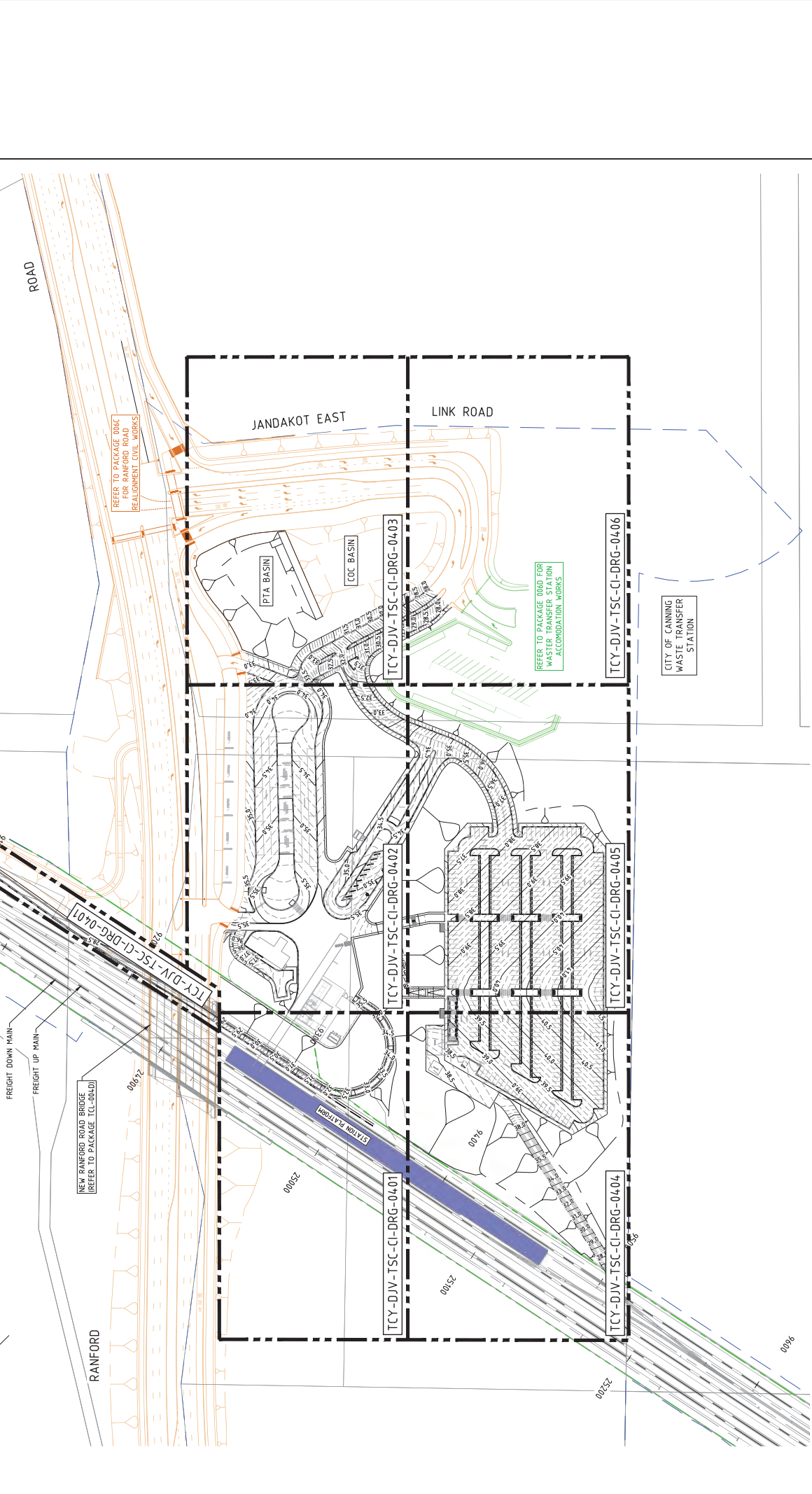


APPENDIX N PRELIMINARY DRAINAGE PLANS

NOTES
 1. ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.

LEGEND
 --- NEW RAIL RESERVE BOUNDARY
 --- EPA BOUNDARY



SCALE :
 1:1000
 HORIZONTAL : PCC20
 VERTICAL : AHDT1

DATUM :
 PTA ACCEPTANCE STAMP

DESIGNED DR :
 DRAWN GC
 CHECKED BS
 APPROVED FOR ISSUE PTA DIVISION / External Company

DATE :

REFERENCES

TCY-DJV-TSC-CI-DRG-04-00
 TCY-DJV-TSC-CI-DRG-04-01
 TCY-DJV-TSC-CI-DRG-04-02
 TCY-DJV-TSC-CI-DRG-04-03
 TCY-DJV-TSC-CI-DRG-04-04
 TCY-DJV-TSC-CI-DRG-04-05
 TCY-DJV-TSC-CI-DRG-04-06

SCALE :
 1:1000
 HORIZONTAL : PCC20
 VERTICAL : AHDT1

DATUM :
 PTA ACCEPTANCE STAMP

DESIGNED DR :
 DRAWN GC
 CHECKED BS
 APPROVED FOR ISSUE PTA DIVISION / External Company

DATE :

REFERENCES

TCY-DJV-TSC-CI-DRG-04-00
 TCY-DJV-TSC-CI-DRG-04-01
 TCY-DJV-TSC-CI-DRG-04-02
 TCY-DJV-TSC-CI-DRG-04-03
 TCY-DJV-TSC-CI-DRG-04-04
 TCY-DJV-TSC-CI-DRG-04-05
 TCY-DJV-TSC-CI-DRG-04-06

SCALE :
 1:1000
 HORIZONTAL : PCC20
 VERTICAL : AHDT1

DATUM :
 PTA ACCEPTANCE STAMP

DESIGNED DR :
 DRAWN GC
 CHECKED BS
 APPROVED FOR ISSUE PTA DIVISION / External Company

DATE :

REFERENCES

TCY-DJV-TSC-CI-DRG-04-00
 TCY-DJV-TSC-CI-DRG-04-01
 TCY-DJV-TSC-CI-DRG-04-02
 TCY-DJV-TSC-CI-DRG-04-03
 TCY-DJV-TSC-CI-DRG-04-04
 TCY-DJV-TSC-CI-DRG-04-05
 TCY-DJV-TSC-CI-DRG-04-06

SCALE :
 1:1000
 HORIZONTAL : PCC20
 VERTICAL : AHDT1

DATUM :
 PTA ACCEPTANCE STAMP

DESIGNED DR :
 DRAWN GC
 CHECKED BS
 APPROVED FOR ISSUE PTA DIVISION / External Company

DATE :

REFERENCES

TCY-DJV-TSC-CI-DRG-04-00
 TCY-DJV-TSC-CI-DRG-04-01
 TCY-DJV-TSC-CI-DRG-04-02
 TCY-DJV-TSC-CI-DRG-04-03
 TCY-DJV-TSC-CI-DRG-04-04
 TCY-DJV-TSC-CI-DRG-04-05
 TCY-DJV-TSC-CI-DRG-04-06

SCALE :
 1:1000
 HORIZONTAL : PCC20
 VERTICAL : AHDT1

DATUM :
 PTA ACCEPTANCE STAMP

DESIGNED DR :
 DRAWN GC
 CHECKED BS
 APPROVED FOR ISSUE PTA DIVISION / External Company

DATE :

REFERENCES

TCY-DJV-TSC-CI-DRG-04-00
 TCY-DJV-TSC-CI-DRG-04-01
 TCY-DJV-TSC-CI-DRG-04-02
 TCY-DJV-TSC-CI-DRG-04-03
 TCY-DJV-TSC-CI-DRG-04-04
 TCY-DJV-TSC-CI-DRG-04-05
 TCY-DJV-TSC-CI-DRG-04-06

