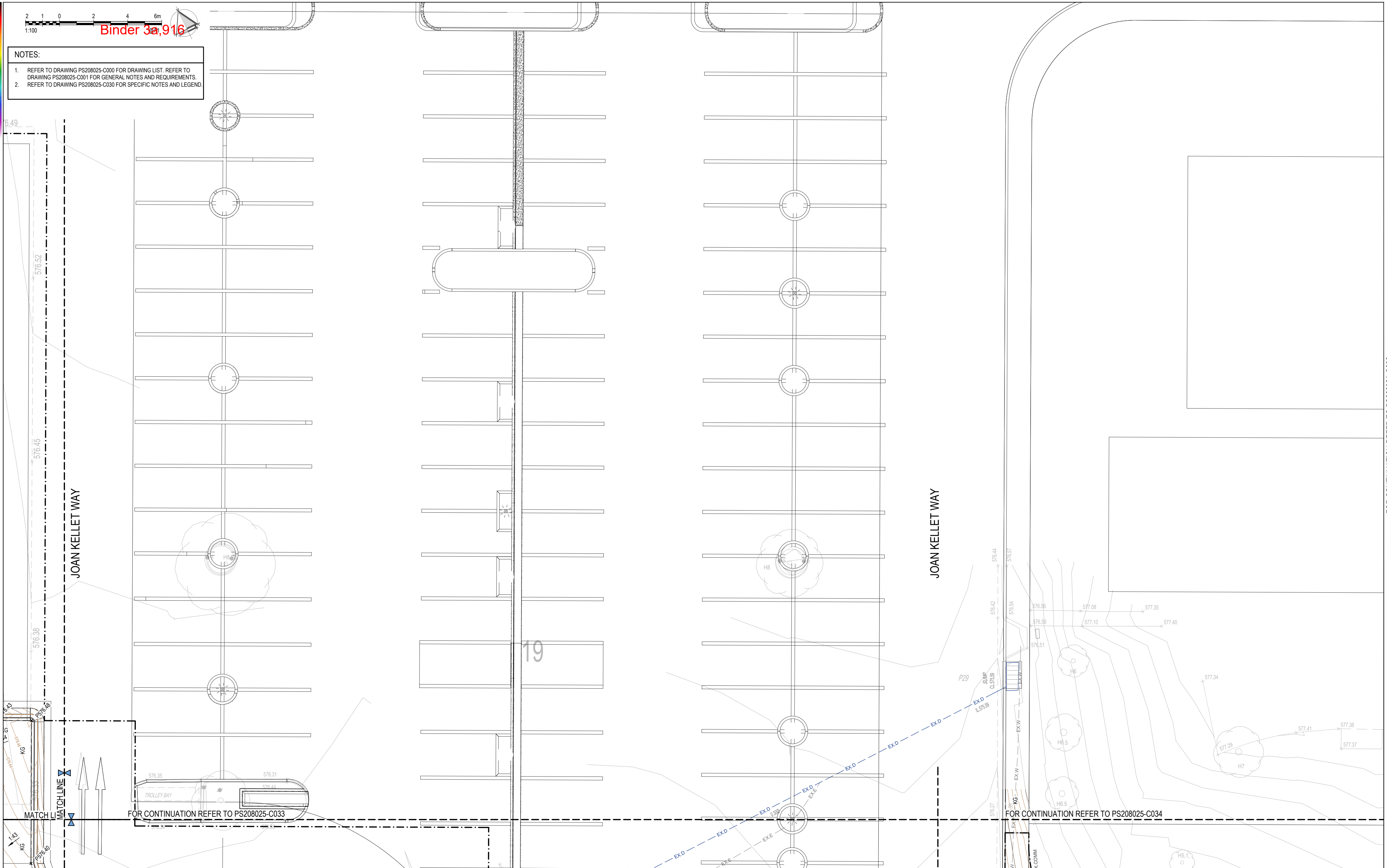
PROJECT: DICKSON SHOPS AND STREETSCAPE

TITLE: CIVIL WORKS LAYOUT OVERALL LAYOUT PLAN

SCALE @ A1:	CHECKED:	APPROVED:
1:400	I.Y	J.L
PROJECT NUMBER:	DRAWN:	DATE:
PS208025	J.P	23/05/2025
DRAWING No: C030		REV: P8

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DATE PLOTTED: 23/05/2025 1:38:41 PM BY: CASSTING, JAYVEE



PRINT IN COLOUR

NOTES:

1. REFER TO DRAWING PS208025-C000 FOR DRAWING LIST. REFER TO DRAWING PS208025-C001 FOR GENERAL NOTES AND REQUIREMENTS.
2. REFER TO DRAWING PS208025-C030 FOR SPECIFIC NOTES AND LEGEND.

