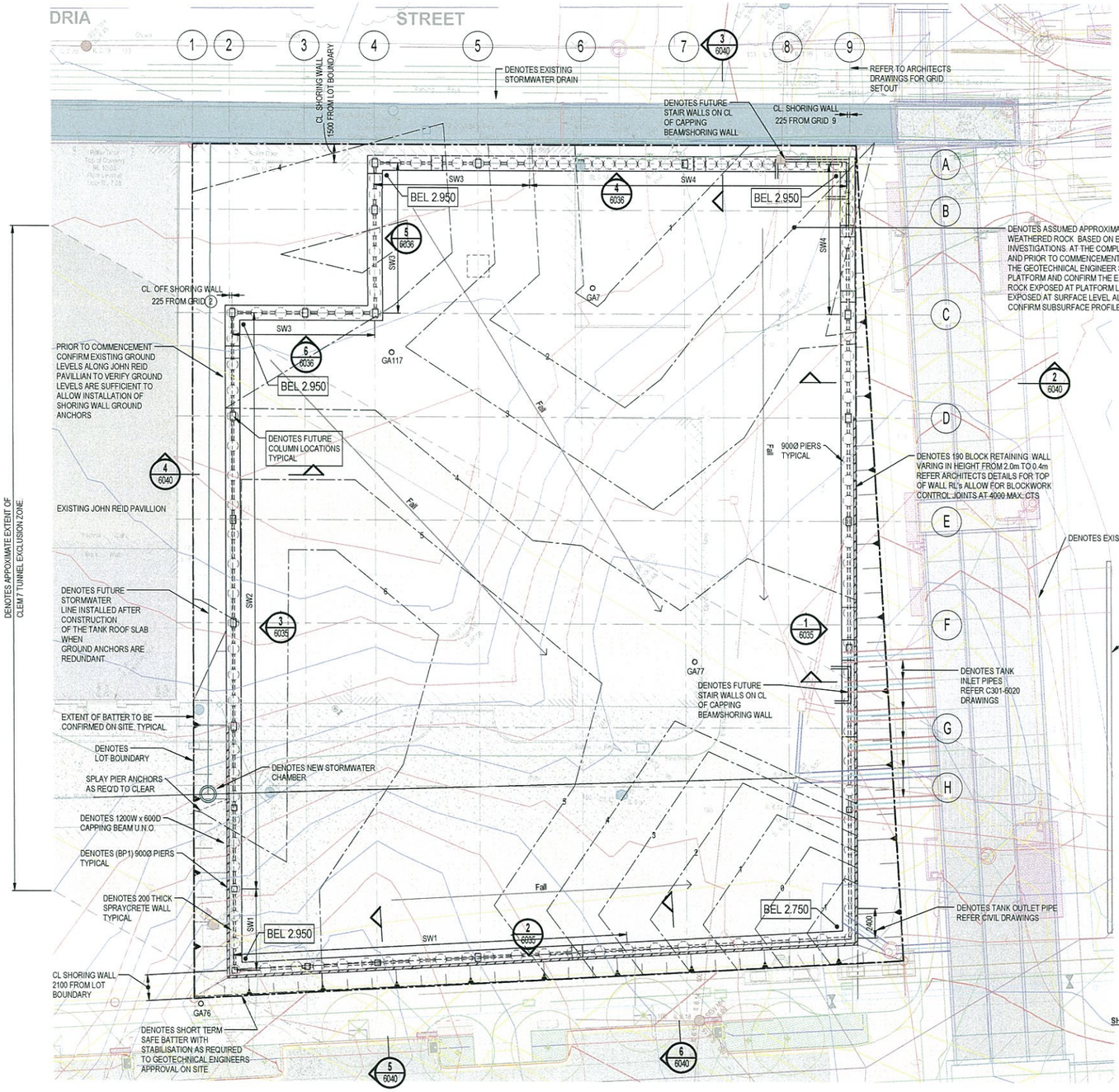


PLANS AND DOCUMENTS
referred to in the PDA APPROVAL
14 OCT 2015
MEDQ

NOTES

1. FOR ALL RELEVANT CONSTRUCTION NOTES REFER DRAWING 6005
2. **DESIGN LOADS**

AREA	SUPERIMPOSED DEAD LOAD	LIVE LOAD

3. **CONCRETE**

ALL WORKMANSHIP, MATERIALS & TESTING SHALL BE IN ACCORDANCE WITH AS 3600 EXCEPT AS VARIED BY THE CONTRACT DOCUMENTS AND SPECIFICATION.
ALL CONCRETE COMPONENTS SHALL BE NORMAL CLASS WITH A 28 DAY COMPRESSIVE STRENGTH OF 32MPa (ie. N32) EXCEPT WHERE VARIED BY THE TABLE BELOW:-

COMPONENT	STRENGTH
BORED PIERS	S40
CAPPING BEAM	N40
SPRAYCRETE	S32
DD	

N DENOTES NORMAL CLASS CONCRETE WITH THE FOLLOWING PROPERTIES U.N.O.
MAXIMUM AGGREGATE SIZE:- 20mm
SLUMP:- 80mm ±15
TESTING TYPE:- PROJECT ASSESSMENT
S DENOTES SPECIAL CLASS CONCRETE WITH 650 MICROSTRAIN MAXIMUM SHRINKAGE AS PER THE CONCRETE SPECIFICATION U.N.O.
S32(1) - DENOTES SPECIAL CLASS CONCRETE WITH 650 MICROSTRAIN MAXIMUM SHRINKAGE CONTROL AND HIGH EARLY STRENGTH TO SUIT POST TENSIONING.

EXCAVATION AND SHORING NOTES

1. REFER TO THE EARTHWORKS AND SHORING SPECIFICATION FOR ALL REQUIREMENTS.

2. PRIOR TO COMMENCEMENT OF EXCAVATION LOCATE ALL EXISTING SERVICES WITHIN AND ADJACENT TO THE SITE.

3. ALL EXCAVATION AND SHORING DETAILS SHOWN IN THE DRAWINGS ARE PROVISIONAL AND TO BE CONFIRMED, VERIFIED AND CERTIFIED ON SITE BY AN APPROVED GEOTECHNICAL ENGINEER ENGAGED BY THE EARTHWORKS AND SHORING SUB-CONTRACTOR.

4. WHERE SITE CONDITIONS REQUIRE CHANGES TO THE SHORING DESIGN SHOWN IN THE DOCUMENTS THE CONTRACTOR SHALL SUBMIT TO THE MANAGING CONTRACTOR THE GEOTECHNICAL ENGINEERS FORM 15 COVERING THE DESIGN CHANGES AND FORM 16 CERTIFICATION FOR THE ENTIRE WORKS.

5. THE ROCK LEVELS SHOWN ON PLAN ARE APPROXIMATE AND INDICATIVE ONLY AND ARE TO BE VERIFIED ON SITE BY THE GEOTECHNICAL ENGINEER. REFER TO THE GEOTECHNICAL INVESTIGATION FOR A DETAILED DESCRIPTION OF THE ANTICIPATED SUBSURFACE PROFILE AS WELL AS POTENTIAL CONTAMINATED SOIL REQUIREMENTS.

6. ENSURE THAT ALL INSTALLED SHORING WALLS AND ANCHORS DO NOT DAMAGE ADJACENT ABOVE AND BELOW GROUND STRUCTURES AND SERVICES.

7. VIBRATION AND MOVEMENT MONITORING MUST BE UNDERTAKEN FROM THE COMMENCEMENT OF WORKS IN ACCORDANCE WITH THE EARTHWORKS SPECIFICATION AND RESULTS REGULARLY REPORTED TO THE MANAGING CONTRACTOR.

8. THE CONTRACTOR SHALL PROVIDE BOTH PRE AND POST CONSTRUCTION CCTV SURVEY OF ALL PILE LINES AND DRAINAGE STRUCTURES ADJACENT TO THE SITE.

9. STAGED EXCAVATION SHALL BE UNDERTAKEN IN ACCORDANCE WITH THE DOCUMENTATION UNLESS OTHERWISE APPROVED BY THE GEOTECHNICAL ENGINEER.

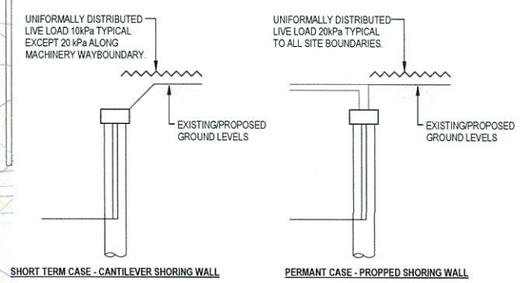
10. EARTH RAMPING INTO THE SITE FOR CONSTRUCTION ACCESS SHALL BE TO THE GEOTECHNICAL ENGINEERS APPROVAL ON SITE.

LEGEND

SW1 – DENOTES 900 DIAMETER ANCHORED PIERS AT 2400 MAXIMUM CENTRES.
SW2 – DENOTES 900 DIAMETER ANCHORED PIERS AT 2400 MAXIMUM CENTRES.
SW3 – DENOTES 900 DIAMETER CANTILEVER PIERS AT 1800 MAXIMUM CENTRES.
SW4 - DENOTES 900 DIAMETER CANTILEVER PIERS AT 900 CENTRES.
SW5 – DENOTES 900 DIAMETER CANTILEVER PIERS AT 1800 MAXIMUM CENTRES.
SW6 – DENOTES 900 DIAMETER ANCHORED PIERS AT 2400 MAXIMUM CENTRES.
SW7 – DENOTES 900 DIAMETER ANCHORED PIERS AT 2400 MAXIMUM CENTRES.

BP1# - DENOTES BORED PIER SETOUT IS GOVERNED BY THE FUTURE BUILDING STRUCTURE (COLUMNS AND WALLS) ABOVE GROUND FLOOR. REFER TO THE GROUND FLOOR PLAN ON DRAWING C-310-6070.

BEL – DENOTES BULK EXCAVATION LEVEL.



SHORT TERM CASE - CANTILEVER SHORING WALL

PERMANT CASE - PROPPED SHORING WALL

NOTES
1. FULL HEIGHT WATER PRESSURE ALLOWED FOR PROPPED WALL DESIGN.
2. MOBILE CRANE OUTRIGGER POINT LOADS TO BE LOCATED A MINIMUM DISTANCE OF 10m FROM CL OF SHORING WALL TYPICAL

BULK EARTHWORKS AND SHORING PLAN

1 : 200

NOTE : - REFER TO ARCHITECT'S DRAWINGS FOR SETOUT OF GRIDS

SHORING WALL DESIGN SURCHARGE LOADS

1 : 125

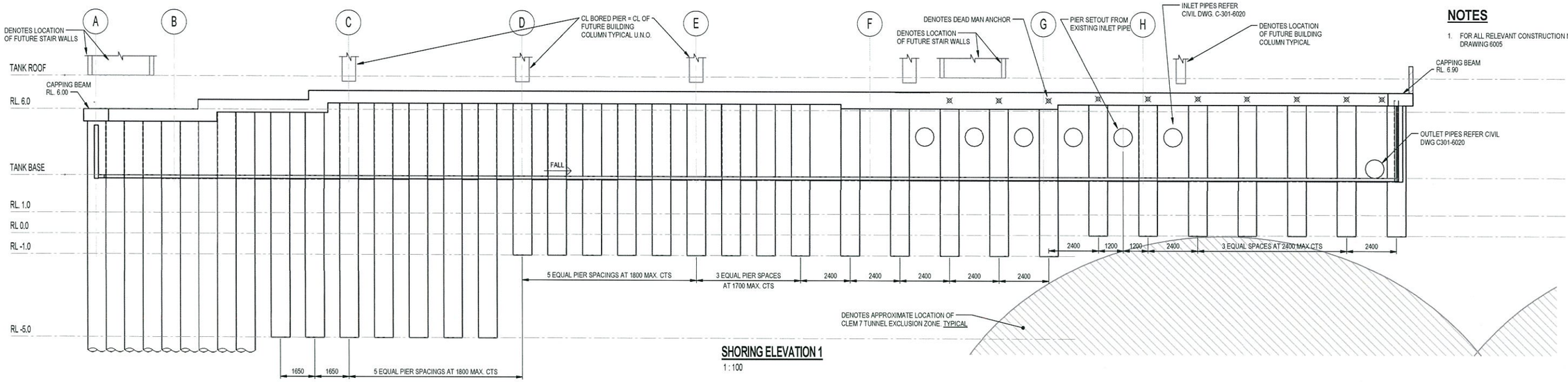
Rev	Date		Des.	Ver.	Appr.
C	31.07.2015	EDQ SUBMISSION			
B	13.07.2015	PRELIMINARY ISSUE			
A	08.07.2015	PRELIMINARY ISSUE			

Cardno (QLD) Pty. Ltd. ABN 57 051 074 992
LEVEL 11, 515 St Paul's Terrace
Fortitude Valley, QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722
Email: brisbane@cardno.com.au Web: www.cardno.com.au

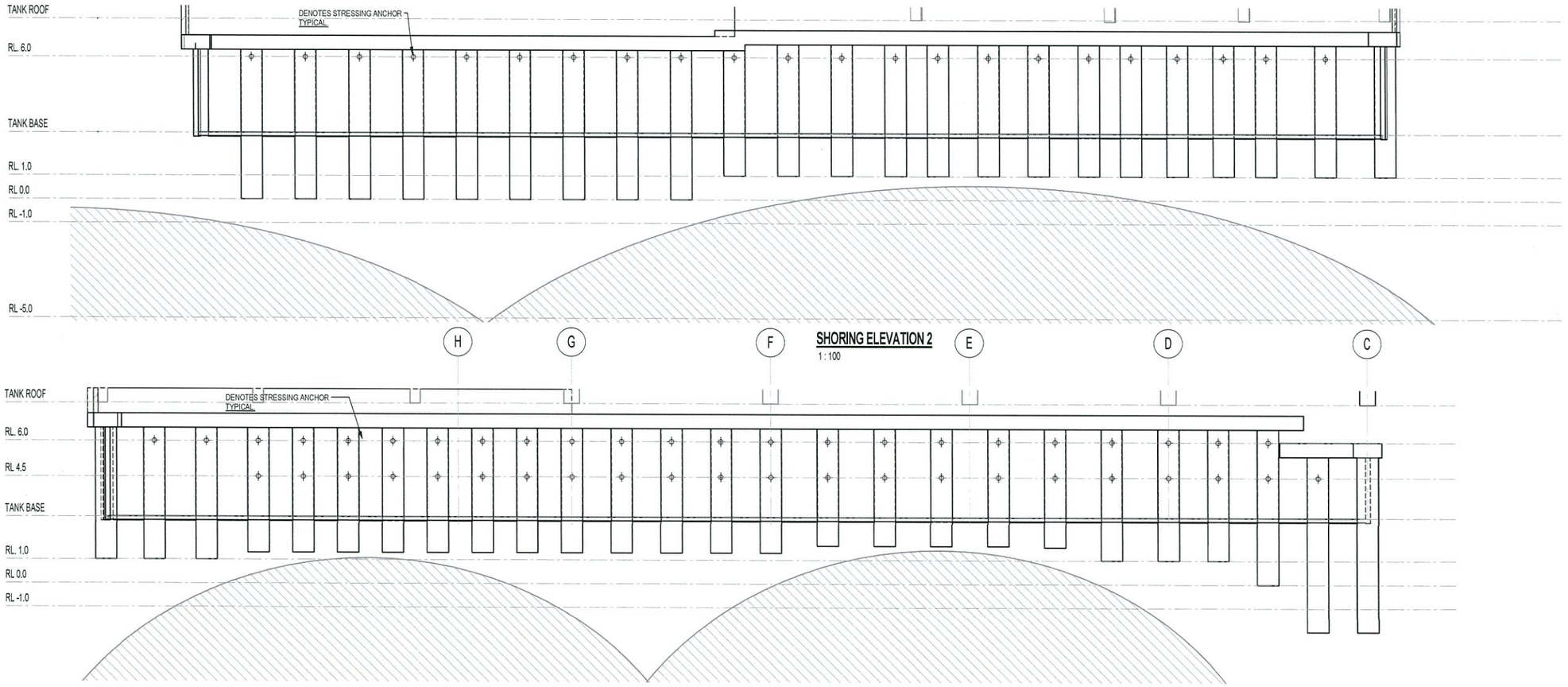
		Date
Drawn	KBA	
Checked	KBA	
Designed	DRV	
Verified	MVH	
Approved	MVH	

Client: RNA & LEND LEASE
Project: RNA SHOWGROUND REDEVELOPMENT STORMWATER DETENTION TANK
Title: BULK EARTHWORKS AND SHORING PLAN
Status: PRELIMILARY — NOT TO BE USED FOR CONSTRUCTION PURPOSES
Datum | Date | Scale | Size: A1
Drawing Number: 161163-050-DD-C-301-6030
Revision: C