PLAN 1:1000

NEWEST ALLIANCE

TCY-DJV-TSC-CI-DRG-04-00

THORNIE COCKBURN LINK
 RANFORD RD STATION & PRECINCT
 DRAINAGE KEY PLAN

PTA Drawing No. REV : A

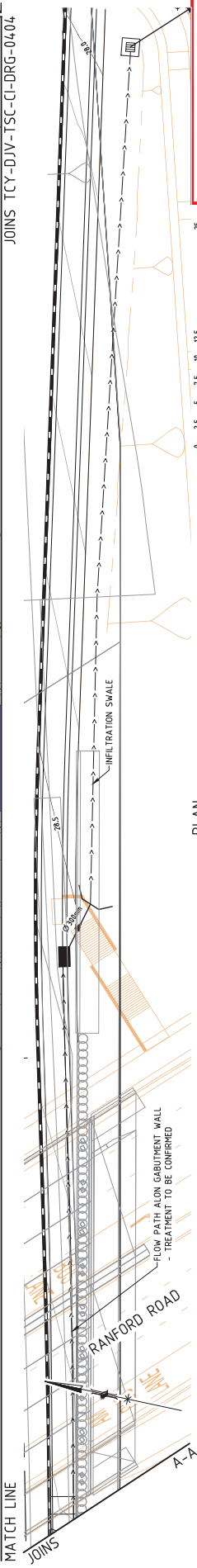
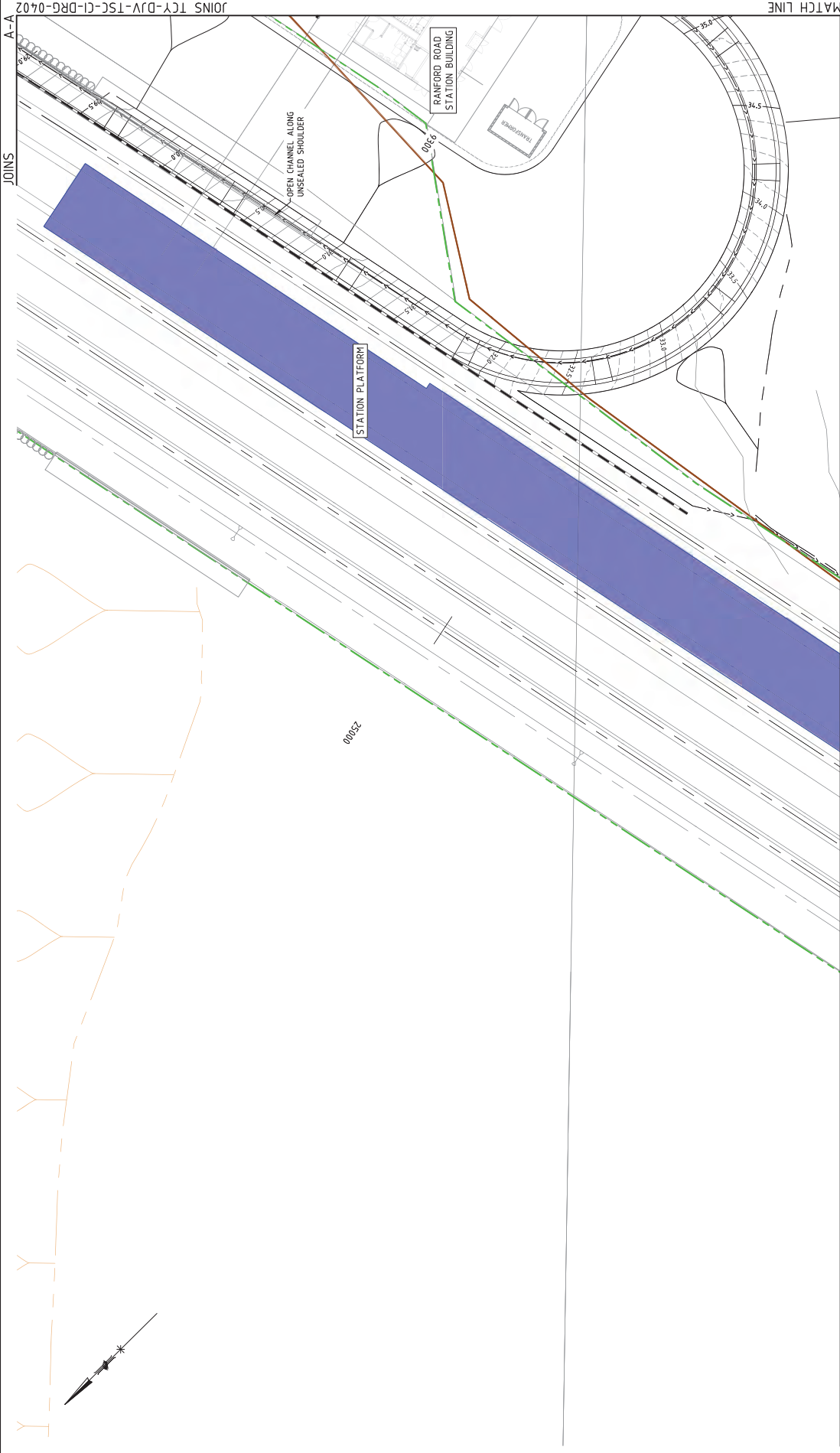
City of Western Australia
 Public Transport Authority

DETAILED DESIGN

NOTES

- ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
- ALL ELEVATIONS ARE IN MHD UNLESS NOTED OTHERWISE.
- STATION AND DRAINAGE STRUCTURE DETAILS AND DIMENSIONS SHALL BE AS SHOWN IN THIS STD DRG No 1 20331-884 TO 922 AND 20331-0451.
- ALL DRAINAGE PIPES SHALL BE CLASS 2 REINFORCED CONCRETE PIPES WITH SPIGOT AND RUBBER RING JOINTS UNLESS NOTED OTHERWISE. ALL DRAINAGE PIPES SHALL COMPLY WITH THE REQUIREMENTS ABOVE IDENTIFIED LABEL AREAS.
- EXISTING DRAINAGE PLANS ARE BASED ON DESKTOP STUDY DRG, INFRAPANS, DESIGN AND SURVEY DATA. ALL EXISTING DRAINAGE TO BE SURVEYED AND DOCUMENTED IN NEXT STAGE OF DESIGN.
- CONTRACTOR SHALL VERIFY THE EXISTING INFRASTRUCTURE IS IN GOOD CONDITION.
- CONTRACTOR SHALL CONFIRM CONDITION OF EXISTING DRAINAGE STRUCTURE TO REMAIN, PRIOR TO COMMENCING WORKS.
- DRAINAGE TO BE COORDINATED WITH PROPOSED UTILITIES, STREET LIGHTING, FENCING AND SERVICES IN VICINITY OF DRAINAGE WORKS SHALL BE VERIFIED PRIOR TO COMMENCEMENT.
- DETAILED UTILITIES DESIGN AND RELOCATIONS ARE DOCUMENTED IN PACKAGE 822.
- EXISTING DRAINAGE TO BE SURVEYED AND DOCUMENTED IN NEXT STAGE OF DESIGN.
- DRAINAGE TO CONSIDER GAS PROTECTION MEASURES IN ACCORDANCE WITH TCY-004-158-05-APP-0424.

- LEGEND**
- NEW RAIL RESERVE BOUNDARY
 - EPA BOUNDARY
 - RETAINING WALL
 - CONTOURS - MAJOR (0.5m)
 - CONTOURS - MINOR (0.1m)
 - DRAINAGE PIPE
 - SWALE
 - CUTOFF DRAIN
 - EXISTING DRAINAGE PIPE TO BE REVERSED
 - GRADED GULLY
 - MANHOLE
 - PRECAST CONCRETE HEADWALL
 - CATCHPIET
 - EXISTING SEP, MANHOLE AND GULLY PIT



DETAILED DESIGN

THORNIE COCKBURN LINK
 RAINFORD RD STATION & PRECINCT
 DRAINAGE PLAN
 SHEET 1 OF 6
 PTA Drawing No. A

DESIGNED	DR	GC
DRAWN	GC	BS
CHECKED	PCC20	APPROVED FOR ISSUE
APPROVED FOR ISSUE	AHD71	PTA Division / External Company
DATE		