SERVICE CLASHES

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REV	DATE	BY	DESCRIPTION	CHK	APP
P8	28/05/2025	J.C	DESIGN ACCEPTANCE ISSUE	M.B	J.L
P7	24/04/2025	J.C	100% DOCUMENT READINESS	MB	J.L
P6	08/04/2025	J.C	100% DOCUMENT READINESS	M.B	J.L
P5	07/02/2025	J.C	100% DOCUMENT READINESS	MB	J.L
P4	31/01/2025	J.C	100% DOCUMENT READINESS	J.L	J.L
P3	08/11/2024	J.C	DOCUMENT READINESS (75%)	M.B	J.L
P2	02/10/2024	J.C	FINAL FSP ISSUE	J.L	J.L
P1	16/09/2024	J.C	DRAFT FSP ISSUE	J.L	J.L

DRAWING STATUS: **FOR APPROVAL** NOT TO BE USED FOR CONSTRUCTION

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CLIENT: ACT Government CITY RENEWAL AUTHORITY

ARCHITECT: OCULUS

PROJECT: DICKSON SHOPS AND STREETSCAPE

TITLE: CIVIL WORKS LAYOUT PLAN SHEET 1

SCALE @ A1:	CHECKED:	APPROVED:
1:100	I.Y	J.L
PROJECT NUMBER: PS208025	DRAWN: J.P	DATE: 23/05/2025
DRAWING No: C031		REV: P8

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CAD FILE: PS208025-C031.DWG

DATE PLOTTED: 23/05/2025 1:39:40 PM BY : CABIGTING, JAYVEE

Binder 3a,917

PRINT IN COLOUR

FOR CONTINUATION REFER TO PS208025-C035

FOR CONTINUATION REFER TO PS208025-C033

FOR CONTINUATION REFER TO PS208025-C036

2 1 0 2 4 6m
1:100

NOTES:

1. REFER TO DRAWING PS208025-C000 FOR DRAWING LIST. REFER TO DRAWING PS208025-C001 FOR GENERAL NOTES AND REQUIREMENTS.
2. REFER TO DRAWING PS208025-C030 FOR SPECIFIC NOTES AND LEGEND.

MATCH LINE

HANNA ENDERS LANE

31

8

SERVICE CLASHES
CONTRACTOR TO REFER TO SERVICES DOCUMENTATION AND LIAISE WITH THE RELEVANT AUTHORITY TO MITIGATE ANY SERVICE CLASHES WITH THE PROPOSED WORKS.

WARNING
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P5	07/02/2025	J.C	100% DOCUMENT READINESS	MB	J.L
P4	31/01/2025	J.C	100% DOCUMENT READINESS	J.L	J.L
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P1	16/09/2024	J.C	DRAFT FSP ISSUE	J.L	J.L

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CLIENT: ACT Government — CITY RENEWAL AUTHORITY

ARCHITECT: OCULUS

PROJECT: DICKSON SHOPS AND STREETSCAPE

TITLE: CIVIL WORKS LAYOUT PLAN SHEET 2

SCALE @ A1:	CHECKED:	APPROVED:
1:100	I.Y	J.L
PROJECT NUMBER:	DRAWN:	DATE:
PS208025	J.P	23/05/2025
DRAWING No:		REV:
C032		P8

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FOR CONTINUATION REFER TO PS208025-C035