DATE PLOTTED: 31/07/2015 8:33:17 AM



SHORING ELEVATION 1
1 : 100



SHORING ELEVATION 2
1 : 100

SHORING ELEVATION 3
1 : 100

NOTES

1. FOR ALL RELEVANT CONSTRUCTION NOTES REFER DRAWING 6005

PLANS AND DOCUMENTS referred to in the PDA APPROVAL
14 OCT 2015
MEDQ

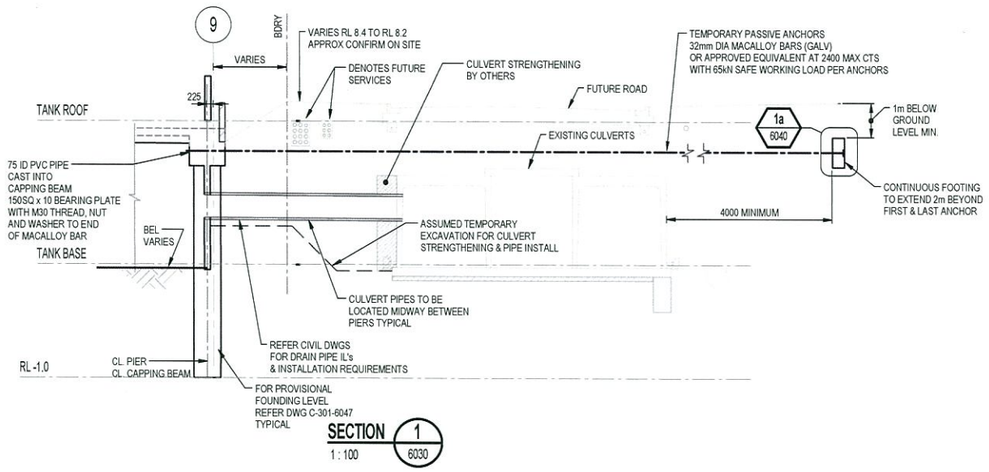
Rev	Date		Des.	Ver.	Appr.
B	31.07.2015	EDQ SUBMISSION			
A	13.07.2015	PRELIMINARY ISSUE			

Cardno (QLD) Pty. Ltd. ABN 57 051 074 992
LEVEL 11, 515 St Paul's Terrace
Fortitude Valley, QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722
Email: brisbane@cardno.com.au Web: www.cardno.com.au

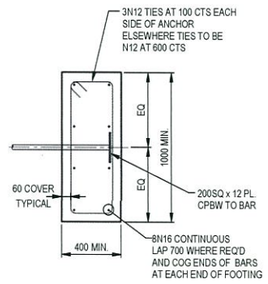
Drawn	KA	Date
Checked	KA	Date
Designed	DRV	Date
Verified	MVH	Date
Approved	MVH	Date

Client: RNA & LEND LEASE
Project: RNA SHOWGROUND REDEVELOPMENT STORMWATER DETENTION TANK
Title: SHORING ELEVATIONS - SHEET 1
Status: PRELIMINARY NOT TO BE USED FOR CONSTRUCTION PURPOSES
Datum | Date | Scale | Size: A1
Drawing Number: 161163-050-DD-C-301-6035
Revision: B

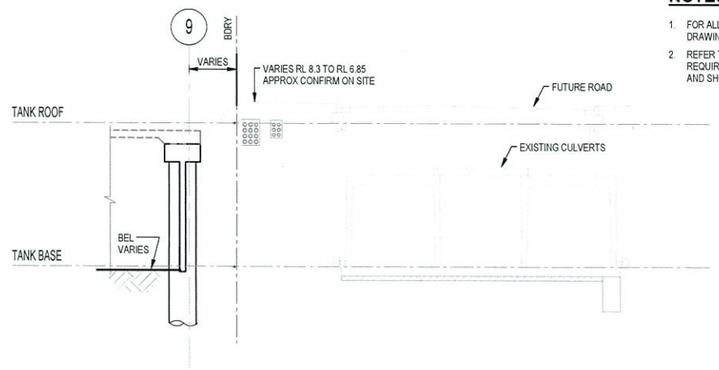
MODEL PATH: C:\Temp\Revit\k10697_ST_RVT_2015_kael.allen.rvt



SECTION 1 / 6030
1 : 100



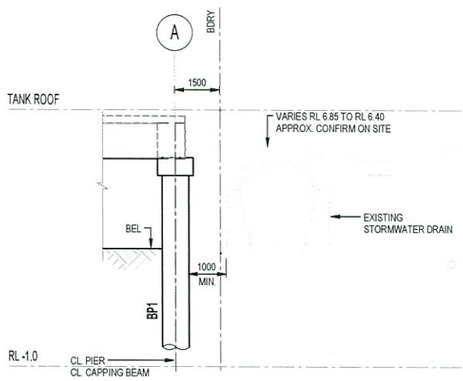
SECTION 1a / 6040
1 : 20



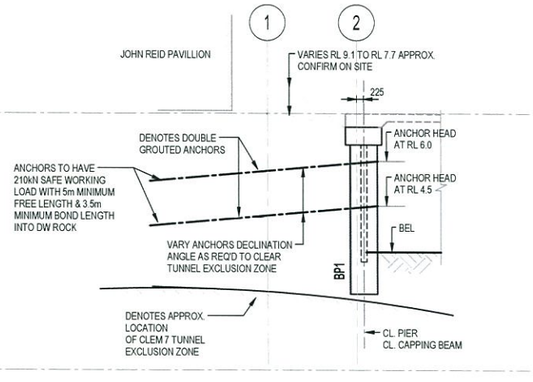
SECTION 2 / 6030
1 : 100

NOTES

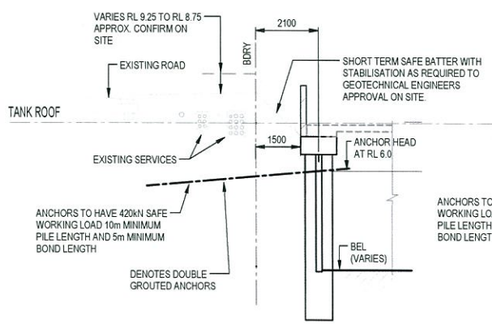
1. FOR ALL RELEVANT CONSTRUCTION NOTES REFER DRAWING 6005
2. REFER TO EARTHWORKS SPECIFICATION FOR ALL REQUIREMENTS IN RELATION TO EARTHWORKS AND SHORING.



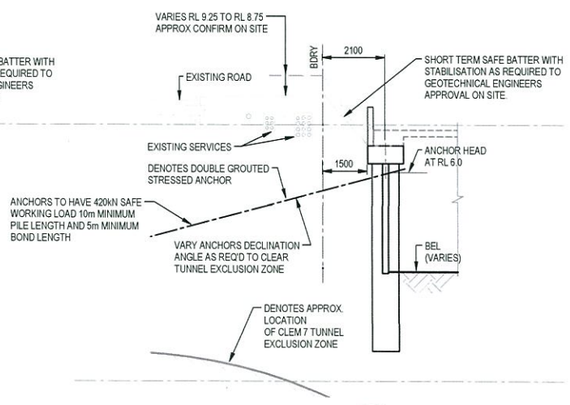
SECTION 3 / 6030
1 : 100



SECTION 4 / 6030
1 : 100



SECTION 5 / 6030
1 : 100



SECTION 6 / 6030
1 : 100

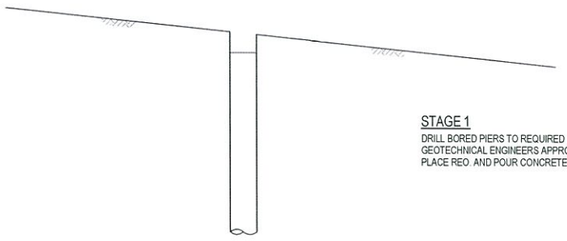
PLANS AND DOCUMENTS
referred to in the PDA APPROVAL
14 OCT 2015
MEDQ

Rev	Date		Des.	Ver.	Appr.
B	31.07.2015	EDQ SUBMISSION			
A	13.07.2015	PRELIMINARY ISSUE			

Cardno (QLD) Pty. Ltd. ABN 57 051 074 992
LEVEL 11, 515 St Paul's Terrace
Fortitude Valley, QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722
Email: brisbane@cardno.com.au Web: www.cardno.com.au

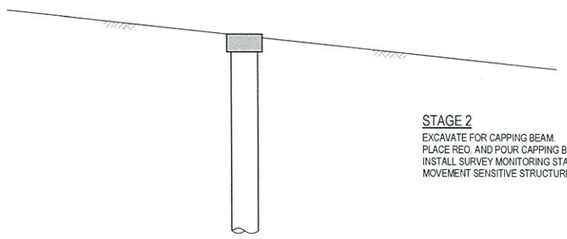
Drawn KA	Date	
Checked KA	Date	
Designed DRV	Date	
Verified MVH	Date	
Approved MVH	Date	

Client: RNA & LEND LEASE
Project: RNA SHOWGROUND REDEVELOPMENT
STORMWATER DETENTION TANK
Title: SHORING SECTION - SHEET 1
Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES
Datum | Date | Scale | Size: A1
Drawing Number: 161163-050-DD-C-301-6040
Revision: B



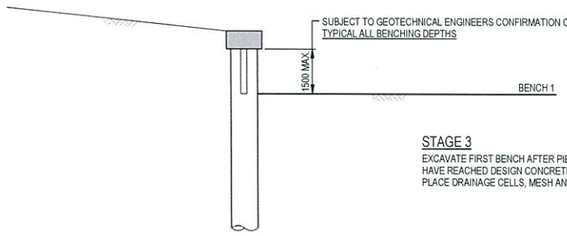
STAGE 1

DRILL BORED PIERS TO REQUIRED DEPTH TO GEOTECHNICAL ENGINEERS APPROVAL ON SITE. PLACE REO. AND POUR CONCRETE.



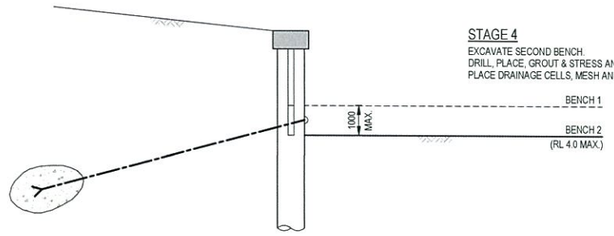
STAGE 2

EXCAVATE FOR CAPPING BEAM.
PLACE REO. AND POUR CAPPING BEAM ALONG TOP OF PIERS.
INSTALL SURVEY MONITORING STATIONS ON BEAM AND ANY MOVEMENT SENSITIVE STRUCTURES NEAR BY.



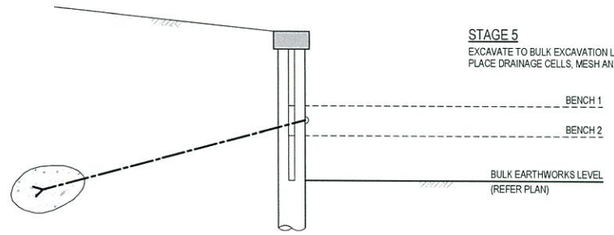
STAGE 3

EXCAVATE FIRST BENCH AFTER PIERS AND CAPPING BEAM HAVE REACHED DESIGN CONCRETE STRENGTH.
PLACE DRAINAGE CELLS, MESH AND SPRAYCRETE PANEL.



STAGE 4

EXCAVATE SECOND BENCH.
DRILL, PLACE, GROUT & STRESS ANCHORS.
PLACE DRAINAGE CELLS, MESH AND SPRAYCRETE PANEL.



STAGE 5

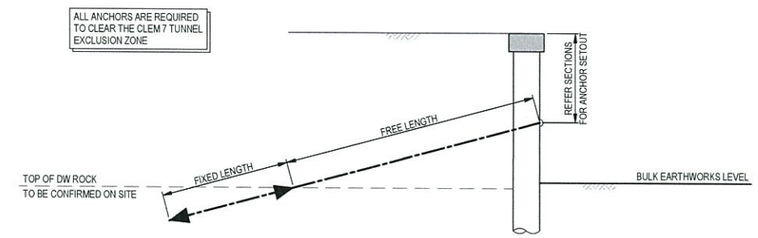
EXCAVATE TO BULK EXCAVATION LEVEL.
PLACE DRAINAGE CELLS, MESH AND SPRAYCRETE PANEL.

ANCHORED PIERED WALL EXCAVATION & INSTALLATION METHOD

NOTE: THE NUMBER OF BENCHING LEVELS SHOWN IS INDICATIVE ONLY AND IS TO BE CONFIRMED ON SITE BY THE GEOTECHNICAL ENGINEER

NOTES:

1. FOR ALL RELEVANT CONSTRUCTION NOTES REFER DRAWING C301-6005
2. REFER TO EARTHWORKS SPECIFICATION FOR ALL REQUIREMENTS IN RELATION TO EARTHWORKS AND SHORING.



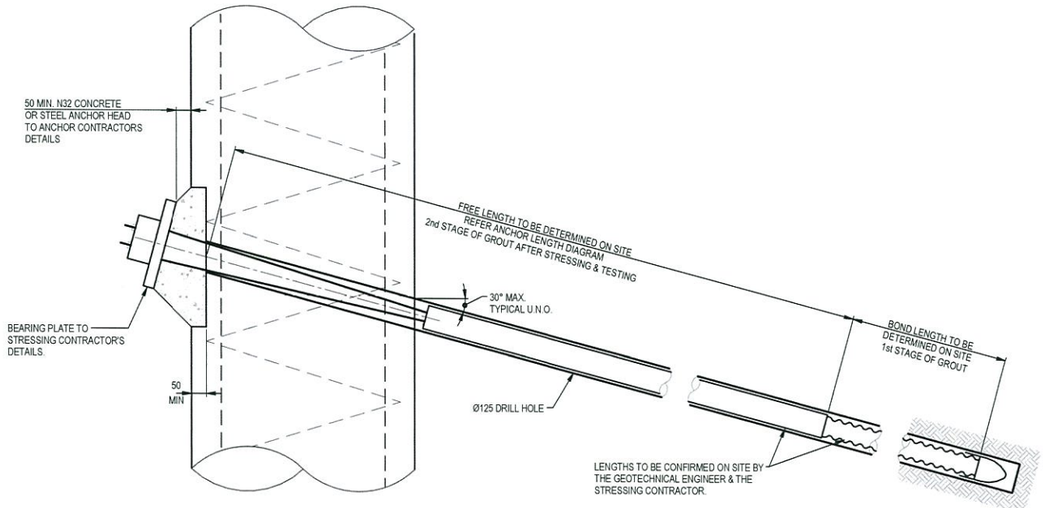
NOTES:

1. FIXED LENGTH = BOND LENGTH REQUIRED TO PROVIDE WORKING LOAD.
2. FOR TENDER PURPOSES, PROVISIONAL BOND LENGTHS ARE TO BE BASED ON THE FOLLOWING AND SUBJECT TO CONFIRMATION ON SITE BY THE GEOTECHNICAL ENGINEER:
   - ULTIMATE BOND STRENGTH OF 350kPa FOR XW ROCK.
   - TEMPORARY ROCK ANCHORS TO BE ANCHORED INTO ATLEAST XW ROCK.
3. FOR TENDER PURPOSES ALLOW FOR AN AVERAGE FREE LENGTH OF 10m TO BE CONFIRMED ON SITE TO THE GEOTECHNICAL ENGINEERS APPROVAL

TEMPORARY ANCHOR TESTING

1. REFER TO ANCHOR SPECIFICATION FOR ALL TESTING REQUIREMENTS.
2. A MINIMUM OF 10% ANCHORS ARE TO BE ACCEPTANCE TESTED.
3. ANCHORS TO BE TESTED ARE TO BE NOMINATED BY THE GEOTECHNICAL ENGINEER.
4. GROUT CUBE SAMPLES ARE TO BE TAKEN FOR TESTING ON EACH BATCH OF GROUT.
5. TEST RECORDS MUST BE SUPPLIED TO THE GEOTECHNICAL ENGINEER PROGRESSIVELY AND PRIOR TO COMMENCING EXCAVATION FOR THE NEXT PANEL STAGE.