SCALE : 1:250 (@ A1)
 DATUM :
 HORIZONTAL : PCC20
 VERTICAL : AHD71
 PTA ACCEPTANCE STAMP

REFERENCES

TCY-DJV-TSC-CI-DRG-0401	08/22/20	ISSUED FOR 15% DESIGN
TCY-DJV-TSC-CI-DRG-0401	07/25/20	ISSUED FOR REFERENCE DESIGN
TCY-DJV-TSC-CI-DRG-0401	07/25/20	ISSUED FOR REFERENCE DESIGN
TCY-DJV-TSC-CI-DRG-0401	07/25/20	ISSUED FOR REFERENCE DESIGN
TCY-DJV-TSC-CI-DRG-0401	07/25/20	ISSUED FOR REFERENCE DESIGN
TCY-DJV-TSC-CI-DRG-0401	07/25/20	ISSUED FOR REFERENCE DESIGN
TCY-DJV-TSC-CI-DRG-0401	07/25/20	ISSUED FOR REFERENCE DESIGN
TCY-DJV-TSC-CI-DRG-0401	07/25/20	ISSUED FOR REFERENCE DESIGN
TCY-DJV-TSC-CI-DRG-0401	07/25/20	ISSUED FOR REFERENCE DESIGN
TCY-DJV-TSC-CI-DRG-0401	07/25/20	ISSUED FOR REFERENCE DESIGN

PLAN 1:250

TCY-DJV-TSC-CI-DRG-0401

REV	DATE	AMENDMENT	DSN	DRN	CHKD	APP
A	08/22/20	ISSUED FOR 15% DESIGN	JB	GC	BS	PT
A1	07/25/20	ISSUED FOR REFERENCE DESIGN	DP	GC	BS	PT
DRG SIZE	0	10	20	30	40	50
A1						

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100mm

PTA Drawing No. A1

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NOTES

1. ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN AHD UNLESS NOTED OTHERWISE.
3. STANDARD DRAINAGE STRUCTURE DETAILS AND STANDARD DETAILS ARE TO BE REFERRED TO AS PER STD DGC No 1 2003/1-984, TO 922 AND 2003/1-045/1.
4. ALL PIPES SHALL BE CLASS 2.
5. RUBBER RING JOINTS UNLESS NOTED OTHERWISE. CONTRACTOR SHALL VERIFY REQUIREMENTS ABOVE IDENTIFIED LABEL AREAS.
6. EXISTING DRAINAGE PLANS ARE BASED ON DESIGNER STUDY DRAINAGE INVESTIGATIONS. DESIGN EXISTING DRAINAGE TO BE SURVEYED AND EXISTING DRAINAGE TO BE REMOVED AND REINSTALLED IN NEXT STAGE OF DESIGN.
7. INFRASTRUCTURE IS IN GOOD CONDITION.
8. CONTRACTOR SHALL VERIFY CONDITION OF EXISTING DRAINAGE AND STRUCTURE TO REMAIN, PRIOR TO COMMENCING WORKS.
9. DRAINAGE TO BE COORDINATED WITH PROPOSED UTILITIES, STREET LIGHTING FENCING AND SERVICES IN VICINITY OF DRAINAGE WORKS SHALL BE VERIFIED PRIOR TO COMMENCEMENT.
10. DETAILED UTILITIES DESIGN AND RELOCATIONS ARE DOCUMENTED IN PACKAGE 022.
11. ALL EXISTING DRAINAGE PIPES TO BE REMOVED AND REINSTALLED WITH PROPOSED LIGHT POLE LOCATIONS.
12. DRAINAGE TO CONSIDER GAS PROTECTION MEASURES IN ACCORDANCE WITH TCY-0401-150-00-00-APP-04024.



JOINS TCY-DJV-TSC-CI-DRG-0401

LEGEND

- NEW RAIL RESERVE BOUNDARY
- EPA BOUNDARY
- RETAINING WALL
- CONTOURS - MAJOR (0.5m)
- CONTOURS - MINOR (0.1m)
- DRAINAGE PIPE
- SCALE
- CUTOFF DRAIN
- EXISTING DRAINAGE PIPE TO BE REMOVED
- GRADED GUILLY
- MANHOLE
- PRECAST CONCRETE HEADWALL
- CATCHPIT
- EXISTING SEP, MANHOLE AND GUILLY PIT

REFERENCES

TCY-DJV-TSC-0401-150-00-00-00-APP-04024
 TCY-DJV-TSC-0401-150-00-00-00-APP-04024
 TCY-DJV-TSC-0401-150-00-00-00-APP-04024
 TCY-DJV-TSC-0401-150-00-00-00-APP-04024
 TCY-DJV-TSC-0401-150-00-00-00-APP-04024
 TCY-DJV-TSC-0401-150-00-00-00-APP-04024
 TCY-DJV-TSC-0401-150-00-00-00-APP-04024
 TCY-DJV-TSC-0401-150-00-00-00-APP-04024
 TCY-DJV-TSC-0401-150-00-00-00-APP-04024

SCALE: 1:250
 HORIZONTAL: PCCO
 VERTICAL: AHD71
 PTA ACCEPTANCE STAMP

DESIGNED DR GC
 DRAWN GC
 CHECKED BS
 APPROVED FOR ISSUE PTA DIVISION / External Company

DATE

PTA Drawing No. REV : A

DETAILED DESIGN

THORNIE COCKBURN LINK

RANFORD RD STATION & PRECINCT

DRAINAGE PLAN

SHEET 2 OF 6

TCY-DJV-TSC-CI-DRG-0402

PLAN 1:250

NEWEST ALLIANCE

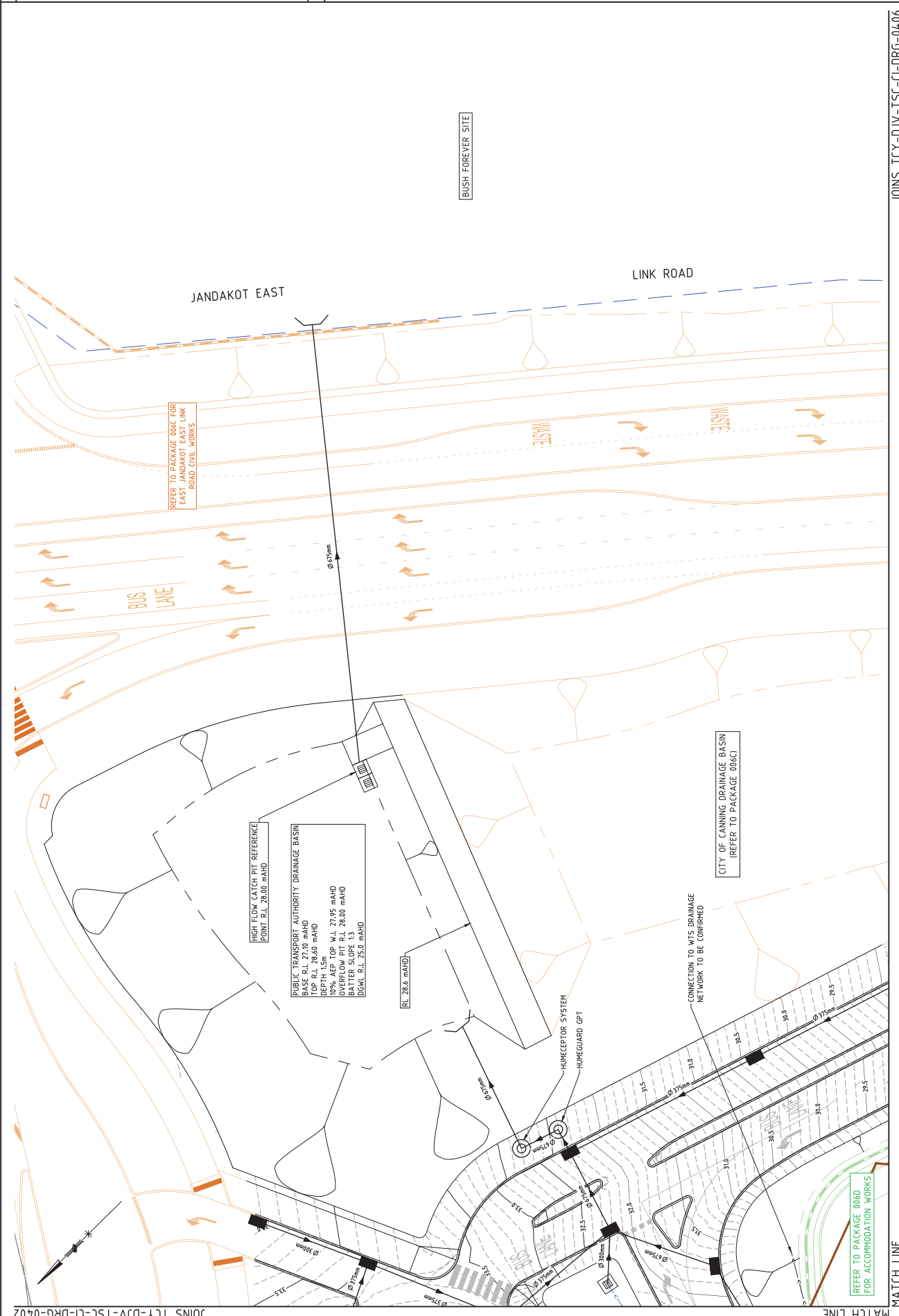
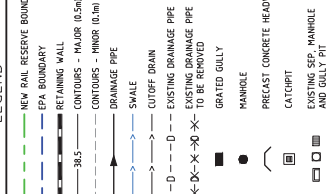
REV	DATE	ISSUED FOR	BY	CHKD	APP
A	03.07.20	ISSUED FOR 50% DESIGN	DP	GC	BS
AT	07.05.20	ISSUED FOR REFERENCE DESIGN	DP	GC	BS
		AMENDMENT	DSN	DRN	CHKD / APP