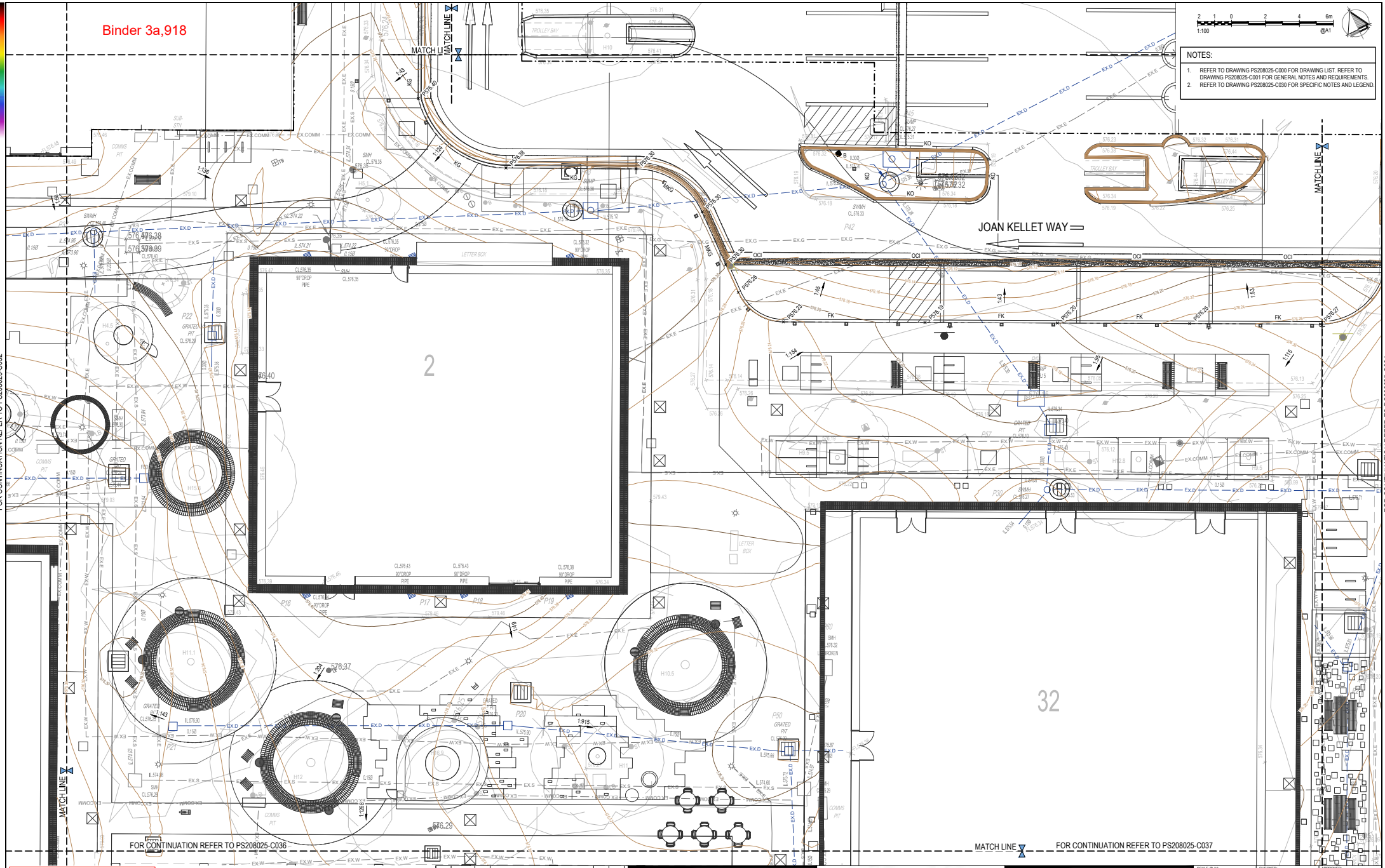
FOR CONTINUATION REFER TO PS208025-C031

Binder 3a,918

PRINT IN COLOUR

FOR CONTINUATION REFER TO PS208025-C032

FOR CONTINUATION REFER TO PS208025-C034



FOR CONTINUATION REFER TO PS208025-C036

MATCH LINE

FOR CONTINUATION REFER TO PS208025-C037

2 1 0 2 4 6m
1:100 @A1

NOTES:

1. REFER TO DRAWING PS208025-C000 FOR DRAWING LIST. REFER TO DRAWING PS208025-C001 FOR GENERAL NOTES AND REQUIREMENTS.
2. REFER TO DRAWING PS208025-C030 FOR SPECIFIC NOTES AND LEGEND.

SERVICE CLASHES
CONTRACTOR TO REFER TO SERVICES DOCUMENTATION AND LIAISE WITH THE RELEVANT AUTHORITY TO MITIGATE ANY SERVICE CLASHES WITH THE PROPOSED WORKS.