TEMPORARY ROCK ANCHOR LENGTH DIAGRAM



NOTES

1. ALL ROCK ANCHORS TO BE 15.2mm SUPERGADE STRESS RELIEVED LOW RELAXATION STRANDS WITH THE NUMBER OF STRANDS AS NOTED IN THE DETAIL SECTIONS.
2. THE SAFE WORKING LOAD OF EACH STRAND IS TO BE 150 kN.
3. PROVIDE CENTRALISERS TO STRANDS AT 2.5m MAXIMUM CENTRES AND WITHIN 300mm OF ENDS TO ENSURE A MINIMUM GROUT COVER OF 25mm IS PROVIDED.
4. ALL ANCHORS ARE TO BE SECONDARY GROUTED AFTER STRESSING AND WILL NOT REQUIRE DESTRESSING.

TYPICAL TEMPORARY ROCK ANCHOR DETAIL

1 : 10

PLANS AND DOCUMENTS
referred to in the PDA APPROVAL
14 OCT 2015
MEDQ

Rev	Date		Des.	Ver.	Appr.
C	31.07.2015	EDQ SUBMISSION			
B	14.07.2015	PRELIMINARY ISSUE			
A	13.07.2015	PRELIMINARY ISSUE			

Cardno
Shaping the Future
Cardno (QLD) Pty. Ltd. ABN 57 051 074 992
LEVEL 11, 515 St Paul's Terrace
Fortitude Valley, QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722
Email: brisbane@cardno.com.au Web: www.cardno.com.au

		Date
Drawn	KA	
Checked	KA	
Designed	DRV	
Verified	MVH	
Approved	MVH	

Client: RNA & LEND LEASE

Project: RNA SHOWGROUND REDEVELOPMENT
STORMWATER DETENTION TANK

Title: SHORING DETAILS - SHEET 1

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

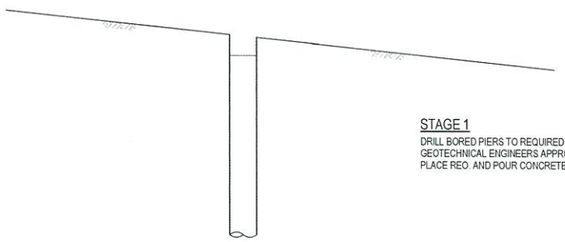
Datum	Date	Scale	Size
			A1

Drawing Number: 161163-050-DD-C-301-6045

Revision: C

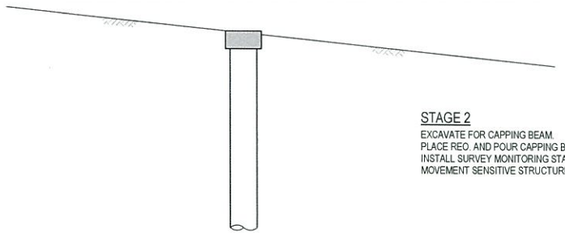
NOTES:

1. FOR ALL RELEVANT CONSTRUCTION NOTES REFER DRAWING C301-6005
2. REFER TO EARTHWORKS SPECIFICATION FOR ALL REQUIREMENTS IN RELATION TO EARTHWORKS AND SHORING.



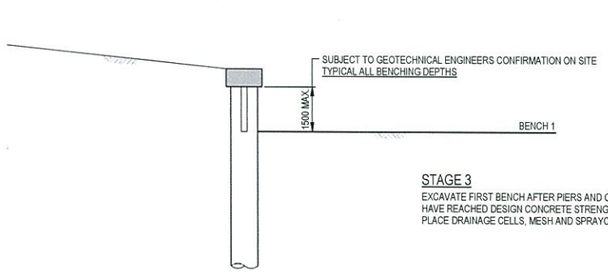
STAGE 1

DRILL BORED PIERS TO REQUIRED DEPTH TO GEOTECHNICAL ENGINEERS APPROVAL ON SITE.
PLACE REO. AND POUR CONCRETE.



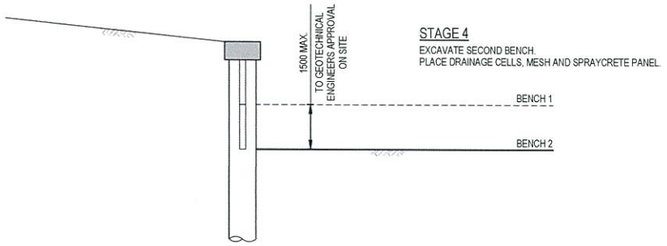
STAGE 2

EXCAVATE FOR CAPPING BEAM.
PLACE REO. AND POUR CAPPING BEAM ALONG TOP OF PIERS.
INSTALL SURVEY MONITORING STATIONS ON BEAM AND ANY MOVEMENT SENSITIVE STRUCTURES NEAR BY.



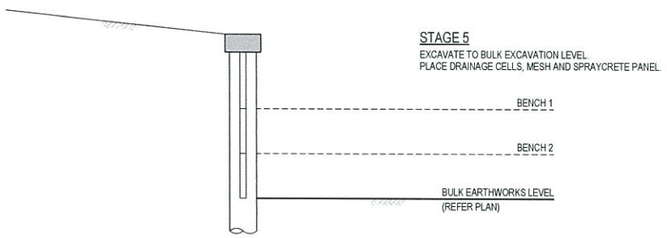
STAGE 3

EXCAVATE FIRST BENCH AFTER PIERS AND CAPPING BEAM
HAVE REACHED DESIGN CONCRETE STRENGTH
PLACE DRAINAGE CELLS, MESH AND SPRAYCRETE PANEL.



STAGE 4

EXCAVATE SECOND BENCH.
PLACE DRAINAGE CELLS, MESH AND SPRAYCRETE PANEL.



STAGE 5

EXCAVATE TO BULK EXCAVATION LEVEL.
PLACE DRAINAGE CELLS, MESH AND SPRAYCRETE PANEL.

CANTILEVER PIERED WALL EXCAVATION & INSTALLATION METHOD

NOTE: THE NUMBER OF BENCHING LEVELS SHOWN IS INDICATIVE ONLY AND IS TO BE CONFIRMED ON SITE BY THE GEOTECHNICAL ENGINEER

PLANS AND DOCUMENTS
referred to in the PDA APPROVAL
14 OCT 2015
MEDQ

Rev	Date		Des.	Ver.	Appr.
B	31.07.2015	EDQ SUBMISSION			
A	13.07.2015	PRELIMINARY ISSUE			

Cardno
Shaping the Future
Cardno (QLD) Pty. Ltd. ABN 57 051 074 992
LEVEL 11, 515 St Paul's Terrace
Fortitude Valley, QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722
Email: brisbane@cardno.com.au Web: www.cardno.com.au

		Date
Drawn	KA	
Checked	KA	
Designed	DRV	
Verified	MVH	
Approved	MVH	

Client: RNA & LEND LEASE

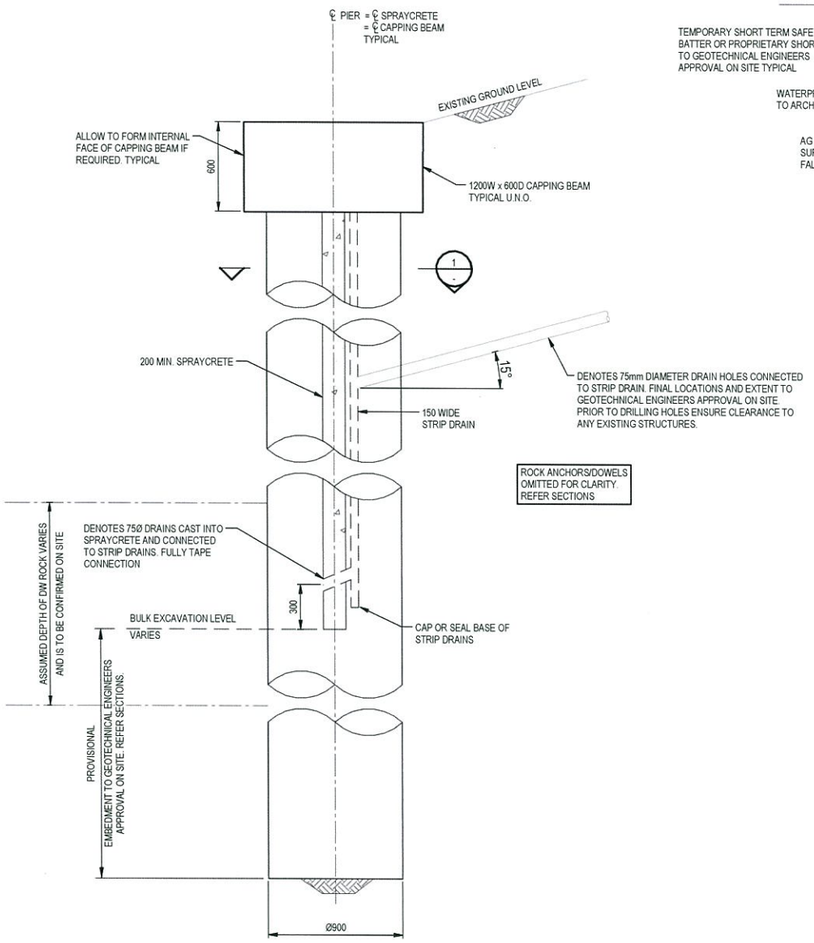
Project: RNA SHOWGROUND REDEVELOPMENT
STORMWATER DETENTION TANK

Title: SHORING DETAILS - SHEET 2

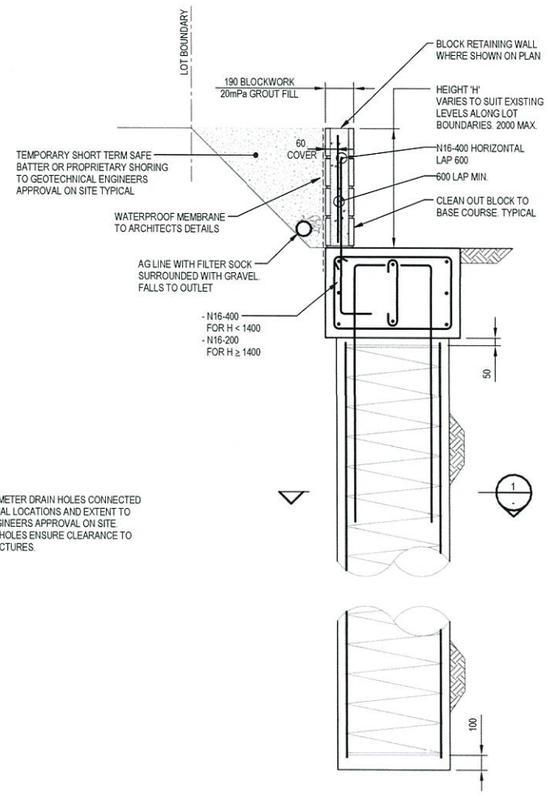
Status: **PRELIMINARY**
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
			A1

Drawing Number: 161163-050-DD-C-301-6046
Revision: B



TYPICAL SHORING WALL DETAILS
1 : 20



TYPICAL PIER/CAPPING BEAM DETAILS
1 : 20

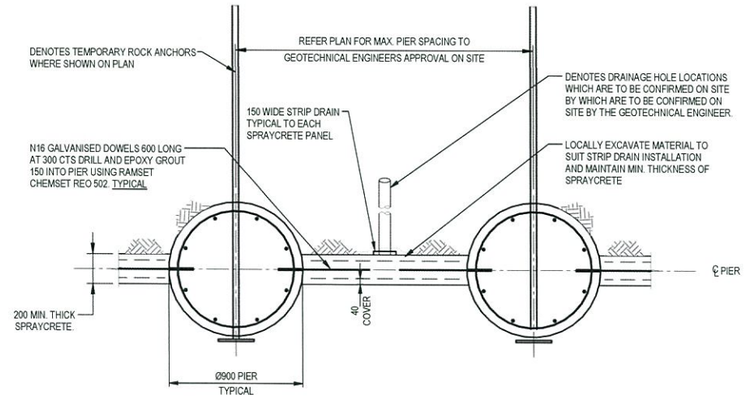
SHORING WALL DESIGN PARAMETERS AND ASSUMPTIONS					
SHORING WALL DESIGNATION	WALL TYPE	PIER SIZE AND SPACING	ASSUMED LEVEL OF DW ROCK	PROVISIONAL PIER FOUNDING DEPTH	PIER MAXIMUM FOUNDING RL
SW1	ANCHORED PIERS	900 DIA @2400CRS	VARIES FROM RL 4.0 TO RL 5.0	RL 1.0	RL 1.0
SW2	ANCHORED PIERS	900 DIA @2400CRS	VARIES FROM RL 4.0 TO RL 5.0	RL 1.6	RL 1.6
SW3	CANTILEVER PIERS	900 DIA @1800CRS	RL 3.0	RL -2.0	-
SW4	CANTILEVER PIERS	900 DIA @900CRS	RL -3.6	RL -9.0	-
SW5	CANTILEVER PIERS	900 DIA @1800CRS	RL 1.0	RL -5.0	-
SW6	ANCHORED PIERS	900 DIA @2400CRS	RL 1.0	RL 0.0	RL 0.0
SW7	ANCHORED PIERS	900 DIA @2400CRS	RL 1.0	RL 0.0	RL 0.0

NOTES

1. ASSUMED BORED PIER GEOTECHNICAL DESIGN PARAMATERS FOR DISTINCTLY WEATHERED ROCK AS FOLLOWS:
ULTIMATE SHAFT FRICTION – 900kPa
ULTIMATE END BEARING – 9000kPa
2. ALL DESIGN PARAMETERS, ASSUMPTIONS AND BORED PIER FOUNDING RL'S TO BE CONFIRMED ON SITE BY THE GEOTECHNICAL ENGINEER.
3. REFER TO DRAWING C-301-6030 FOR DESIGN SURCHARGE LOAD PARAMETERS.
4. THE PIER MAXIMUM FOUNDING RL IS TO ENSURE THE PIERS DO NOT ENCROACH WITHIN THE CLEM 7 TUNNEL EXCLUSION ZONE.

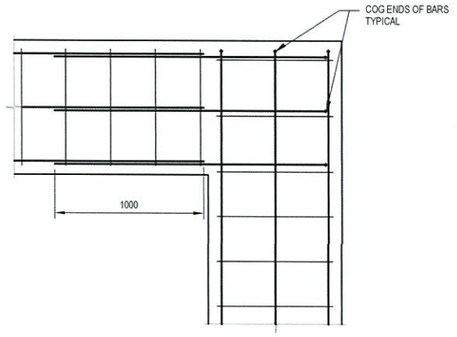
NOTES:

1. FOR ALL RELEVANT CONSTRUCTION NOTES REFER DRAWING C301-6005
2. REFER TO EARTHWORKS SPECIFICATION FOR ALL REQUIREMENTS IN RELATION TO EARTHWORKS AND SHORING.