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NOTES

1. ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN MAHD UNLESS NOTED OTHERWISE.
3. STORM AND DRAINAGE STRUCTURE DETAILS AND SPECIFICATIONS SHALL BE AS PER THE REQUIREMENTS OF STD DRG No 3 200331-084 TO 122 AND 200331-0453.
4. ALL STRUCTURES SHALL BE CLASS 2 RIBBED CONCRETE PIPES WITH SPIGOT AND RUBBER RING JOINTS UNLESS NOTED OTHERWISE. STRUCTURES SHALL BE CONSTRUCTED TO MEET THE REQUIREMENTS ABOVE IDENTIFIED LABEL AREAS.
5. EXISTING DRAINAGE PLANS ARE BASED ON DESKTOP STUDY DRG'S. INTRINSIC DESIGN AND EXISTING DRAINAGE TO BE SURVEYED AND CONFIRMED IN NEXT STAGE OF DESIGN.
6. INFRASTRUCTURE IS IN GOOD CONDITION. CONTRACTOR SHALL CONFIRM CONDITION OF INFRASTRUCTURE PRIOR TO REMAIN, PRIOR TO COMMENCING WORKS.
7. DRAINAGE TO BE COORDINATED WITH PROPOSED UTILITIES, STREET LIGHTING, FENCING AND SERVICES IN VICINITY OF DRAINAGE WORKS SHALL BE VERIFIED PRIOR TO COMMENCEMENT.
8. DETAILED UTILITIES DESIGN AND RELOCATIONS ARE DOCUMENTED IN PACKAGE 022.
9. THE LOCATION OF ALL STRUCTURES FOR PROPOSED HIGH RISE LOCATIONS SHALL BE VERIFIED PRIOR TO COMMENCING WORKS.
10. DRAINAGE TO CONSIDER GAS PROTECTION MEASURES IN ACCORDANCE WITH TCY-0041-15K-02-APP-10242.

LEGEND



JOINS TCY-DJV-TSC-CI-DRG-0402

JOINS TCY-DJV-TSC-CI-DRG-0406

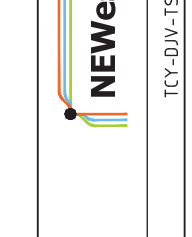
PLAN 1:250

DESIGNED	DR	GC
DRAWN	GC	
CHECKED	BS	
APPROVED FOR ISSUE		
DATE		

SCALE	(@ A1)	1:250
DATUM	HORIZONTAL:	PCC20
	VERTICAL:	AHD71
DATE		

REFERENCES

TCY-0041-15K-02-APP-10242
 TCY-0041-15K-02-APP-10243
 TCY-0041-15K-02-APP-10244
 TCY-0041-15K-02-APP-10245
 TCY-0041-15K-02-APP-10246
 TCY-0041-15K-02-APP-10247
 TCY-0041-15K-02-APP-10248
 TCY-0041-15K-02-APP-10249
 TCY-0041-15K-02-APP-10250



REV	DATE	ISSUED FOR	ISSUED BY	DESIGN	CHKD	APP
A	03.12.20	ISSUED FOR 15% DESIGN	JB	GC	BS	PT
A1	02.05.20	ISSUED FOR REFERENCE DESIGN	DP	GC	BS	PT
		AMENDMENT		DSN	DRN	CHKD
REV DATE	0	10	20	30	40	50
ORIG SIZE	A1					
DATE						

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CAD DRAWING: P:\TRAFFIC\TCY-DJV-TSC-CI-DRG-0403.dwg

Public Transport Authority
 Thornlie Cockburn Link
 RANFORD RD STATION & PRECINCT
 DRAINAGE PLAN
 SHEET 3 OF 6
 PTA Drawing No: A
 REV: A

SCALE: 1:250 (@ A1)

DATUM: HORIZONTAL: PCC20, VERTICAL: AHD71

SCALE: 0 2.5 5 7.5 10 12.5 15 17.5 20 22.5 25

SCALE: (M) 1:250 (A1): 1:500 (A3)

PTA ACCEPTANCE STAMP

DATE

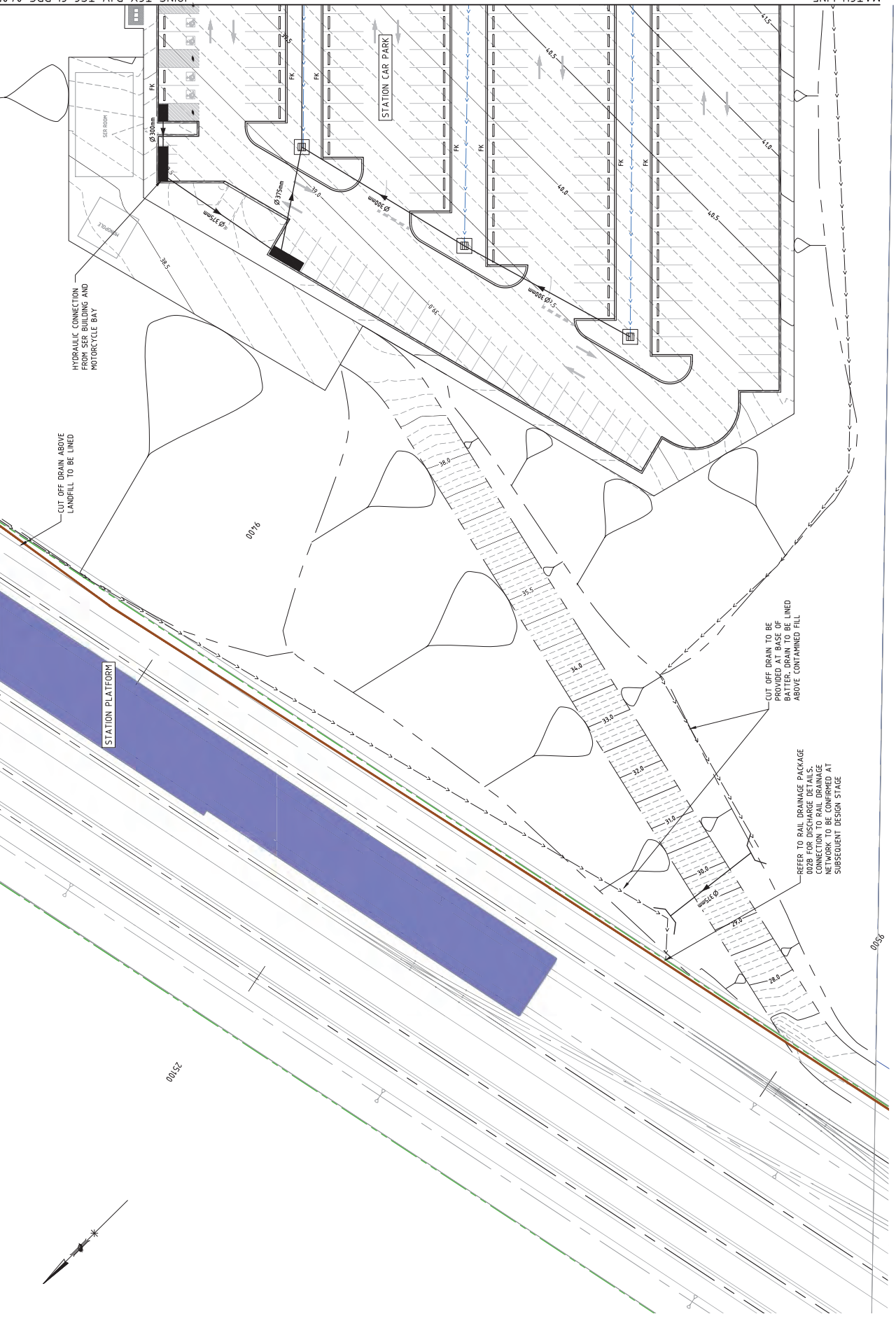
REFER TO PACKAGE 060 FOR ACCOMMODATION WORKS