WARNING
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P3	08/11/2024	J.C	DOCUMENT READINESS (75%)	M.B	J.L
P2	02/10/2024	J.C	FINAL FSP ISSUE	J.L	J.L
P1	16/09/2024	J.C	DRAFT FSP ISSUE	J.L	J.L

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CLIENT: ACT Government — CITY RENEWAL AUTHORITY

ARCHITECT: OCULUS

PROJECT: DICKSON SHOPS AND STREETSCAPE

TITLE: CIVIL WORKS LAYOUT PLAN SHEET 3

SCALE @ A1:	CHECKED:	APPROVED:
1:100	I.Y	J.L
PROJECT NUMBER:	DRAWN:	DATE:
PS208025	J.P	23/05/2025
DRAWING No:		REV:
C033		P8

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FOR CONTINUATION REFER TO PS208025-C031

Binder 3a,919

PRINT IN COLOUR

FOR CONTINUATION REFER TO PS208025-C033

MATCH LINE

20

10

COWPER STREET

FOR CONTINUATION REFER TO PS208025-C037 MATCH LINE

2 1 0 2 4 6m
1:100 @A1

NOTES:

1. REFER TO DRAWING PS208025-C000 FOR DRAWING LIST. REFER TO DRAWING PS208025-C001 FOR GENERAL NOTES AND REQUIREMENTS.
2. REFER TO DRAWING PS208025-C030 FOR SPECIFIC NOTES AND LEGEND.

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ARCHITECT: OCULUS

PROJECT: DICKSON SHOPS AND STREETSCAPE

TITLE: CIVIL WORKS LAYOUT PLAN
SHEET 4

SCALE @ A1:	CHECKED:	APPROVED:
1:100	I.Y	J.L
PROJECT NUMBER:	DRAWN:	DATE:
PS208025	J.P	23/05/2025
DRAWING No:		REV:
C034		P8

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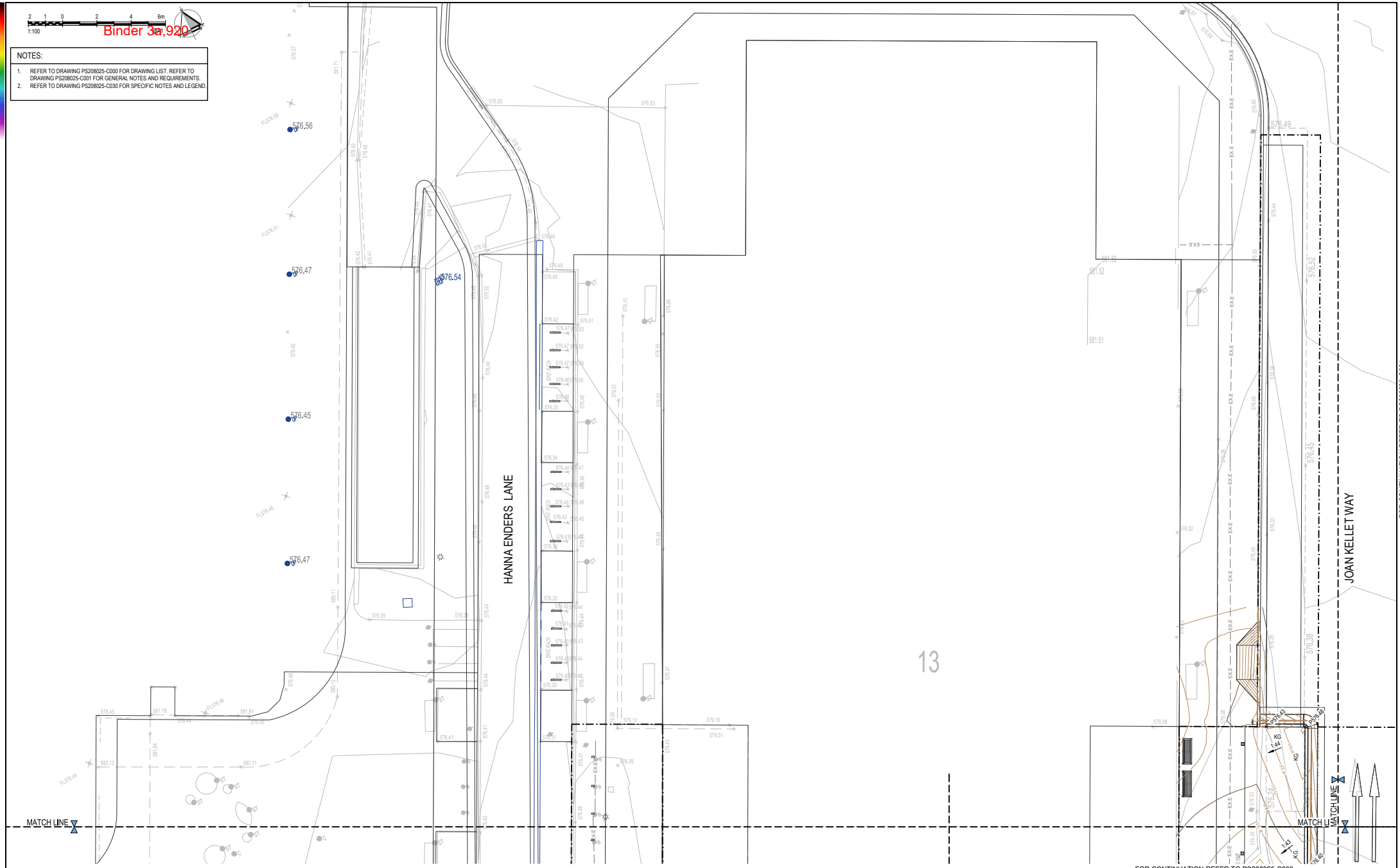
Binder 3a,920