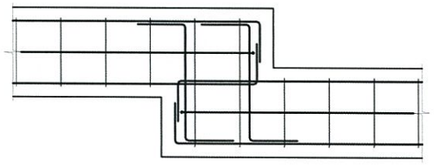


TYPICAL Ø900 PIER & SPRAYCRETE PANEL DETAILS

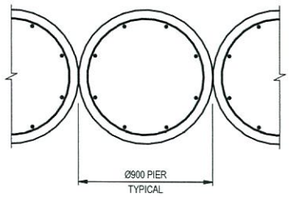
SECTION 1 / 1 : 20



TYPICAL SHORING WALL CAPPING BEAM CORNER DETAIL
1 : 20



TYPICAL SHORING WALL CAPPING BEAM STEP DETAIL
1 : 20



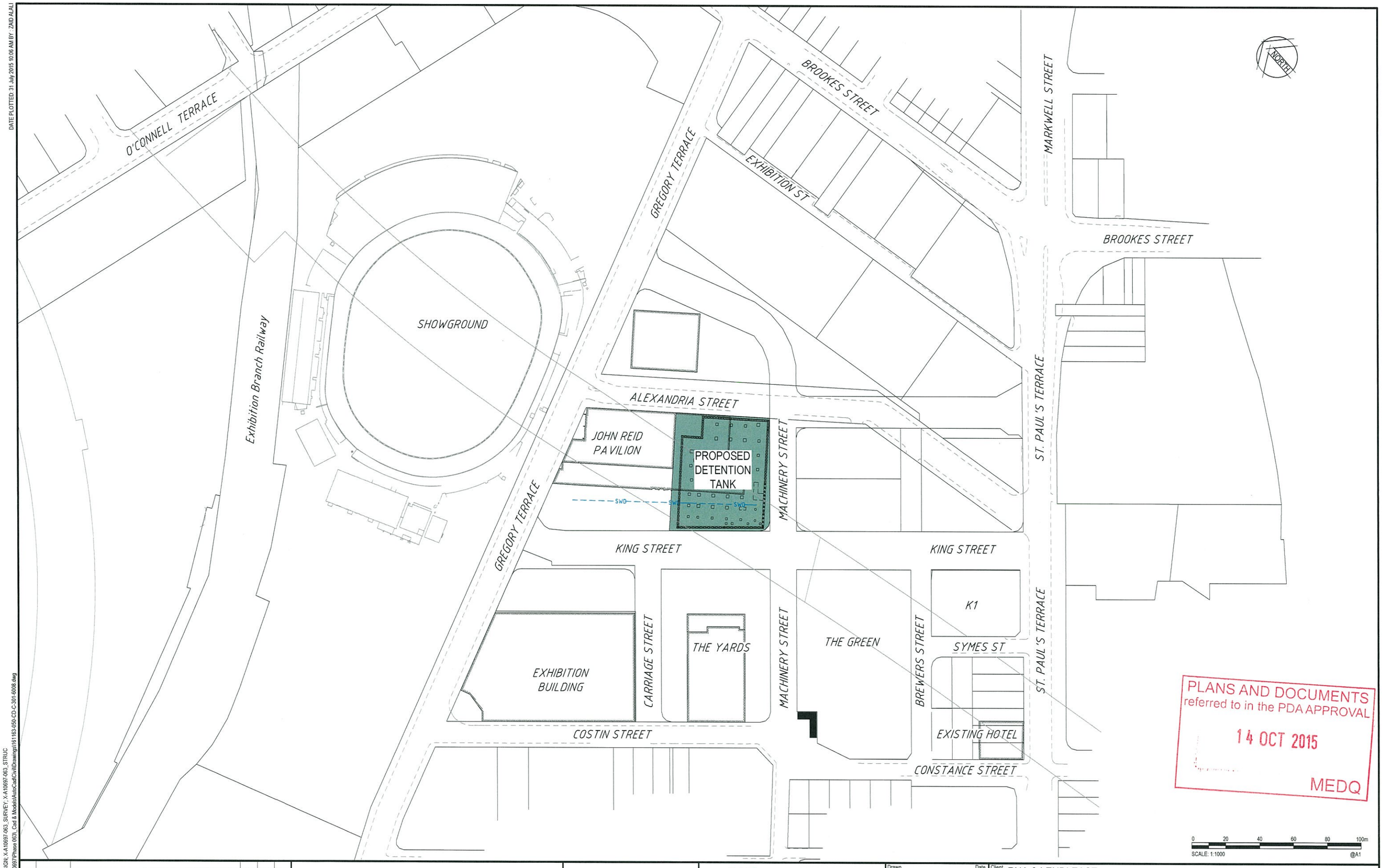
TYPICAL Ø900 CONTIGUOUS PIER DETAIL

Rev	Date		Des.	Ver.	Appr.
B	31.07.2015	EDQ SUBMISSION			
A	13.07.2015	PRELIMINARY ISSUE			

Cardno (QLD) Pty. Ltd. ABN 57 051 074 992
LEVEL 11, 515 St Paul's Terrace
Fortitude Valley, QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722
Email: brisbane@cardno.com.au Web: www.cardno.com.au

Drawn	KA	Date
Checked	KA	Date
Designed	DRV	Date
Verified	MVH	Date
Approved	MVH	Date

Client: RNA & LEND LEASE
Project: RNA SHOWGROUND REDEVELOPMENT STORMWATER DETENTION TANK
Title: SHORING DETAILS - SHEET 3
Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES
Datum | Date | Scale | Size: A1
Drawing Number: 161163-050-DD-C-301-6047
Revision: B



PLANS AND DOCUMENTS
referred to in the PDA APPROVAL
14 OCT 2015
MEDQ

Rev.	Date	Description	Des.	Verif.	Appd.
B	31/07/2015	EDQ SUBMISSION	ZA	DS	MH
A	24/07/2015	PRELIMINARY ISSUE	ZA	DS	MH

Cardno®
Shaping the Future
Cardno (Qld) Pty Ltd | ABN 57 051 074 992
Level 11, 515 St Paul's Terrace
Fortitude Valley, QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722
Web: www.cardno.com.au

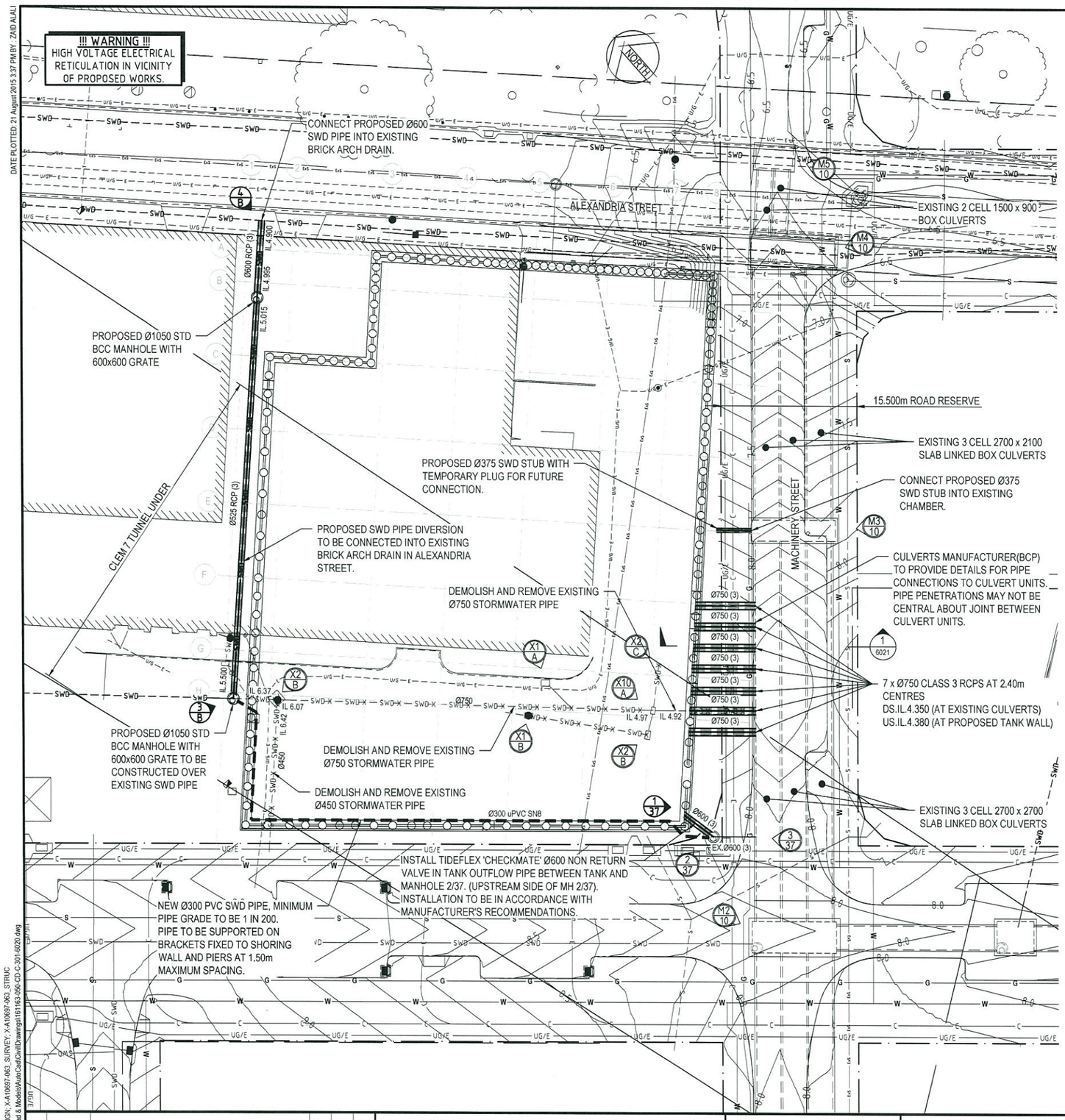
		Date
Drawn	ZA	JULY 2015
Checked	DS	JULY 2015
Designed	ZA	JULY 2015
Verified		Date
Approved		

Client: RNA & LENDLEASE
Project: RNA SHOWGROUND REDEVELOPMENT
STORMWATER DETENTION TANK
Title: SITE PLAN

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

DATUM		Scale	Size
A.H.D.		AS SHOWN	A1

Drawing Number: 161163-050-CD-C-301-6008
Revision: B



STORMWATER DRAINAGE NOTES

1. ALL INTERNAL STORMWATER DRAINAGE SHALL COMPLY WITH AS3500 1998 NATIONAL PLUMBING AND DRAINAGE CODE.
2. ALL EXTERNAL STORMWATER DRAINAGE SHALL COMPLY WITH QUDM AND BRISBANE CITY COUNCIL STANDARDS AND SPECIFICATIONS.
3. MAINTAIN AND PROTECT EXISTING SERVICES TO BE RETAINED.
4. STORMWATER STRUCTURES AND CONNECTIONS ARE TO BE LOCATED AS INDICATED ON THE PLAN. ADJUSTMENTS TO THE DESIGN LAYOUT WHERE REQUIRED TO SUIT ACTUAL AS-CONSTRUCTED GEOMETRY SHALL REQUIRE THE ENGINEERS APPROVAL.
5. INTERMEDIATE CONNECTIONS OF DOWNPIPES ON DRAINLINES
   A) LESS THAN 225Ø OBLIQUE JUNCTIONS;
   B) IF GREATER THAN 225 CONNECTIONS SHALL BE SLOPED SADDLE CONNECTIONS.
6. TRENCH EXCAVATIONS FOR DRAINAGE SHALL COMPLY WITH WORKPLACE HEALTH AND SAFETY REQUIREMENTS.
7. PIPES SHALL BE BEDDED IN ACCORDANCE WITH AS3725-H1.
8. ALL PIPES SHALL BE RUBBER RING JOINTED.
9. PIPES EQUAL TO OR SMALLER THAN 225Ø SHALL BE uPVC, RCP OR FRC. PIPES GREATER THAN 225Ø SHALL BE RCP OR FRC.
10. uPVC PIPES SHALL BE CLASS SN8 UNLESS NOTED OTHERWISE. RCP AND FRC PIPES SHALL BE CLASS 3 UNLESS NOTED OTHERWISE.
11. SPOIL MATERIAL GENERATED FROM TRENCH EXCAVATION IS TO BE DISPOSED OF OFF SITE.
12. ALL STORMWATER TRENCHES SHALL BE BACKFILLED IN ACCORDANCE WITH BCC STANDARDS AND SPECIFICATION.
13. COMPACTION TESTING IS TO BE CARRIED OUT AT THE SPECIFIED FREQUENCY BY A N.A.T.A. REGISTERED GEOTECHNICAL TESTING AUTHORITY AT THE CONTRACTORS COST. THE CONTRACTOR SHALL PROVIDE DETAILS OF ALL TESTING TO THE ENGINEER PROGRESSIVELY THROUGH THE WORKS AND NOTIFY THE ENGINEER OF ANY NON-CONFORMANCES. ALL NON CONFORMING WORK IS TO BE RECTIFIED AS DIRECTED BY THE ENGINEER.
14. ALL OBLIQUE BRANCHES TO BE 150Ø U.N.O. AND CONSIST OF OBLIQUE APPROVED BRANCH FITTINGS OR SADDLES AS APPROPRIATE AND WITH APPROVED SCREW ON OR CLIP ON CAPS.
15. ALL DRAINAGE STRUCTURES ARE TO HAVE HALF HEIGHT BENCHING.
16. ALL PIPE STUBS ARE TO BE FITTED WITH HARDBOARD PLANKS TO SEAL OFF END OF PIPE AND BACKFILLED.

STORMWATER DRAINAGE STRUCTURE NOTES:

1. ALL DIMENSIONS PROVIDED ON STRUCTURE DETAILS ARE IN MILLIMETRES.
2. SETOUT POINTS GIVEN FOR ALL STORMWATER STRUCTURES ARE TO THE CENTER OF THE CHAMBER. FINISHED SURFACE LEVELS NOMINATED FOR:
   2.1. ROADWAY GULLIES ARE AT THE ADJACENT LIP OF KERB;
   2.2. FIELD INLETS ARE AT THE TOP OF THE GRATE;
   2.3. ACCESS CHAMBERS ARE AT THE TOP OF THE ACCESS COVER.
3. THE USE OF PRECAST COMPONENTS SHALL BE IN ACCORDANCE WITH THE RELEVANT AUTHORITY'S APPROVED PRODUCT LIST AND SUBJECT TO THE ENGINEERS APPROVAL.
4. CONCRETE CLASS TO BE AS FOLLOWS:
   - UNREINFORCED STRUCTURES N25
   - REINFORCED STRUCTURES AS PER STRUCTURE DETAILS.
5. PROVIDE WEEPHOLES IN ACCORDANCE WITH DETAIL SHOWN, IN THE UPSTREAM FACE OF ALL DRAINAGE STRUCTURES TO DRAIN UPSTREAM BEDDING IN TRENCHES.
6. ALL PIPE ENDS ARE TO BE RENDERED FLUSH WITH THE INSIDE FACE OF DRAINAGE STRUCTURES WITH A MINIMUM 50mm COVER TO STEEL REINFORCEMENT.
7. JOINTS BETWEEN PRECAST UNITS ARE TO BE COMPLETELY SEALED USING A METHOD APPROVED BY THE ENGINEER.
8. BASES OF ALL DRAINAGE STRUCTURES ARE TO BE BENCHED SMOOTHLY UP TO HALF HEIGHT OF PIPES (SPRING LINE).
9. STEP IRONS/ACCESS LADDERS ARE TO BE PROVIDED TO ALL ACCESS CHAMBERS DEEPER THAN 850mm IN ACCORDANCE WITH BRISBANE CITY COUNCIL STANDARDS. STEP IRONS SHALL BE INSTALLED IN ACCORDANCE WITH AS1657.
10. COVERS AND GRATES TO BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

CONTRACTOR TO CONFIRM LOCATION OF EXISTING SERVICES PRIOR TO COMMENCEMENT OF WORKS

WARNING!
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES HAVE BEEN INTERPOLATED FROM GIS DATA OR KNOWN POSITIONS OF VALVES, MANHOLES ETC. OR INFORMATION SUPPLIED BY SERVICE AUTHORITIES. NO RESPONSIBILITY IS TAKEN FOR THE ACCURACY OF THE INTERPOLATED INFORMATION SUPPLIED. ENSURE ALL SERVICES ARE ACCURATELY LOCATED PRIOR TO COMMENCEMENT OF WORK.