CITY OF CANNING DRAINAGE BASIN (REFER TO PACKAGE 060C)

CONNECTION TO WTP DRAINAGE NETWORK TO BE CONFIRMED

REFER TO PACKAGE 060 FOR ACCOMMODATION WORKS

PTA ACCEPTANCE STAMP



PLAN
1:250

SCALE 1:250 (@ A1)
SCALE (M) 1:250 (A1) : 1:500 (A3)

DESIGNED DR GC
DRAWN GC
CHECKED BS
APPROVED FOR ISSUE PTA DIVISION / EXTERNAL COMPANY

DATE

PTA ACCEPTANCE STAMP

DATE

DATE

DATE

REV : A

SHEET 4 OF 6

RAINFORD RD STATION & PRECINCT
DRAINAGE PLAN

THORNIE COCKBURN LINK

Public Transport for Western Australia
Public Transport Authority

PTA Drawing No.

NEWEST ALLIANCE

TCY-DJV-TSC-CI-DRG-04-04

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- ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
- ALL ELEVATIONS ARE IN MHD UNLESS NOTED OTHERWISE.
- STATION AND DRAINAGE STRUCTURE DETAILS AND DIMENSIONS ARE TO BE REFERRED TO THE ST/CD/STD DRG No's 203931-884, TO 322 AND 203931-0451.
- REINFORCED CONCRETE PIPES SHALL BE CLASS 2 RUBBER RING JOINTS UNLESS NOTED OTHERWISE. ALL MANHOLES SHALL COMPLY WITH REQUIREMENTS ABOVE IDENTIFIED LABEL AREAS.
- EXISTING DRAINAGE PLANS ARE BASED ON DESIGNER'S STUDY DRG'S. INFRASTRUCTURE DESIGN AND DRAINAGE TO BE SURVEYED AND CONFIRMED IN NEXT STAGE OF DESIGN.
- INFRASTRUCTURE IS IN GOOD CONDITION.
- CONTRACTOR SHALL VERIFY CONDITION OF EXISTING INFRASTRUCTURE TO REMAIN, PRIOR TO COMMENCING WORKS.
- DRAINAGE TO BE COORDINATED WITH PROPOSED UTILITIES, STREET LIGHTING, FENCING AND SERVICES IN VICINITY OF DRAINAGE WORKS SHALL BE VERIFIED PRIOR TO COMMENCEMENT.
- DETAILED UTILITIES DESIGN AND RELOCATIONS ARE DOCUMENTED IN PACKAGE 822.
- ALL UTILITIES SHALL BE MARKED AND LOCATIONS FOR PROPOSED LIGHT POLE LOCATIONS.
- DRAINAGE TO CONSIDER GAS PROTECTION MEASURES IN ACCORDANCE WITH TCY-0601-154-GE-PP-1020.

- LEGEND**
- NEW RAIL RESERVE BOUNDARY
 - EPA BOUNDARY
 - RETAINING WALL
 - CONTOURS - MAJOR (0.5m)
 - CONTOURS - MINOR (0.1m)
 - DRAINAGE PIPE
 - SKALE
 - CUTOFF DRAIN
 - EXISTING DRAINAGE PIPE TO BE REVERSED
 - GRADED GULLY
 - MANHOLE
 - PRECAST CONCRETE HEADWALL
 - CATCHPIT
 - EXISTING SEP, MANHOLE AND GULLY PIT

STATION CAR PARK

CUT OFF DRAIN TO BE LINED ABOVE CONTAINED FILL

REFER TO RAIL DRAINAGE PACKAGE 0026 FOR DISCHARGE DETAILS. ALL DRAINAGE TO BE CONNECTED TO NETWORK TO BE COMPLETED AT SUBSEQUENT DESIGN STAGE