PRINT IN COLOUR

2 1 0 2 4 6m
1:100

NOTES:

1. REFER TO DRAWING PS208025-C000 FOR DRAWING LIST. REFER TO DRAWING PS208025-C001 FOR GENERAL NOTES AND REQUIREMENTS.
2. REFER TO DRAWING PS208025-C030 FOR SPECIFIC NOTES AND LEGEND.



FOR CONTINUATION REFER TO PS208025-C032

FOR CONTINUATION REFER TO PS208025-C033

FOR CONTINUATION REFER TO PS208025-C031

SERVICE CLASHES
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P4	31/01/2025	J.C	100% DOCUMENT READINESS	J.L	J.L
P3	08/11/2024	J.C	DOCUMENT READINESS (75%)	M.B	J.L
P2	02/10/2024	J.C	FINAL FSP ISSUE	J.L	J.L
P1	16/09/2024	J.C	DRAFT FSP ISSUE	J.L	J.L

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ARCHITECT: OCULUS

PROJECT: DICKSON SHOPS AND STREETSCAPE

TITLE: CIVIL WORKS LAYOUT PLAN
SHEET 5

SCALE @ A1:	CHECKED:	APPROVED:
1:100	I.Y	J.L
PROJECT NUMBER:	DRAWN:	DATE:
PS208025	J.P	23/05/2025
DRAWING No:		REV:
C035		P8

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FOR CONTINUATION REFER TO PS208025-C032

FOR CONTINUATION REFER TO PS208025-C033

FOR CONTINUATION REFER TO PS208025-C037

PRINT IN COLOUR

2 1 0 2 4 6m
1:100

Binder 3a,921

MATCH LINE

NOTES:

1. REFER TO DRAWING PS208025-C000 FOR DRAWING LIST. REFER TO DRAWING PS208025-C001 FOR GENERAL NOTES AND REQUIREMENTS.
2. REFER TO DRAWING PS208025-C030 FOR SPECIFIC NOTES AND LEGEND.

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P1	16/09/2024	J.C	DRAFT FSP ISSUE	J.L	J.L

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ARCHITECT: OCULUS

PROJECT: DICKSON SHOPS AND STREETSCAPE

TITLE: CIVIL WORKS LAYOUT PLAN
SHEET 6

SCALE @ A1:	CHECKED:	APPROVED:
1:100	I.Y	J.L
PROJECT NUMBER:	DRAWN:	DATE:
PS208025	J.P	23/05/2025
DRAWING No:		REV:
C036		P8

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FOR CONTINUATION REFER TO PS208025-C033

FOR CONTINUATION REFER TO PS208025-C034

Binder 3a,922

MATCH LINE

2 1 0 2 4 6m
1:100 @A1

NOTES:

1. REFER TO DRAWING PS208025-C000 FOR DRAWING LIST. REFER TO DRAWING PS208025-C001 FOR GENERAL NOTES AND REQUIREMENTS.
2. REFER TO DRAWING PS208025-C030 FOR SPECIFIC NOTES AND LEGEND.

PRINT IN COLOUR

FOR CONTINUATION REFER TO PS208025-C036

SERVICE CLASHES
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P1	16/09/2024	J.C	DRAFT FSP ISSUE	J.L	J.L

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ARCHITECT: OCULUS

PROJECT: DICKSON SHOPS AND STREETSCAPE

TITLE: CIVIL WORKS LAYOUT PLAN
SHEET 7

SCALE @ A1:	CHECKED:	APPROVED:
1:100	I.Y	J.L
PROJECT NUMBER:	DRAWN:	DATE:
PS208025	J.P	23/05/2025
DRAWING No:		REV:
C037		P8

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