COORDINATION OF ALL SERVICES IS TO BE CARRIED OUT BY CONTRACTOR PRIOR TO CONSTRUCTION.
CONTRACTOR TO UNDERTAKE ALL NECESSARY SERVICE RELOCATIONS / DIVERSIONS REQUIRED TO CONSTRUCT THE PROPOSED WORKS

PLANS AND DOCUMENTS referred to in the PDA APPROVAL
14 OCT 2015
MEDQ

0 5 10 15 20 25m
SCALE: 1:250 @A1

Rev.	Date	Description	Des.	Verif.	Appd.
C	21/08/2015	EDQ SUBMISSION	ZA	DS	MH
B	31/07/2015	EDQ SUBMISSION	ZA	DS	MH
A	13/07/2015	PRELIMINARY ISSUE	ZA	DS	MH

Cardno
Shaping the Future
Cardno (Qld) Pty Ltd | ABN 57 051 074 992
Level 11, 515 St Paul's Terrace
Fortitude Valley, QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722
Web: www.cardno.com.au

Drawn	ZA	Date JULY 2015
Checked	DS	Date JULY 2015
Designed	ZA	Date JULY 2015
Verified		Date
Approved		

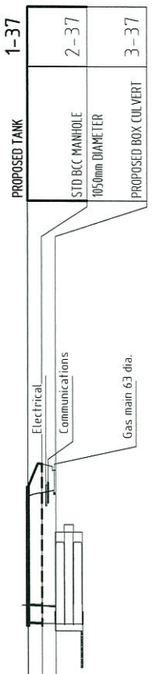
Client: RNA & LENDLEASE
Project: RNA SHOWGROUND REDEVELOPMENT
STORMWATER DETENTION TANK
Title: STORMWATER DRAINAGE LAYOUT PLAN

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES
DATUM: A.H.D. | Scale: AS SHOWN | Size: A1
Drawing Number: 161163-050-CD-C-301-6020 | Revision: C

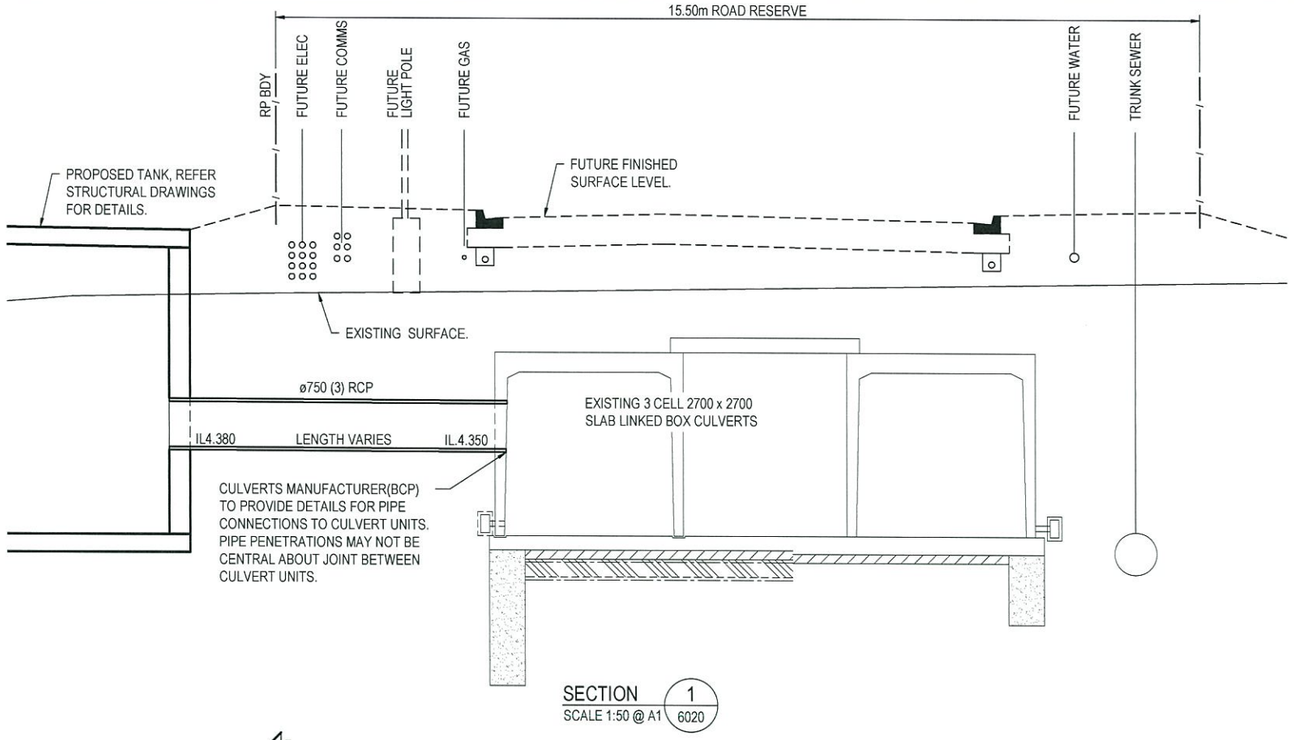
DATE PLOTTED: 21 August 2015 3:37 PM BY: ZAID ALALI
XREFs: X:\A10697-063_CIVIL_DESIGN\; X:\A10697-063_SURVEY\; X:\A10697-063_STRUC
CAD File: K:\AA10697\Phase 063_Cad & Models\Auto\Cad\Civil\Drawings\161163-050-CD-C-301-6020.dwg

DATE PLOTTED: 21 August 2015 3:45 PM BY: ZAID ALALI

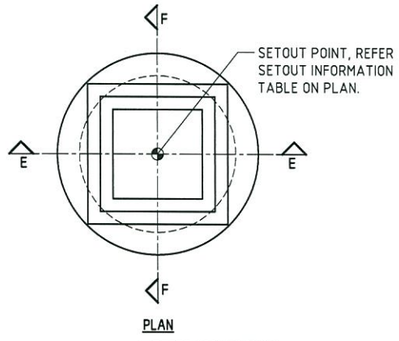
STRUCTURE NAME
STRUCTURE DESCRIPTION



	1-37	2-37	3-37
PIPE SIZEmm (Class)		600(3)	600(3)
PIPE GRADE %		0.20%	0.20%
PIPE SLOPE 1 in X		500.00	500.00
FULL PIPE FLOW VELOCITY (m/s)		0.97	0.97
PART FULL FLOW VELOCITY (m/s)			
WATER LEVEL IN STRUCTURE	3.441	3.427	3.427
HYDRAULIC GRADE LEVEL	3.441	3.427	3.427
PIPE FLOW (Cumecs)	3.441	3.427	3.427
PIPE CAPACITY AT GRADE (Cumecs)		0.000	0.000
DEPTH TO INVERT		0.274	0.274
INVERT LEVEL OF DRAIN	4.558	5.334	5.339 5.147
DESIGN SURFACE LEVEL	2.850	2.841	2.836 2.827
EASTING NORTHING	7.408	8.175	7.914
RUNNING CHAINAGE		503302.705 6963498.279	503306.714 6963495.200
LINE	0.000	4.565 4.565	4.668 9.233
		37	

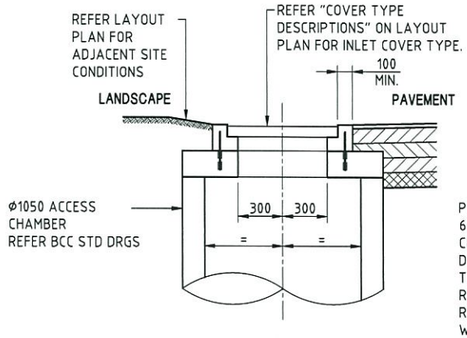


SECTION 1
SCALE 1:50 @ A1 6020

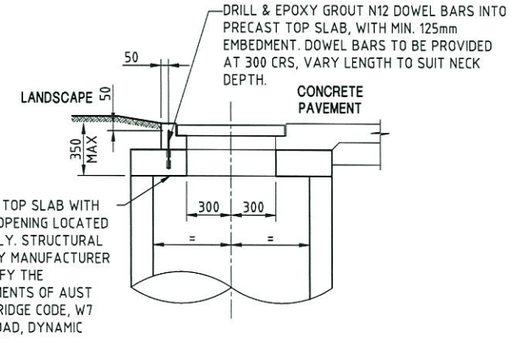


PLAN

NOTE:
STORMWATER STRUCTURES HAVE BEEN DETAILED AS CAST IN SITU CONSTRUCTION. SUBJECT TO THE ENGINEER'S APPROVAL, PRECAST COMPONENTS MAY BE SUBSTITUTED EITHER IN PART OR IN FULL FOR THE DETAILS SHOWN.



SECTION E-E



SECTION F-F

TYPICAL MANHOLE WITH 600x600 GRATED INLET

1: 20 AT A1
ADJACENT SITE CONDITIONS ARE INDICATIVE ONLY

CONTRACTOR TO CONFIRM LOCATION OF EXISTING SERVICES PRIOR TO COMMENCEMENT OF WORKS

!!! WARNING !!!
HIGH VOLTAGE ELECTRICAL RETICULATION IN VICINITY OF PROPOSED WORKS.

PLANS AND DOCUMENTS
referred to in the PDA APPROVAL
14 OCT 2015
MEDQ

STORMWATER DRAINAGE STRUCTURE NOTES

1. ALL DIMENSIONS PROVIDED ON STRUCTURE DETAILS ARE IN MILLIMETRES.
2. SETOUT POINTS GIVEN FOR ALL STORMWATER STRUCTURES ARE TO THE CENTER OF THE CHAMBER. FINISHED SURFACE LEVELS NOMINATED FOR:
   2.1. ROADWAY GULLIES ARE AT THE ADJACENT LIP OF KERB;
   2.2. FIELD INLETS ARE AT THE TOP OF THE GRATE;
   2.3. ACCESS CHAMBERS ARE AT THE TOP OF THE ACCESS COVER.
3. THE USE OF PRECAST COMPONENTS SHALL BE IN ACCORDANCE WITH THE RELEVANT AUTHORITY'S APPROVED PRODUCT LIST AND SUBJECT TO THE ENGINEERS APPROVAL.
4. CONCRETE CLASS TO BE AS FOLLOWS:
   – UNREINFORCED STRUCTURES N25
   – REINFORCED STRUCTURES N32.
5. PROVIDE WEEPHOLES IN ACCORDANCE WITH DETAIL SHOWN, IN THE UPSTREAM FACE OF ALL DRAINAGE STRUCTURES TO DRAIN UPSTREAM BEDDING IN TRENCHES.
6. ALL PIPE ENDS ARE TO BE RENDERED FLUSH WITH THE INSIDE FACE OF DRAINAGE STRUCTURES WITH A MINIMUM 50mm COVER TO STEEL REINFORCEMENT.
7. JOINTS BETWEEN PRECAST UNITS ARE TO BE COMPLETELY SEALED USING A METHOD APPROVED BY THE ENGINEER.
8. BASES OF ALL DRAINAGE STRUCTURES ARE TO BE BENCHED SMOOTHLY UP TO HALF HEIGHT OF PIPES (SPRING LINE).
9. STEP IRONS ARE TO BE PROVIDED TO ALL ACCESS CHAMBERS DEEPER THAN 850mm. STEP IRONS SHALL BE INSTALLED IN ACCORDANCE WITH AS1657.
10. COVERS AND GRATES TO BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

H: 0 20 40 60 80 100m
V: 0 2 4 6 8 10m
SCALE: H:1:1000 V:1:100 @A1

0 1 2 3 4 5m
SCALE 1:50 @A1

0 0.5 1 1.5 2m
SCALE 1:20 @A1

Rev.	Date	Description	Des.	Verif.	Appd.
C	21/08/2015	EDQ SUBMISSION	ZA	DS	MH
B	31/07/2015	EDQ SUBMISSION	ZA	DS	MH
A	13/07/2015	PRELIMINARY ISSUE	ZA	DS	MH

Cardno
Shaping the Future
Cardno (Qld) Pty Ltd | ABN 57 051 074 992
Level 11, 515 St Paul's Terrace
Fortitude Valley, QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722
Web: www.cardno.com.au

Drawn	ZA	Date JULY 2015
Checked	DS	Date JULY 2015
Designed	ZA	Date JULY 2015
Verified		Date
Approved		

Client: RNA & LENDLEASE
Project: RNA SHOWGROUND REDEVELOPMENT
STORMWATER DETENTION TANK
Title: STORMWATER DRAINAGE DETAILS AND SECTIONS

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES
DATUM A.H.D. | Scale AS SHOWN | Size A1
Drawing Number: 161163-050-CD-C-301-6021 | Revision C

XREF's:
CAD File: K:\A\10697\Phase 0633_Cad & Models\Auto\CadfCivil\Drawings\161163-050-CD-C-301-6021.dwg

STORMWATER DETENTION TANK

GENERAL NOTES:

1. THESE DRAWINGS AND NOTES ARE TO BE READ IN CONJUNCTION WITH ARCHITECTURAL AND OTHER WORKING DRAWINGS, SPECIFICATIONS, AND WITH SUCH FURTHER DETAILS, AND INSTRUCTIONS WHICH MAY BE ISSUED. REFER ALL DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH WORK.
2. CONSTRUCTION OF ALL STRUCTURAL AND CIVIL WORK SHALL COMPLY WITH CURRENT EDITIONS OF RELEVANT SAA CODES.
3. DIMENSIONS SHALL BE VERIFIED BEFORE COMMENCING CONSTRUCTION. DO NOT SCALE DRAWINGS TO OBTAIN DIMENSIONS.
4. THROUGHOUT CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVER STRESSED.
5. CONSTRUCTION SYSTEMS, PROCEDURES AND METHODOLOGY OF STRUCTURAL AND CIVIL WORK SHALL ENSURE COMPLIANCE WITH THE LOCAL AUTHORITY WORKPLACE HEALTH AND SAFETY LEGISLATION.

DESIGN CRITERIA:

1. THE STRUCTURAL ELEMENTS SHOWN ON THESE DRAWINGS HAVE BEEN DESIGNED FOR SUPERIMPOSED DEAD AND LIVE LOADS AS NOMINATED ON THE RELEVANT DRAWINGS AND THE FOLLOWING:
   WIND LOADS TO AS 1170.2
   - REGION B
   - TERRAIN CATEGORY 3
   - BCA STRUCTURE IMPORTANCE LEVEL 3
   - Vdes, θ 54.7

   EARTHQUAKE LOADS TO AS 1170.4, 2007
   - BCA STRUCTURE IMPORTANCE LEVEL 3
   - SITE SUBSOIL CLASS Be
   - HAZARD FACTOR (Z) 0.05
   - DESIGN CATEGORY II
2. CONCRETE ELEMENTS HAVE BEEN DESIGNED FOR THE FOLLOWING DURABILITY EXPOSURE TO AS 3600 (B1 EXPOSURE U.N.O.)
   - EXTERNAL :-
   - INTERNAL :-
   - FOOTINGS :-

SAFETY IN DESIGN AND CONSTRUCTION:

1. ALL CONSTRUCTION WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY WORKPLACE HEALTH AND SAFETY LEGISLATION.
2. CONSTRUCTION ACTIVITY CAN BE HAZARDOUS AND POTENTIAL SAFETY HAZARDS CONSIDERED BY THE DESIGNERS TO HAVE A HIGHER RISK THAN NORMAL CONSTRUCTION ACTIVITY ARE IDENTIFIED WITH APPROPRIATE NOTES IN THE DOCUMENTATION.
3. DESIGNERS GENERALLY HAVE A LOWER LEVEL OF APPRECIATION OF THE SAFETY RISKS AND HAZARDS INVOLVED IN CONSTRUCTION COMPARED TO THAT OF A COMPETENT BUILDER / CONTRACTOR AND THEREFORE ALL THE SAFETY RISKS AND HAZARDS APPLICABLE TO THIS PROJECT MAY NOT BE IDENTIFIED.
4. IT IS ESSENTIAL THAT PRIOR TO COMMENCEMENT OF CONSTRUCTION AN ADEQUATE SAFETY PLAN IS PREPARED BY THE BUILDER / CONTRACTOR FOR THE WORKS IN COMPLIANCE WITH STATUTORY REQUIREMENTS. THE SAFETY PLAN SHALL INCLUDE APPROPRIATE WORK METHOD STATEMENTS FOR ALL RISK ACTIVITIES. THE STRUCTURAL ENGINEER IS AVAILABLE TO BE CONSULTED IN REGARDS TO THE SAFETY PLANS.
5. PRIOR TO ANY ERECTION OF STRUCTURAL ELEMENTS THE CONTRACTOR SHALL HAVE COMPLETED A RISK ASSESSMENT OF ALL CONSTRUCTION PROCEDURES AND ENSURED THAT WHERE POSSIBLE, ALL RISKS HAVE BEEN ELIMINATED AND WHERE NOT POSSIBLE THEIR SAFETY PLAN HAS ADDRESSED THOSE ISSUES AND IT HAS BEEN FORMULATED AND DOCUMENTED FOR STRICT ADHERENCE DURING THE CONSTRUCTION WORKS.
6. PRIOR TO FABRICATION OF STEELWORK THE CONTRACTOR SHALL AGREE WITH THE ENGINEER ON AREAS OF RISK WHICH HAVE BEEN ADDRESSED BY THE DESIGN WHERE POSSIBLE AND AGREE ON SUITABLE CONSTRUCTION PROCEDURES WHERE AREAS OF RISK STILL EXIST.
7. PRIOR TO THE USE OF THE PROJECT AS DESIGNED, THE OWNER SHALL HAVE COMPLETED A RISK ASSESSMENT OF ALL WORK PRACTICES AND ENSURED THAT WHERE POSSIBLE ALL RISKS HAVE BEEN ELIMINATED AND WHERE NOT POSSIBLE THEIR SAFETY PLAN HAS ADDRESSED THOSE ISSUES AND IT HAS BEEN FORMULATED AND DOCUMENTED FOR STRICT ADHERENCE AFTER COMMISSIONING.

DEMOLITION AND CLEARING NOTES:

1. PRIOR TO CLEARING AND DEMOLITION OPERATIONS REMOVE WITHOUT DAMAGING, ALL EXISTING INFRASTRUCTURE TO BE REUSED OR STORED AS NOTED AND DIRECTED BY THE SUPERINTENDENT.
2. CLEARING AND DEMOLITION OPERATIONS SHALL BE CARRIED OUT ONLY WITHIN THOSE AREAS AFFECTED BY THE PROPOSED WORKS UNLESS NOTED OTHERWISE.
3. DEMOLISH EXISTING REDUNDANT INFRASTRUCTURE SUCH AS KERBS, PAVEMENT SEALS, CONCRETE FOOTPATHS, ABANDONED SERVICE STRUCTURES ETC. TO A DEPTH OF 500mm BELOW PROPOSED PAVEMENT SUBGRADE LEVEL AND 300mm BELOW FINISHED LEVEL IN ALL OTHER AREAS AND REFILL AS NOTED BELOW. DISPOSE OF ALL SUCH MATERIAL OFF SITE.
4. CLEAR RUBBISH, SCRUB, TREES, STUMPS ETC. AND GRUB OUT STUMPS AND ROOTS OVER 50mm DIAMETER TO A DEPTH OF 500mm BELOW PROPOSED PAVEMENT SUBGRADE LEVEL AND 300mm BELOW FINISHED LEVEL IN ALL OTHER AREAS AND REFILL AS NOTED BELOW.
5. REFILL DEMOLITION EXCAVATIONS AND GRUB HOLES WITH ON SITE MATERIAL WON FROM CUT AREAS SUITABLE FOR USE AS FILL MATERIAL (REFER EARTHWORKS NOTES). PLACE AND COMPACT FILL MATERIAL IN ACCORDANCE WITH EARTHWORKS NOTES.