CUT OFF DRAIN ABOVE LANDFILL TO BE LINED

STATION PLATFORM

MOTORCYCLE BAY

HYDRAULIC CONNECTION TO STATION AND MOTORCYCLE BAY

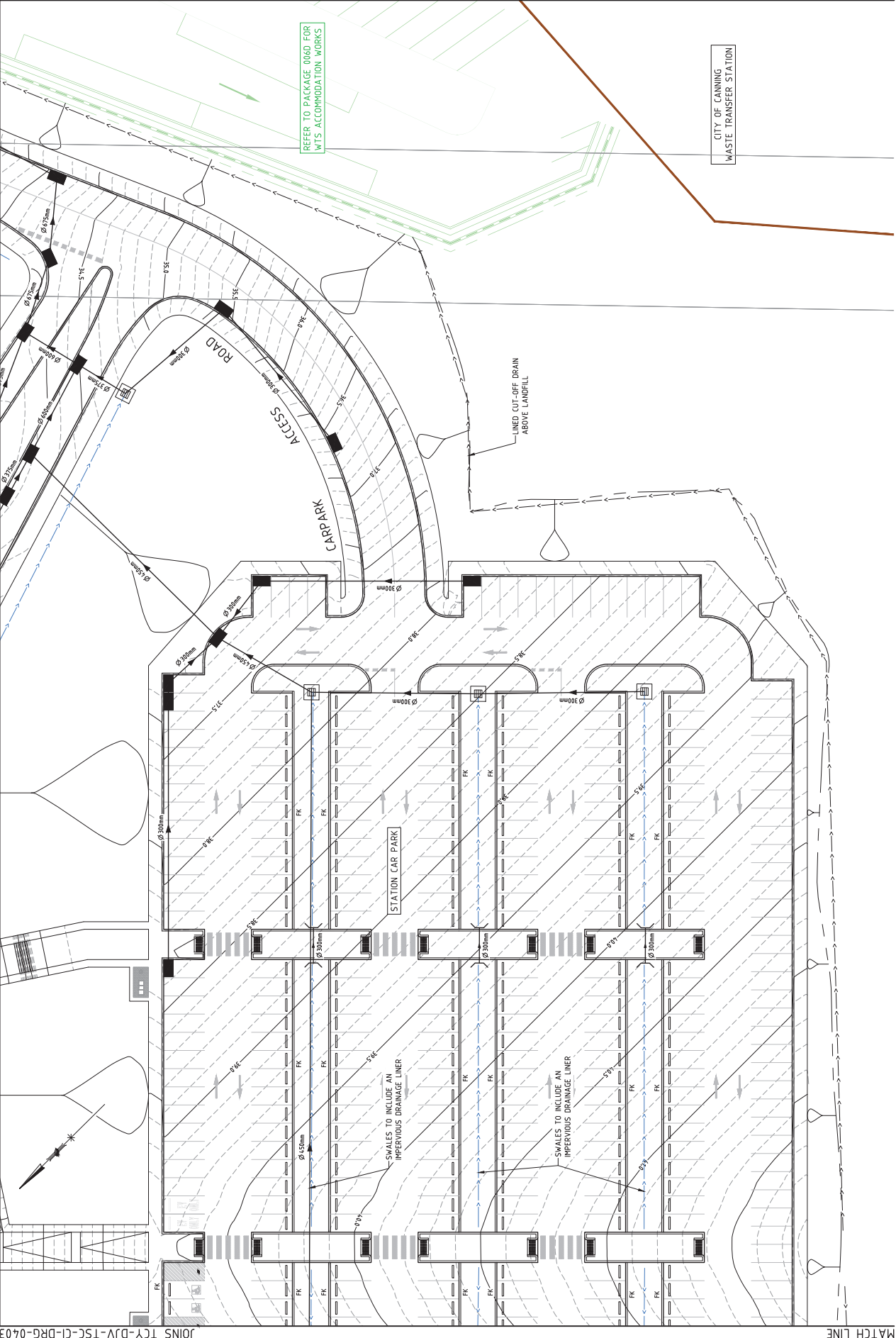
MATCH LINE

MATCH LINE

JOINS TCY-DJV-TSC-CI-DRG-04-03

JOINS TCY-DJV-TSC-CI-DRG-04-02

JOINS TCY-DJV-TSC-CI-DRG-04-03



MATCH LINE

MATCH LINE

NOTES

- ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
- ALL ELEVATIONS ARE IN MHD UNLESS NOTED OTHERWISE.
- STANDARD DRAINAGE STRUCTURE DETAILS AND SIZES ARE TO BE TAKEN FROM THE APPROPRIATE STD DRG No's 200391-084 TO 022 AND 20031-045.
- ALL SIZES SHALL BE CLAS 2.
- REINFORCED CONCRETE PIPES WITH SPIGOT AND RUBBER RING JOINTS UNLESS NOTED OTHERWISE. ALL REQUIREMENTS SHALL BE AS PER THE ABOVE IDENTIFIED LANDFILL AREAS.
- EXISTING DRAINAGE PLANS ARE BASED ON DESIGNER STUDY DRG'S, INFRAPANS, DESIGN AND SURVEY DATA. ALL EXISTING DRAINAGE TO BE SURVEYED AND CONFIRMED IN NEXT STAGE OF DESIGN.
- INFRASTRUCTURE IS IN GOOD CONDITION.
- CONTRACTOR SHALL CONFIRM CONDITION OF EXISTING DRAINAGE AND MAKE NECESSARY TO CORRECTING WORKS TO REMAIN, PRIOR TO COMMENCING WORKS.
- DRAINAGE TO BE CORRELATED WITH PROPOSED UTILITIES, STREET LIGHTING, FENCING AND SERVICES IN VICINITY OF DRAINAGE WORKS SHALL BE VERIFIED PRIOR TO COMMENCEMENT.
- DETAILED UTILITIES DESIGN AND RELOCATIONS ARE DOCUMENTED IN PACKAGE 022.
- EXISTING UTILITIES SHALL BE SURVEYED AND LIGHT POLE LOCATIONS FOR PROPOSED DRAINAGE TO BE CONSIDERED FOR PROTECTION MEASURES IN ACCORDANCE WITH TCY-066-154-02-05-00-04-00.

LEGEND

- NEW RAIL RESERVE BOUNDARY
- EPA BOUNDARY
- RETAINING WALL
- CONTOURS - MAJOR (0.5m)
- CONTOURS - MINOR (0.1m)
- DRAINAGE PIPE
- SWALE
- CUT-OFF DRAIN
- EXISTING DRAINAGE PIPE TO BE RETAINED
- GRAATED GULLY
- MANHOLE
- PRECAST CONCRETE HEADWALL
- CATCHPIET
- EXISTING SEP, MANHOLE AND GULLY PIT

NOTES

- ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
- ALL ELEVATIONS ARE IN MHD UNLESS NOTED OTHERWISE.
- STANDARD DRAINAGE STRUCTURE DETAILS AND SIZES ARE TO BE TAKEN FROM THE APPROPRIATE STD DRG No's 200391-084 TO 022 AND 20031-045.
- ALL SIZES SHALL BE CLAS 2.
- REINFORCED CONCRETE PIPES WITH SPIGOT AND RUBBER RING JOINTS UNLESS NOTED OTHERWISE. ALL REQUIREMENTS SHALL BE AS PER THE ABOVE IDENTIFIED LANDFILL AREAS.
- EXISTING DRAINAGE PLANS ARE BASED ON DESIGNER STUDY DRG'S, INFRAPANS, DESIGN AND SURVEY DATA. ALL EXISTING DRAINAGE TO BE SURVEYED AND CONFIRMED IN NEXT STAGE OF DESIGN.
- INFRASTRUCTURE IS IN GOOD CONDITION.
- CONTRACTOR SHALL CONFIRM CONDITION OF EXISTING DRAINAGE AND MAKE NECESSARY TO CORRECTING WORKS TO REMAIN, PRIOR TO COMMENCING WORKS.
- DRAINAGE TO BE CORRELATED WITH PROPOSED UTILITIES, STREET LIGHTING, FENCING AND SERVICES IN VICINITY OF DRAINAGE WORKS SHALL BE VERIFIED PRIOR TO COMMENCEMENT.
- DETAILED UTILITIES DESIGN AND RELOCATIONS ARE DOCUMENTED IN PACKAGE 022.
- EXISTING UTILITIES SHALL BE SURVEYED AND LIGHT POLE LOCATIONS FOR PROPOSED DRAINAGE TO BE CONSIDERED FOR PROTECTION MEASURES IN ACCORDANCE WITH TCY-066-154-02-05-00-04-00.

LEGEND

- NEW RAIL RESERVE BOUNDARY
- EPA BOUNDARY
- RETAINING WALL
- CONTOURS - MAJOR (0.5m)
- CONTOURS - MINOR (0.1m)
- DRAINAGE PIPE
- SWALE
- CUT-OFF DRAIN
- EXISTING DRAINAGE PIPE TO BE RETAINED
- GRAATED GULLY
- MANHOLE
- PRECAST CONCRETE HEADWALL
- CATCHPIET
- EXISTING SEP, MANHOLE AND GULLY PIT

DESIGNED	DR	GC
DRAWN	BS	GC
CHECKED	BS	GC
APPROVED FOR ISSUE	PTA	GC
DATE	PTA	GC

SCALE :	1:250
DATUM :	PCCG0
HORIZONTAL :	AHD71
VERTICAL :	PTA

REFERENCES	TCY-DJV-TSC-CI-DRG-04-01, 04-02, 04-03, 04-04, 04-05, 04-06, 04-07, 04-08, 04-09, 04-10, 04-11, 04-12, 04-13, 04-14, 04-15, 04-16, 04-17, 04-18, 04-19, 04-20, 04-21, 04-22, 04-23, 04-24, 04-25, 04-26, 04-27, 04-28, 04-29, 04-30, 04-31, 04-32, 04-33, 04-34, 04-35, 04-36, 04-37, 04-38, 04-39, 04-40, 04-41, 04-42, 04-43, 04-44, 04-45, 04-46, 04-47, 04-48, 04-49, 04-50, 04-51, 04-52, 04-53, 04-54, 04-55, 04-56, 04-57, 04-58, 04-59, 04-60, 04-61, 04-62, 04-63, 04-64, 04-65, 04-66, 04-67, 04-68, 04-69, 04-70, 04-71, 04-72, 04-73, 04-74, 04-75, 04-76, 04-77, 04-78, 04-79, 04-80, 04-81, 04-82, 04-83, 04-84, 04-85, 04-86, 04-87, 04-88, 04-89, 04-90, 04-91, 04-92, 04-93, 04-94, 04-95, 04-96, 04-97, 04-98, 04-99, 04-100
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REV	DATE	DESCRIPTION	BY	CHKD	APPD
A1	01/20/20	ISSUED FOR 15% DESIGN	DP	GC	BS
A2	02/20/20	ISSUED FOR REFERENCE DESIGN	DP	GC	BS
A3	03/20/20	AMENDMENT	DP	GC	BS

REV	DATE	DESCRIPTION	BY	CHKD	APPD
A1	01/20/20	ISSUED FOR 15% DESIGN	DP	GC	BS
A2	02/20/20	ISSUED FOR REFERENCE DESIGN	DP	GC	BS
A3	03/20/20	AMENDMENT	DP	GC	BS

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A3	03/20/20	AMENDMENT	DP	GC	BS

REV	DATE	DESCRIPTION	BY	CHKD	APPD
A1	01/20/20	ISSUED FOR 15% DESIGN	DP	GC	BS
A2	02/20/20	ISSUED FOR REFERENCE DESIGN	DP	GC	BS
A3	03/20/20	AMENDMENT	DP	GC	BS

PLAN 1:250



DESIGNED	DR	GC
DRAWN	BS	GC
CHECKED	BS	GC
APPROVED FOR ISSUE	PTA	GC
DATE	PTA	GC

TCY-DJV-TSC-CI-DRG-04-05

PTA Drawing No. REV : A

RAINFORD RD STATION & PRECINCT DRAINAGE PLAN SHEET 5 OF 6

THORNIE COCKBURN LINK

Public Transport for Western Australia
Public Transport Authority

DETAILED DESIGN

CITY OF CANNING
WASTE TRANSFER STATION

REFER TO PACKAGE 0040 FOR WTS ACCOMMODATION WORKS

STATION CAR PARK

ACCESS ROAD

CAR PARK

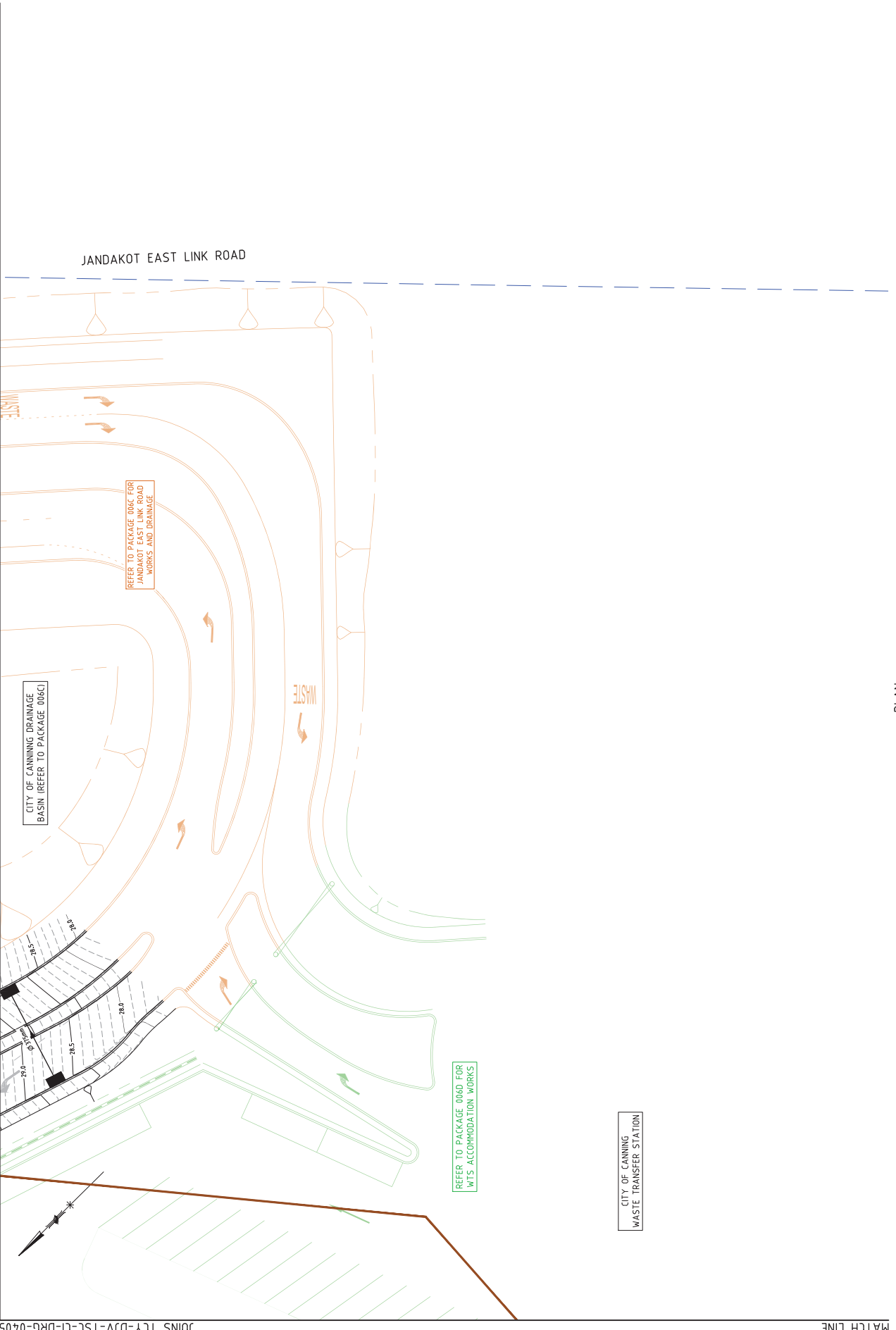
LINED CUT-OFF DRAIN ABOVE LANDFILL

NOTES

1. ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN MHD UNLESS NOTED OTHERWISE.
3. STAKE AND DRAINAGE STRUCTURE DETAILS AND 51D DRG No 1 2023/1-884 TO 122 AND 2023/1-045/1.
4. ALL DRAINAGE PIPES SHALL BE CLAS 2 RIBBED RING JOINTS UNLESS NOTED OTHERWISE. ABOVE IDENTIFIED LABEL AREAS.
5. EXISTING DRAINAGE PLANS ARE BASED ON DESKTOP STUDY DRG INFRAPANS, DESIGN EXISTING DRAINAGE TO BE SURVEYED AND CONFIRMED IN NEXT STAGE OF DESIGN.
6. INFRASTRUCTURE IS IN GOOD CONDITION. CONTRACTOR SHALL CONFIRM CONDITION OF INFRASTRUCTURE TO REMAIN, PRIOR TO COMMENCING WORKS.
7. DRAINAGE TO BE COORDINATED WITH PROPOSED UTILITIES, STREET LIGHTING, FENCING AND SERVICES IN VICINITY OF DRAINAGE WORKS SHALL BE VERIFIED PRIOR TO COMMENCEMENT.
8. DETAILED UTILITIES DESIGN AND RELOCATIONS ARE DOCUMENTED IN PACKAGE 822.
9. ALL UTILITIES SHALL BE MARKED FOR PROPOSED HIGH POLE LOCATIONS.
10. DRAINAGE TO CONSIDER GAS PROTECTION MEASURES IN ACCORDANCE WITH TCY-064-154-GE-RP-1024.

LEGEND

- NEW RAIL RESERVE BOUNDARY
- EPA BOUNDARY
- RETAINING WALL
- CONTOURS - MAJOR (0.5m)
- CONTOURS - MINOR (0.1m)
- DRAINAGE PIPE
- SWALE
- CUTOFF DRAIN
- EXISTING DRAINAGE PIPE TO BE RETAINED
- GRAATED GULLY
- MANHOLE
- PRECAST CONCRETE HEADWALL
- CATCHPIET
- EXISTING SEP, MANHOLE AND GULLY PIT



JANDAKOT EAST LINK ROAD

CITY OF CANNING DRAINAGE BASIN (REFER TO PACKAGE 006C)

REFER TO PACKAGE 006C FOR JANDAKOT EAST LINK ROAD WORKS AND DRAINAGE

REFER TO PACKAGE 006D FOR WTS ACCOMMODATION WORKS

CITY OF CANNING WASTE TRANSFER STATION

PLAN 1:250

SCALE: 1:250 (@ A1)
 SCALE (M) 1:250 (A1): 1:500 (A3)

REFERENCES

TCY-DJV-TSC-0401
TCY-DJV-TSC-0402
TCY-DJV-TSC-0403
TCY-DJV-TSC-0404
TCY-DJV-TSC-0405
TCY-DJV-TSC-0406
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TCY-DJV-TSC-0448
TCY-DJV-TSC-0449
TCY-DJV-TSC-0450



TCY-DJV-TSC-CI-DRG-0406

REV	DATE	ISSUED FOR	DESIGN	DESIGNER	CHECKER	DATE
A	03/23/20	ISSUED FOR 75% DESIGN	DP	GC	BS	PT
A1	07/25/20	ISSUED FOR REFERENCE DESIGN	DP	GC	BS	PT
ORIG SIZE	0	10	20	30	40	50
A1	AMENDMENT					

This document must not be copied without PTA's written permission and the contents thereof must not be reported to any third party for any unauthorized purpose.

PTA Drawing File Size: 100mb

CDR DRAWING PATHNAME: C:\Users\vegetation\Desktop\ESR\DRG\TCY-DJV-TSC-CI-DRG-0406.dwg

DETAILED DESIGN

Public Transport Authority
 Thornlie Cockburn Link

RAINFORD RD STATION & PRECINCT
 DRAINAGE PLAN
 SHEET 6 OF 6
 PTA Drawing No.