EARTHWORKS NOTES:

1. THE EARTHWORKS DRAWINGS AND THESE NOTES ARE TO BE READ IN CONJUNCTION WITH THE EARTHWORKS SPECIFICATION.
2. A SOILS INVESTIGATION OF THE SITE HAS BEEN CARRIED OUT BY CARDNO AND A COPY OF THIS REPORT IS INCLUDED IN THE EARTHWORKS SPECIFICATION, OR IS AVAILABLE FOR VIEWING AT THE ENGINEERS OFFICE.
3. THE CONTRACTOR SHALL ALLOW TO ENGAGE AN APPROVED GEOTECHNICAL CONSULTANT TO CARRY OUT ALL INSPECTIONS, TESTING AND CERTIFICATIONS IN ACCORDANCE WITH THE EARTHWORKS SPECIFICATION.
4. PRIOR TO COMMENCEMENT OF WORKS THE CONTRACTOR IS TO IDENTIFY AND BE SATISFIED OF THE CORRECT LOCATIONS OF ALL EXISTING SERVICES WHETHER INDICATED OR NOT ON THE PLANS. ANY DAMAGE TO EXISTING SERVICES IS TO BE RECTIFIED AS SOON AS POSSIBLE AT THE CONTRACTORS EXPENSE.
5. CARRY OUT ALL EARTHWORKS IN ACCORDANCE WITH THE EARTHWORKS SPECIFICATION.
6. ALL EXCAVATED BATTERS AND FILL EMBANKMENTS ARE TO BE INSPECTED AND APPROVED BY THE GEOTECHNICAL ENGINEER.
7. REFER TO STRUCTURAL DRAWINGS FOR DETAILED EXCAVATION.
8. REFER ALSO ARCHITECT, LANDSCAPE ARCHITECT AND HYDRAULICS ENGINEER FOR ADDITIONAL WORKS AND REQUIREMENTS.
9. PRIOR TO COMMENCEMENT OF WORK CONFIRM ALL BULK EXCAVATION LEVELS WITH THE ARCHITECT.

FOOTING NOTES:

1. THE BUILDER SHALL ALLOW TO ENGAGE AN APPROVED GEOTECHNICAL ENGINEER IN ACCORDANCE WITH THE EARTHWORKS AND OR THE BORED PIER SECTIONS OF THE SPECIFICATIONS TO CARRY OUT ALL INSPECTIONS AND TESTING TO CERTIFY THAT THE FOUNDING MATERIAL FOR HIGH LEVEL FOOTINGS AND OR THE CAPACITY OF BORED PIERS COMPLIES WITH THAT NOMINATED IN THE DOCUMENTATION. THE CERTIFICATION IS TO BE SIGNED BY A REGISTERED PROFESSIONAL ENGINEER OF QUEENSLAND.
2. AN ALLOWABLE BEARING PRESSURE FOR HIGH LEVEL FOOTINGS OF 3500 kPa HAS BEEN ASSUMED IN THE DESIGN OF THE FOOTINGS.
   FOR BORED PIERS AN ALLOWABLE END BEARING DESIGN PARAMETERS ARE SHOWN ON THE DRAWINGS.
3. WHERE REQUIRED FOUNDING MATERIAL IS DEEPER THAN THE UNDERSIDE OF THE HIGH LEVEL FOOTINGS AS DETAILED ALLOW TO BACKFILL ADDITIONAL EXCAVATION WITH N20 CONCRETE.
4. WHERE EXCAVATION WORK IS TO BE CARRIED OUT ADJACENT TO EXISTING FOOTINGS THE EXACT LEVEL OF THE UNDERSIDE OF THE FOOTINGS SHALL BE DETERMINED BY TEST PITS PRIOR TO EXCAVATION. UNDERPINNING SHALL BE CARRIED OUT AS DETAILED OR REQUIRED BY THE STRUCTURAL ENGINEER
5. ALL FOOTING EXCAVATIONS SHALL BE FORMED AS NECESSARY WHEN EXCAVATED FACE IS NOT STABLE, DEWATERED AND CLEANED OF LOOSE AND SOFT MATERIAL PRIOR TO PLACING CONCRETE.
6. ALL WALLS AND COLUMNS SHALL BE CONCENTRIC WITH SUPPORTING FOOTINGS UNLESS NOTED OTHERWISE ON THE DRAWINGS.

BORED PIER NOTES:

1. ALL BORED PIERS TO BE IN ACCORDANCE WITH THE BORED PIER SPECIFICATION.
2. BORED PIERS SHALL BE DESIGNED FOR THE WORKING LOADS NOMINATED AT AN ECCENTRICITY OF 75mm IN ACCORDANCE WITH THE BORED PIER SPECIFICATION.
3. PRIOR TO COMMENCEMENT OF ANY BORED PIER WORK THE BUILDER SHALL LOCATE ALL NEW AND EXISTING SERVICES RELATIVE TO PIER LOCATIONS. THE ENGINEER IS TO BE NOTIFIED OF ANY POTENTIAL CLASHES.
4. BORED PIER CONTRACTOR IS TO MINIMISE ANY NOISE AND VIBRATION DUE TO PIER INSTALLATION ADJACENT TO EXISTING BUILDINGS AND SERVICES. REFER BORED PIER SPECIFICATION FOR REQUIREMENTS.
5. THE BASE AND THE SHAFT OF THE BORED PIERS SHALL BE CLEANED OF ALL LOOSE MATERIAL BY THE USE OF A 'CLEAN-OUT' BUCKET
6. ALLOW FOR PIER LINERS WHERE EXISTING SITE CONDITIONS REQUIRE IT.
7. AT COMPLETION OF BORED PIER INSTALLATION AND PRIOR TO COMMENCEMENT OF FURTHER WORK PROVIDE FOR APPROVAL FINAL SURVEY DETAILS OF THE AS CONSTRUCTED PIER LOCATIONS AND THE GEOTECHNICAL ENGINEERS CERTIFICATION OF THE BORED PIER LOAD CARRYING CAPACITIES IN ACCORDANCE WITH THE BORED PIER SPECIFICATION.

CONCRETE:

1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM WITH CURRENT EDITIONS OF AS 1379, AS 3600 AND AS3610 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS. REFER ALSO TO INSITU CONCRETE, FORMWORK AND REINFORCEMENT SECTION OF THE SPECIFICATIONS.
2. CONCRETE STRENGTH GRADE FOR PARTICULAR ELEMENTS SHALL BE AS NOTED ON THE DRAWINGS.
3. PROJECT ASSESSMENT OF STRENGTH IN ACCORDANCE WITH AS 1379 SHALL BE ADOPTED FOR SAMPLING AND TESTING. REFER TO SPECIFICATION FOR FREQUENCY OF TESTS.
4. SIZE OF ELEMENTS IS EXCLUSIVE OF APPLIED FINISHES. BEAMS DEPTHS INCLUDE SLAB THICKNESS AND ARE THE FIRST DIMENSION SPECIFIED, FOLLOWED BY WIDTH. UNLESS NOTED OTHERWISE ALL FORMED EDGES AND CORNERS OF CONCRETE MEMBERS SHALL HAVE 20mm CHAMFERS.
5. CONSTRUCTION JOINTS SHALL BE MADE ONLY AT APPROVED LOCATIONS, AND, IN BEAMS AND SLABS SHALL BE CONSTRUCTED WITH A SHEAR KEY TO ENGINEER'S DETAIL U.N.O. SURFACES OF CONCRETE AT ALL JOINTS SHALL BE THOROUGHLY MECHANICALLY SCABBLED, FULLY EXPOSING THE AGGREGATE MIX, UNLESS OTHERWISE NOTED.
6. ALL REINFORCEMENT SHALL BE TO AS/NZS 4671 AND REINFORCEMENT GRADE IS DESIGNATED AS FOLLOWS:-
   - R: PLAIN ROUND BAR, GRADE 250
   - N: DEFORMED BAR, GRADE 500
   - SL/RL: WIRE REINFORCING FABRIC, GRADE 500
7. REINFORCEMENT SHALL BE BENT COLD IN ACCORDANCE WITH AS3600 EXCEPT WHERE APPROVED BY THE STRUCTURAL ENGINEER. NO REBENDING SHALL BE PERMITTED.
8. DO NOT CUT REINFORCEMENT ON SITE TO CLEAR PENETRATIONS. DISPLACE REINFORCEMENT SLIGHTLY AS NECESSARY TO CLEAR BLOCKOUTS.
9. CONCRETE COVER AND LAPS TO REINFORCEMENT SHALL BE AS NOTED ON THE DRAWINGS.
10. SLABS AND BEAMS SHALL BEAR ONLY ON LOAD BEARING ELEMENTS SHOWN ON THE PLANS. ALL OTHER NON LOAD BEARING ELEMENTS INCLUDING WINDOW MULLIONS, NON LOAD BEARING WALLS ETC. SHALL BE KEPT 20mm CLEAR FROM SOFFIT OF STRUCTURE.
11. MASONRY WALLS SHALL NOT BE ERECTED ON SUSPENDED SLABS AND BEAMS UNTIL ALL PROPPING HAS BEEN REMOVED U.N.O.
12. APPLY EVAPORATION RETARDER AND CURE ALL CONCRETE IN ACCORDANCE WITH THE CONCRETE SPECIFICATIONS
13. FORMWORK SHALL REMAIN UNDISTURBED FOR THE MINIMUM STRIPPING TIMES SPECIFIED IN AS3610, UNLESS OTHERWISE APPROVED

REINFORCED CONCRETE MASONRY:

1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM WITH THE CURRENT EDITION OF AS3700 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS AND SPECIFICATIONS.
2. CONCRETE MASONRY UNITS SHALL HAVE A MINIMUM CHARACTERISTIC UNCONFINED COMPRESSIVE STRENGTH OF 15 MPa IN ACCORDANCE WITH THE REQUIREMENTS OF AS/NZS 4455.1.
3. PROVIDE ADEQUATE TEMPORARY PROPPING TO WALLS DURING CONSTRUCTION IN ACCORDANCE WITH AS 3700 AND THE WORK METHOD STATEMENT PREPARED BY THE BUILDER / CONTRACTOR
4. PROVIDE VERTICAL CONTROL JOINTS IN WALLS AT MAXIMUM 8 METRE CENTRES OR WHERE INDICATED ON DRAWINGS.
5. ALL WALLS SHALL BE FULLY BONDED OR TIED AT THEIR INTERSECTIONS UNLESS DETAILED OTHERWISE.
6. ALL NON-LOADBEARING MASONRY WALLS SHALL BE KEPT CLEAR OF SLAB/BEAM SOFFITS BY 20mm U.N.O. AND THE VOID FILLED WITH AN APPROVED COMPRESSIBLE FILLER AND FIRE RATED AS REQUIRED.
7. NO MASONRY WALLS TO BE ERECTED ON SUSPENDED SLABS UNTIL ALL PROPPING HAS BEEN REMOVED.
8. MORTAR SHALL BE MECHANICALLY MIXED AND TYPE M3 U.N.O. CONSISTING OF 1 PART CEMENT, 1 PART HYDRATED LIME AND 6 PARTS OF WELL GRADED SAND, AND SHALL COMPLY WITH THE REQUIREMENTS OF AS 3700.
9. CORES OF ALL BLOCKS SHALL BE CLEAN AND FREE FROM PROJECTING MORTAR. PROVIDE CLEAN OUT OPENINGS AT BASE OF EACH LIFT. FORM THE FACE OF CLEAN OUT BLOCKS. INFILL BLOCK SHELLS SHALL NOT BE USED WITHOUT APPROVAL BY THE STRUCTURAL ENGINEER.
10. CORE FILLING CONCRETE SHALL BE MIXED USING MAX 10mm AGGREGATE, SHALL HAVE F'C 20 MPa AND MAXIMUM SLUMP OF 230mm. CONCRETE SHALL BE PLACED TO COMPLETELY FILL CORES WITHOUT SEGREGATION OR VOIDS. COMPACT BY INTERNAL VIBRATION OR RODDING AND STRENGTH TEST IN ACCORDANCE WITH THE MASONRY SPECIFICATION.
11. FILL CORES TO MAXIMUM 2.4 METRE HIGH FREE DROP IN ANY ONE POUR.
12. BACKFILL RETAINING WALLS, ON ENGINEER'S APPROVAL, WITH CLEAN 20mm GRAVEL FILLING FREE FROM CLAY OR OTHER ORGANIC MATTER.
13. RETAINING WALLS SHOULD NOT BE BACKFILLED UNTIL A MINIMUM OF 14 DAYS AFTER GROUT FILLING. PROPPED RETAINING WALLS SHALL NOT BE BACKFILLED UNTIL THE SLAB OVER HAS BEEN CAST A MINIMUM OF 7 DAYS AND THE WALL HAS BEEN GROUT FILLED A MINIMUM OF 14 DAYS.
14. PROVIDE ALL AGRICULTURAL PIPES OR WEEPHOLES TO EARTH FACE OF ALL RETAINING WALLS AS NOTED IN THE DOCUMENTATION. ALL AGRICULTURAL PIPES OR WEEPHOLES TO BE PROTECTED FROM SILTATION BY THE USE OF GEOFABRIC. AGRICULTURAL DRAINS TO BE CONNECTED TO THE STORMWATER SYSTEM TO HYDRAULIC ENGINEERS DETAILS.
15. PROVIDE WATERPROOF MEMBRANE & D.P.C. AS REQUIRED BY THE ARCHITECTURAL SPECIFICATION.