REV : A

APPENDIX O TCL CONSTRUCTION PROGRAM

TCL Construction Program Summary Statement for DA Planning Reports

DRAFT 2.0, 12 Aug 20

Construction Program and Management

Overview of Thornlie-Cockburn Link

The Thornlie-Cockburn Link (TCL) is the extension of Public Transport Authority (PTA's) passenger rail network. In conjunction with the state government's METRONET initiative, the 17.5 Kilometre distance spans from the entrance at Kenwick tunnel, through Thornlie station along the existing Arc freight rail corridor which accesses Kwinana Freeway via an existing portal and ending at Cockburn Central station. The existing Thornlie station will be significantly modified, and in addition, new stations will be constructed at Nicholson and Ranford Road whilst the existing platforms at Cockburn and Stadium Stations will undergo an extension.

TCL Stations are typically brownfield construction with challenges including:

- Ranford Road – contaminated waste to be removed below area of station entry building;
- Stadium and Ranford Road both contaminated landfill sites NWA will comply with requirements set out in the Site Management Plans to be prepared by PTA.
- Ranford Road, Nicholson Road and Thornlie Stations all have challenges with existing inground services and being adjacent to the existing Arc rail infrastructure;
- Thornlie Station is an existing live operational Station; and
- Stadium and Cockburn Stations are existing operational Stations with live rail lines flanking the works and situated adjacent to major road infrastructure.

Construction Management Planning

Each Station development site will be required to have a Construction Management Plan (CMP) endorsed prior to site mobilisation. The CMP will be supported by a range of other management plans (e.g. Traffic Management Plan), which will be prepared in consultation with the local government and other relevant agencies, based on the range of risks needing to be managed at each development site. Each CMP will provide the overarching framework and direction for all construction related works and activities on site during the station's construction phase. The CMP set outs the NEWest Alliance's construction methodology for this multi-disciplinary project and:

- complies with the PTA's Scope of Works and Technical Criteria (SWTC) and associated Project Specific Requirements (PSRs) and objectives;
- provides appropriate consideration to working in a constrained urban and existing rail environment;
- identifies, mitigates or effectively manages all interfaces and associated risks;
- ensures a respectful and considered approach to construction that minimises disruption to the existing PTA network, community and other stakeholders (e.g. road closures, working after hours, etc.);
- ensures delivery phase activities are undertaken in a clear, structured, methodical manner with 'no surprises';
- achieves desired functionality, safety, quality and program requirements in an environmentally and community sensitive manner; and

NEWest Alliance

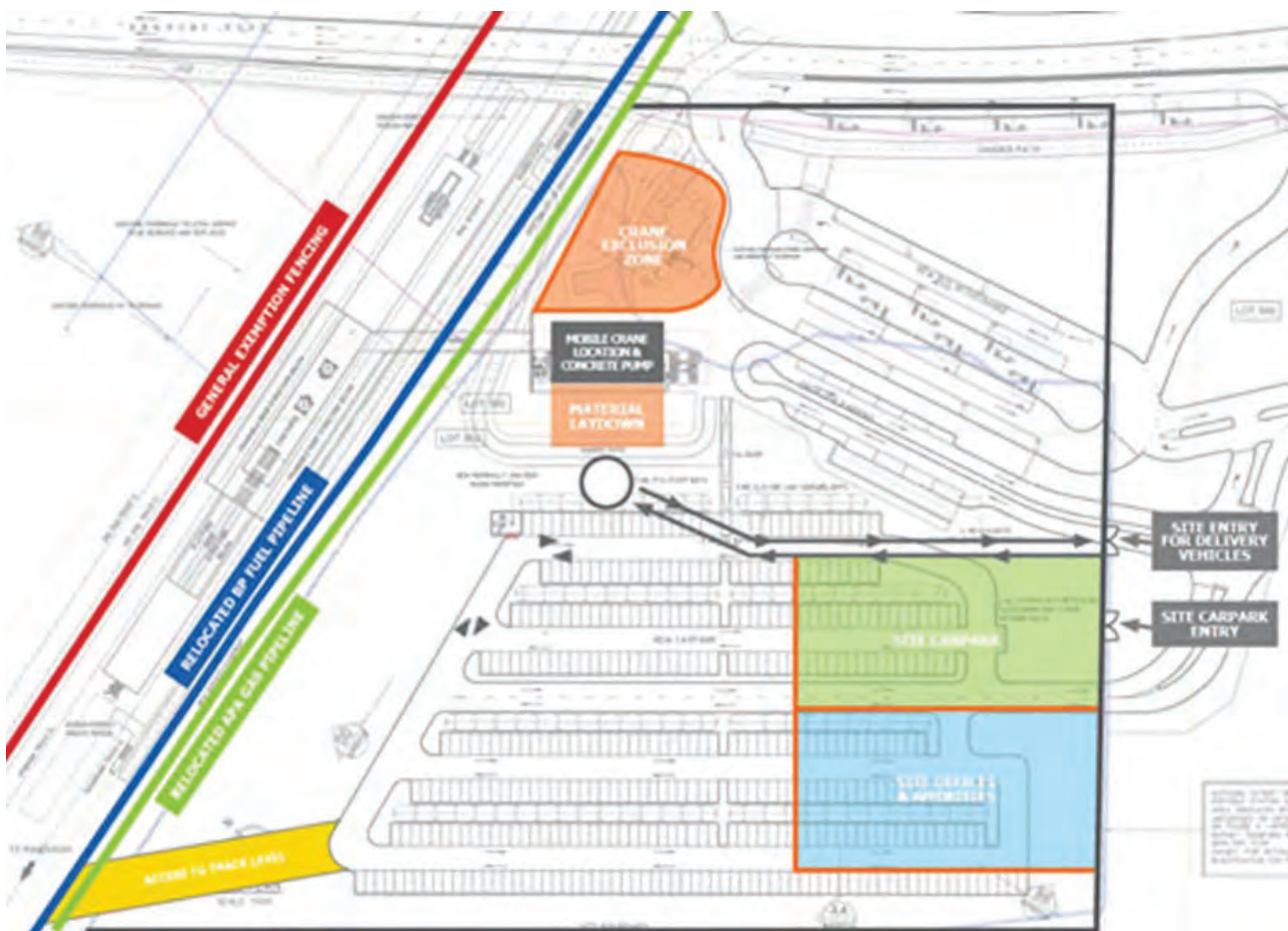
- details the management strategies and practices for construction at each site, excluding construction relating to rail and rail systems.

The preparation of each station development site CMP will be informed by the endorsed Construction Plan TCL document. This provides the overarching framework and direction for all construction-related activities and works during the delivery phase of the METRONET Stage 1 Initiatives: Thornlie-Cockburn Link.

Station Construction Site Layout

The sketch shown in Figure ? demonstrates the planned approach for site set up at new stations and notes locations for the set-up of mobile cranes and concrete pumps.

Figure ? : Typical construction site layout for a TCL station development project.



Timeframes for Construction and Day One Operations

The NEWest Alliance has taken a risk based approach on design to ensure accurate and efficient project delivery deadlines. The key construction milestones are as follows:

Table ? : TCL wide key construction milestones.

Milestone	Target Completion Date
Design Complete	5 August 2021

Milestone	Target Completion Date
Civil Works Complete	10 January 2023
Bridges Complete	17 August 2022
Stations Complete	30 November 2022
Final Commissioning and EIS	27 February 2023
Project Complete	26 May 2023
Operational Readiness and Drivers Training	26 May 2023

The TCL project has established three construction zones as shown in Figure ? below for effective and efficient management in terms of program, traffic staging and cost whilst minimising disruptions to stakeholders including train operations and the public.

Figure ?: Project Zone Layout between Beckenham and Cockburn Station.



The program of dates for commencing construction of each TCL station and their anticipated date for commencing the operation of a passenger train services is summarised in the table below.

Station Project	Date for Construction	Day One Operation Date
Perth Stadium	2 March 2021	Late 2022
Nicholson Road	29 November 2021	
Thornlie	8 December 2020	
Ranford Road	29 November 2021	
Cockburn Central	30 July 2021	