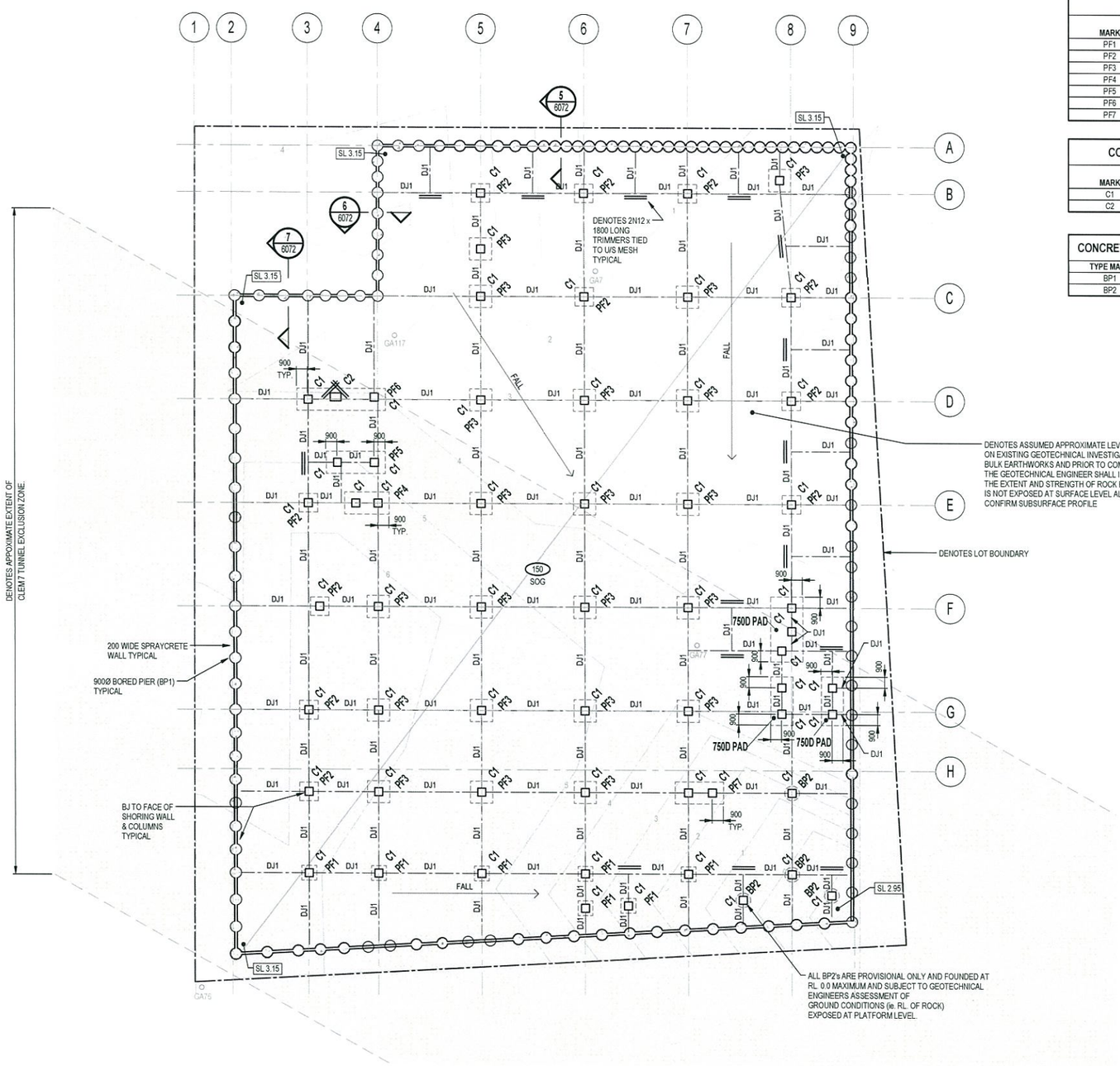
PLANS AND DOCUMENTS
referred to in the PDA APPROVAL
14 OCT 2015
MEDQ

Rev	Date		Des.	Ver.	Appr.
D	31.07.2015	EDQ SUBMISSION			
C	14.07.2015	PRELIMINARY ISSUE			
B	13.07.2015	PRELIMINARY ISSUE			
A	08.07.2015	PRELIMINARY ISSUE			

Cardno (QLD) Pty. Ltd. ABN 57 051 074 992
LEVEL 11, 515 St Paul's Terrace
Fortitude Valley, QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722
Email: brisbane@cardno.com.au Web: www.cardno.com.au

Drawn KA	Date	
Checked KA	Date	
Designed DRV	Date	
Verified MVH	Date	
Approved MVH	Date	

Client: RNA & LEND LEASE
Project: RNA SHOWGROUND REDEVELOPMENT STORMWATER DETENTION TANK
Title: NOTES SHEET
Status: PRELIMINARY — NOT TO BE USED FOR CONSTRUCTION PURPOSES
Datum | Date | Scale | Size: A1
Drawing Number: 161163-050-DD-C-301-6005
Revision: D



DETENTION TANK BASE SLAB AND FOOTING PLAN

1 : 200

CONCRETE PAD FOOTING TYPE SCHEDULE

MARK	SIZE		
	WIDTH (mm)	LENGTH (mm)	DEPTH (mm)
PF1	1200	1200	600
PF2	1500	1500	600
PF3	1800	1800	750
PF4	1800	3600	750
PF5	1800	4800	750
PF6	1800	7200	750
PF7	1800	3900	600

CONCRETE COLUMN TYPE SCHEDULE

MARK	SIZE	
	WIDTH	LENGTH
C1	650	650
C2	650	900

CONCRETE BORED PIER TYPE SCHEDULE

TYPE MARK	DIAMETER (mm)
BP1	900
BP2	1200

NOTES

1. FOR ALL RELEVANT CONSTRUCTION NOTES REFER DRAWING 6005
2. **DESIGN LOADS**

AREA	SUPERIMPOSED DEAD LOAD	LIVE LOAD

3. **CONCRETE**
ALL WORKMANSHIP, MATERIALS & TESTING SHALL BE IN ACCORDANCE WITH AS 3600 EXCEPT AS VARIED BY THE CONTRACT DOCUMENTS AND SPECIFICATION.
ALL CONCRETE COMPONENTS SHALL BE NORMAL CLASS WITH A 28 DAY COMPRESSIVE STRENGTH OF 32MPa (ie. N32) EXCEPT WHERE VARIED BY THE TABLE BELOW.-

COMPONENT	STRENGTH
SLAB ON GROUND	S40
PAD FOOTINGS	N40
COLUMN	N50
BORED PIERS	S32

N DENOTES NORMAL CLASS CONCRETE WITH THE FOLLOWING PROPERTIES U.N.O.
MAXIMUM AGGREGATE SIZE:- 20mm
SLUMP:- 80mm ±15
TESTING TYPE:- PROJECT ASSESSMENT
S DENOTES SPECIAL CLASS CONCRETE WITH 650 MICROSTRAIN MAXIMUM SHRINKAGE AS PER THE CONCRETE SPECIFICATION U.N.O.
S32(1) - DENOTES SPECIAL CLASS CONCRETE WITH 650 MICROSTRAIN MAXIMUM SHRINKAGE CONTROL AND HIGH EARLY STRENGTH TO SUIT POST TENSIONING.

LEGEND

- (150 SOG) — DENOTES 150 MIN. THICK SLAB ON GROUND ON VAPOUR BARRIER ON 50mm DEPTH SAND BED REINFORCED WITH SL82 MESH 40 TOP COVER. WHERE ROCK IS NOT EXPOSED AT PLATFORM LEVEL ALLOW TO PREPARE SUBGRATE TO GEOTECHNICAL ENGINEERS APPROVAL ON SITE.
- ☐ — CONCRETE COLUMN OVER
- C# — DENOTES CONCRETE COLUMN
- SL. — DENOTES SLAB SURFACE LEVEL
- DJ1 — DENOTES DOWEL JOINT.
- BJ — DENOTES BUTT JOINT.

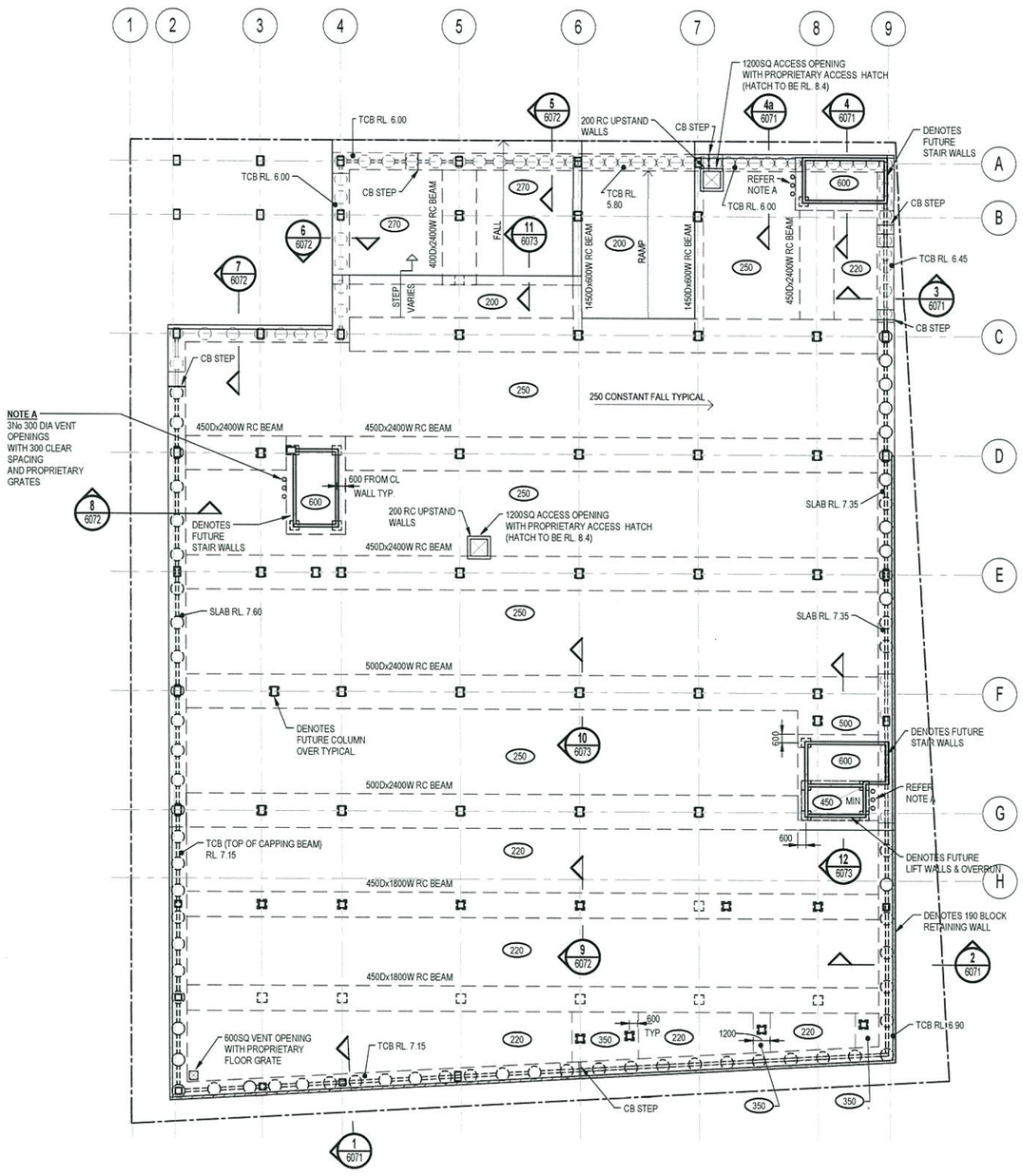
PLANS AND DOCUMENTS referred to in the PDA APPROVAL
14 OCT 2015
MEDQ

Rev	Date		Des.	Ver.	Appr.
C	31.07.2015	EDQ SUBMISSION			
B	13.07.2015	PRELIMINARY ISSUE			
A	08.07.2015	PRELIMINARY ISSUE			

Cardno (QLD) Pty. Ltd. ABN 57 051 074 992
LEVEL 11, 515 St Paul's Terrace
Fortitude Valley, QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722
Email: brisbane@cardno.com.au Web: www.cardno.com.au

		Date
Drawn	KA	
Checked	KA	
Designed	DRV	
Verified	MVH	
Approved	MVH	

Client: RNA & LEND LEASE
Project: RNA SHOWGROUND REDEVELOPMENT STORMWATER DETENTION TANK
Title: DETENTION TANK BASE SLAB AND FOOTING PLAN
Status: PRELIMINARY — NOT TO BE USED FOR CONSTRUCTION PURPOSES
Datum | Date | Scale | Size: A1
Drawing Number: 161163-050-DD-C-301-6050
Revision: C



DETENTION TANK ROOF SLAB PLAN

1 : 200

NOTES

1. FOR ALL RELEVANT CONSTRUCTION NOTES REFER DRAWING 6005
2. **DESIGN LOADS**

AREA	SUPERIMPOSED DEAD LOAD	LIVE LOAD
INTERIM EKKA STAGE		
GENERAL		15 kPa
RETAIL/CARPARK STAGE		
GROUND FLOOR RETAIL	6.5 kPa	5 kPa
GROUND FLOOR CARPARK		2.5 kPa
GROUND FLOOR CARPARK DURING EKKA GRIDS E TO A		15 kPa
LOADING DOCK		
MAX. VEHICLE TOTAL LOAD		30 Tonnes
MAX. VEHICLE AXLE LOAD		8.4 Tonnes

3. **CONCRETE**
ALL WORKMANSHIP, MATERIALS & TESTING SHALL BE IN ACCORDANCE WITH AS 3600 EXCEPT AS VARIED BY THE CONTRACT DOCUMENTS AND SPECIFICATION.
ALL CONCRETE COMPONENTS SHALL BE NORMAL CLASS WITH A 28 DAY COMPRESSIVE STRENGTH OF 32MPa (ie. N32) EXCEPT WHERE VARIED BY THE TABLE BELOW:-

COMPONENT	STRENGTH
SLABS AND BEAMS	S40
N DENOTES NORMAL CLASS CONCRETE WITH THE FOLLOWING PROPERTIES U.N.O. MAXIMUM AGGREGATE SIZE:- 20mm SLUMP:- 80mm ±15 TESTING TYPE:- PROJECT ASSESSMENT S DENOTES SPECIAL CLASS CONCRETE WITH 650 MICROSTRAIN MAXIMUM SHRINKAGE AS PER THE CONCRETE SPECIFICATION U.N.O. S32(1) - DENOTES SPECIAL CLASS CONCRETE WITH 650 MICROSTRAIN MAXIMUM SHRINKAGE CONTROL AND HIGH EARLY STRENGTH TO SUIT POST TENSIONING.	

4. THE STRUCTURAL SLAB SURFACE HAS A CONSTANT FALL FROM RL 7.60 AT GRID 2 TO RL. 7.35 AT GRID 9 EXCEPT IN AREA OF THE LOADING DOCK. ALL CONCRETE SLAB AND BEAM THICKNESSES ARE CONSTANT U.N.O. WITH SOFFIT FALL FROM GRID 2 TO 9 TO MATCH SURFACE LEVELS/FALLS
5. ALL FUTURE COLUMNS AND WALLS NOTED ON PLAN ARE TO HAVE STARTER BARS WITH PROPRIETARY MECHANICAL COUPLERS WITH PROTECTIVE CAPS CAST INTO THE FLOOR STRUCTURE. REFER FUTURE COLUMN/WALL DETAILS.

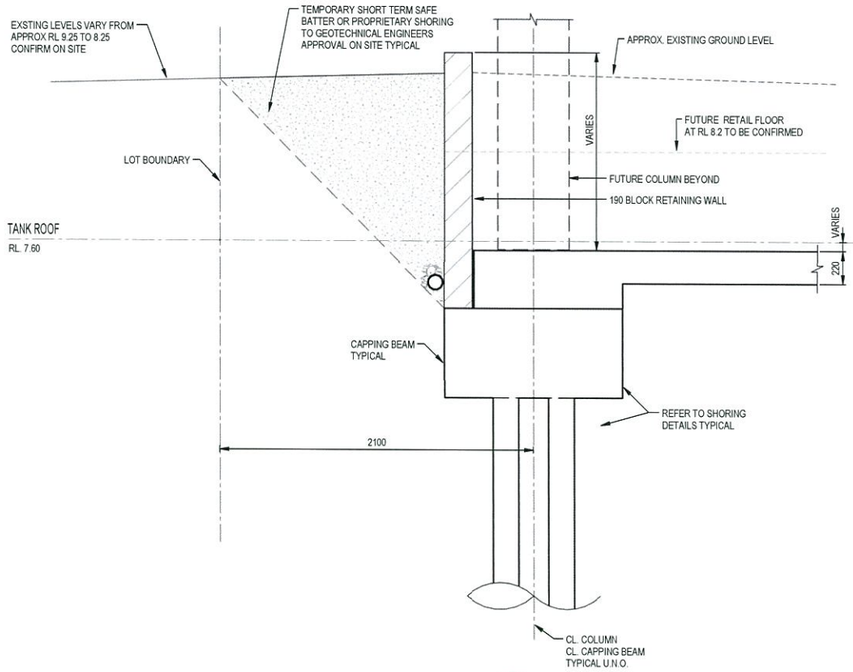
PLANS AND DOCUMENTS
referred to in the PDA APPROVAL
14 OCT 2015
MEDQ

Rev	Date		Des.	Ver.	Appr.
D	31.07.2015	EDQ SUBMISSION			
C	14.07.2015	PRELIMINARY ISSUE			
B	13.07.2015	PRELIMINARY ISSUE			
A	08.07.2015	PRELIMINARY ISSUE			

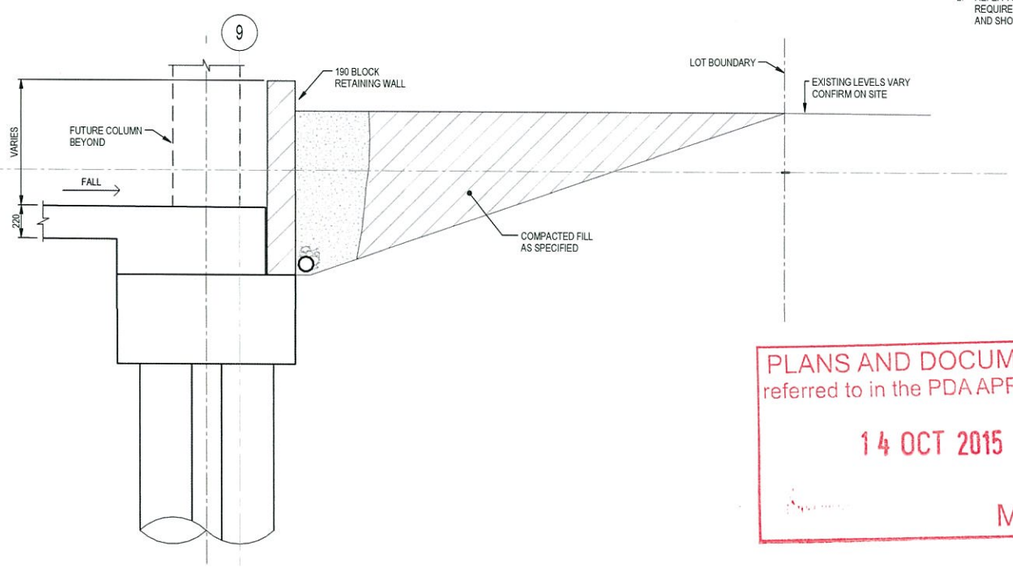
Cardno (QLD) Pty. Ltd. ABN 57 051 074 992
LEVEL 11, 515 St Paul's Terrace
Fortitude Valley, QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722
Email: brisbane@cardno.com.au Web: www.cardno.com.au

		Date
Drawn	KA	
Checked	KA	
Designed	DRV	
Verified	MVH	
Approved	MVH	

Client: RNA & LEND LEASE
Project: RNA SHOWGROUND REDEVELOPMENT STORMWATER DETENTION TANK
Title: DETENTION TANK ROOF SLAB PLAN
Status: PRELIMINARY NOT TO BE USED FOR CONSTRUCTION PURPOSES
Datum | Date | Scale | Size: A1
Drawing Number: 161163-050-DD-C-301-6070
Revision: D



SECTION 1 (6070) 1 : 20

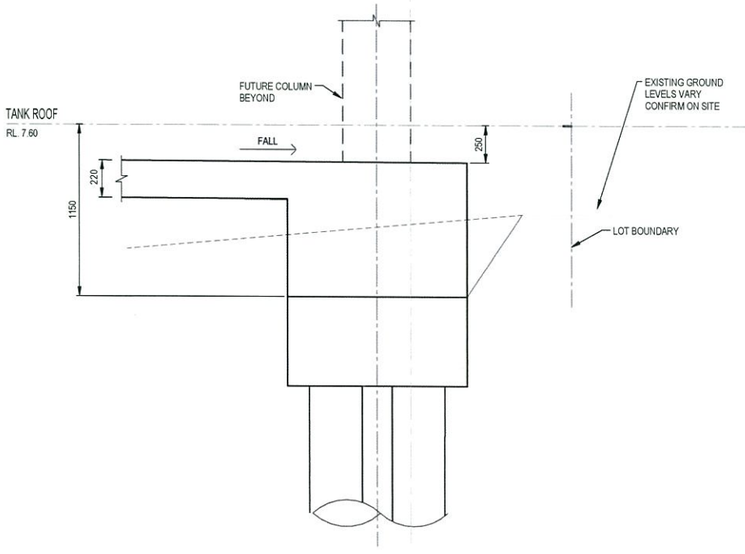


SECTION 2 (6070) 1 : 20

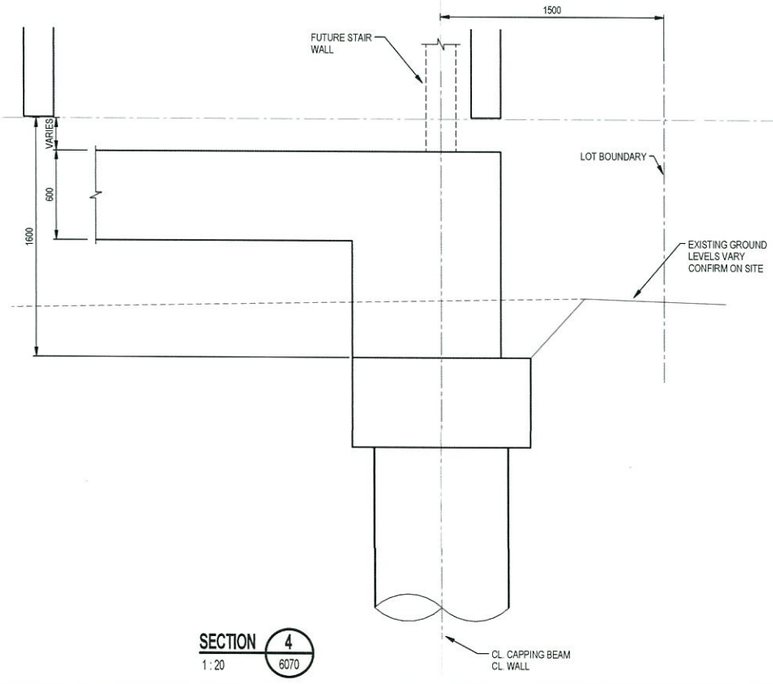
NOTES

1. FOR ALL RELEVANT CONSTRUCTION NOTES REFER DRAWING 6005
2. REFER TO EARTHWORKS SPECIFICATION FOR ALL REQUIREMENTS IN RELATION TO EARTHWORKS AND SHORING.

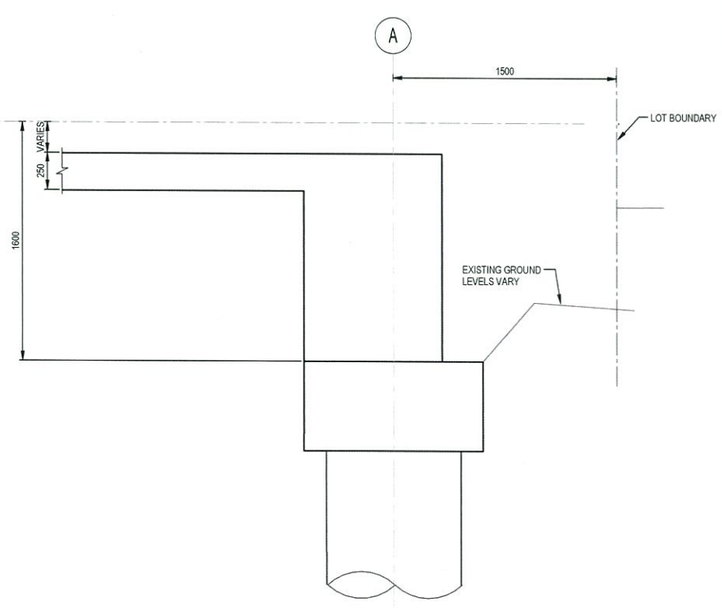
PLANS AND DOCUMENTS
referred to in the PDA APPROVAL
14 OCT 2015
MEDQ



SECTION 3 (6070) 1 : 20



SECTION 4 (6070) 1 : 20



SECTION 4a (6070) 1 : 20

Rev	Date		Des.	Ver.	Appr.
B	31.07.2015	EDQ SUBMISSION			
A	13.07.2015	PRELIMINARY ISSUE			

Cardno (QLD) Pty. Ltd. ABN 57 051 074 992
LEVEL 11, 515 St Paul's Terrace
Fortitude Valley, QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722
Email: brisbane@cardno.com.au Web: www.cardno.com.au

		Date
Drawn	KA	
Checked	KA	
Designed	DRV	
Verified	MVH	
Approved	MVH	

Client: RNA & LEND LEASE

Project: RNA SHOWGROUND REDEVELOPMENT
STORMWATER DETENTION TANK

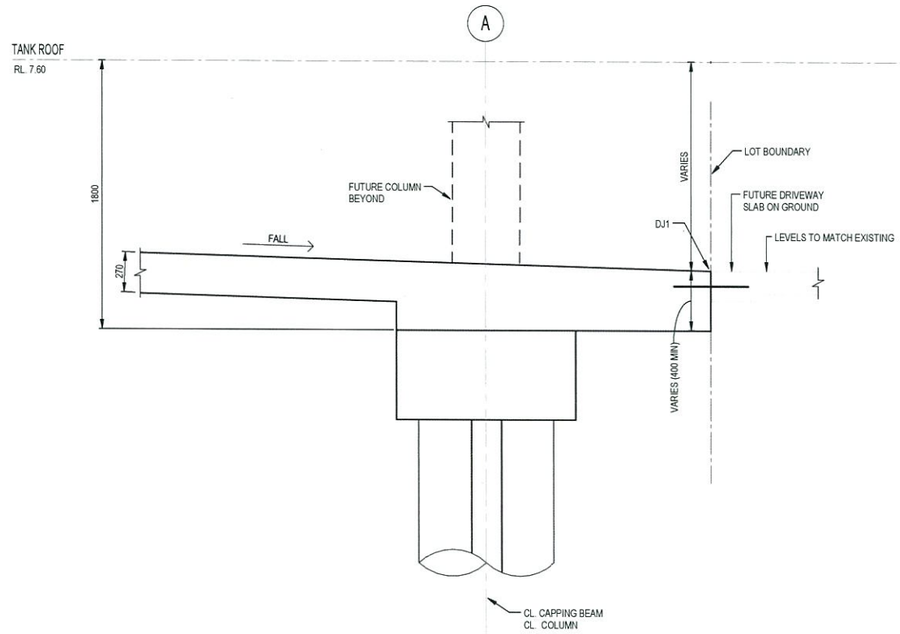
Title: DETENTION TANK ROOF SLAB SECTIONS & DETAILS
SHEET 1

Status: **PRELIMINARY**
NOT TO BE USED FOR CONSTRUCTION PURPOSES

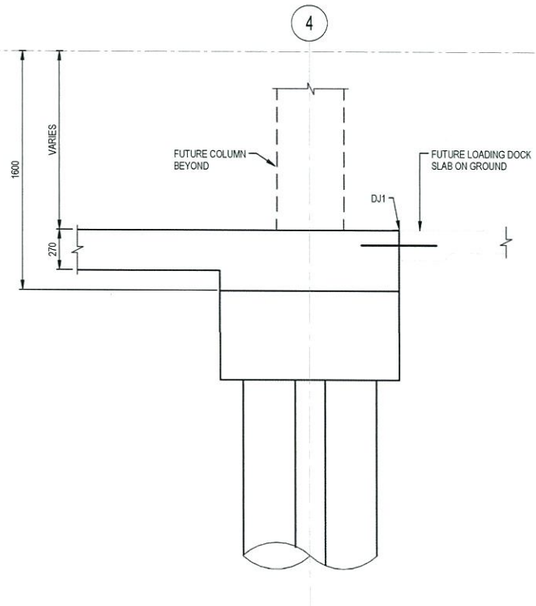
Datum	Date	Scale	Size
			A1

Drawing Number: 161163-050-DD-C-301-6071

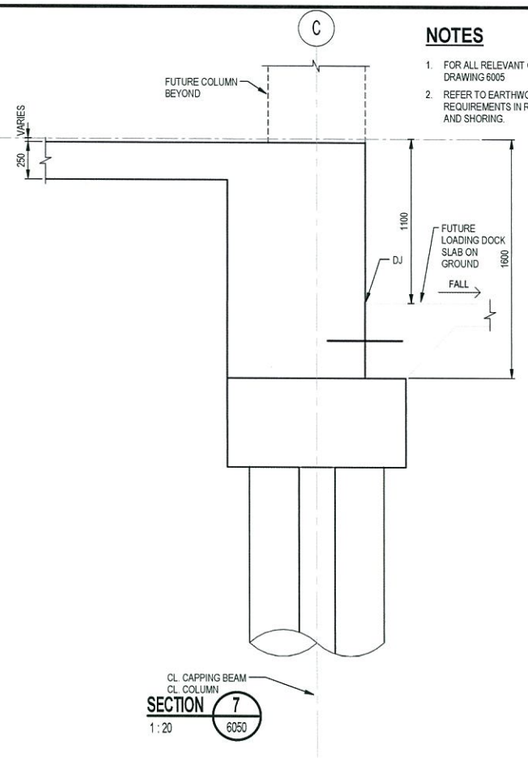
Revision: B



SECTION 5 / 6050
1 : 20



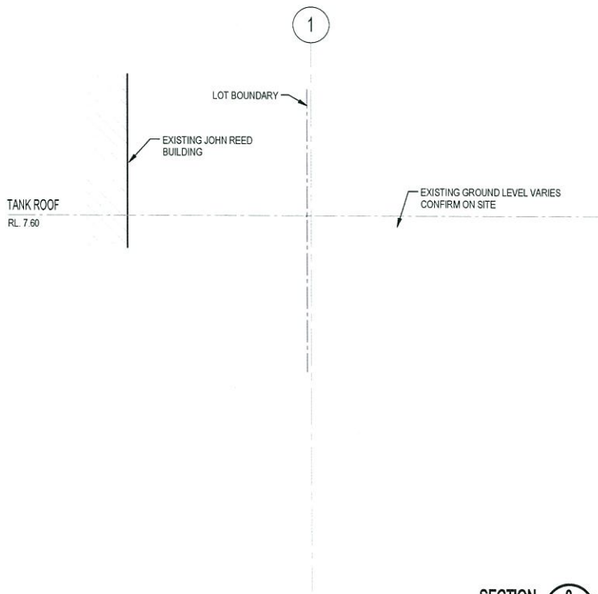
SECTION 6 / 6050
1 : 20



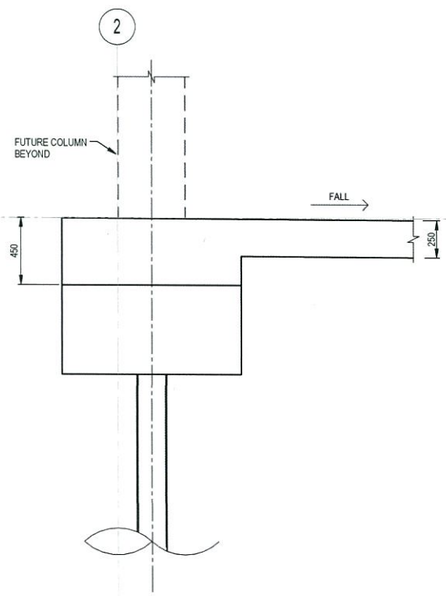
SECTION 7 / 6050
1 : 20

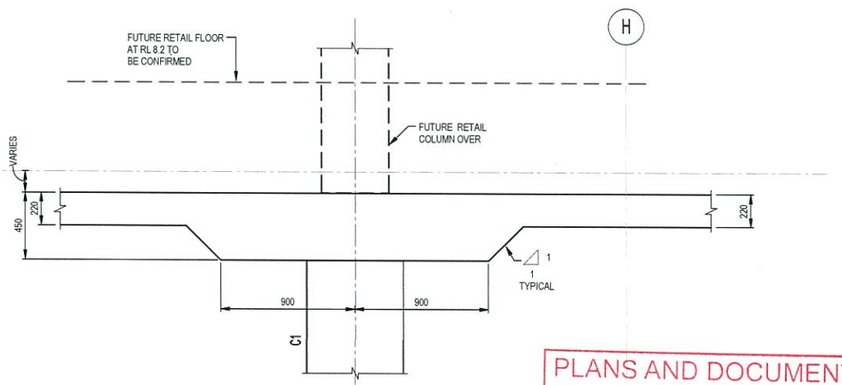
NOTES

1. FOR ALL RELEVANT CONSTRUCTION NOTES REFER DRAWING 6005
2. REFER TO EARTHWORKS SPECIFICATION FOR ALL REQUIREMENTS IN RELATION TO EARTHWORKS AND SHORING.



SECTION 8 / 6070
1 : 20





TYPICAL 1800 WIDE BAND BEAM

SECTION 9 / 6070
1 : 20

PLANS AND DOCUMENTS
referred to in the PDA APPROVAL
14 OCT 2015
MEDQ

Rev	Date		Des.	Ver.	Appr.
B	31.07.2015	EDQ SUBMISSION			
A	13.07.2015	PRELIMINARY ISSUE			

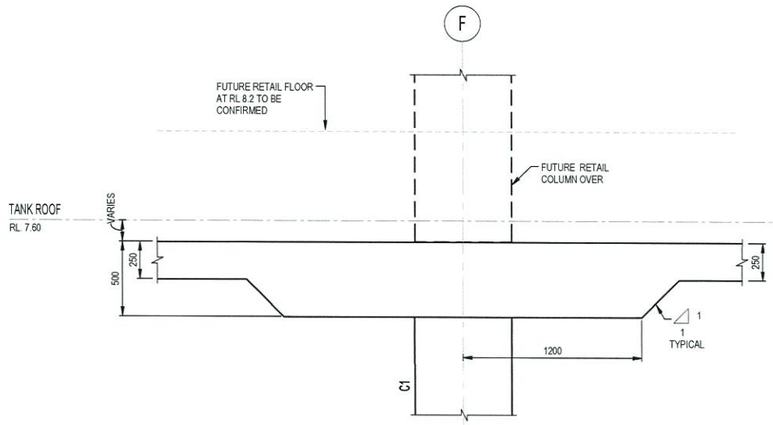
Cardno (QLD) Pty. Ltd. ABN 57 051 074 992
LEVEL 11, 515 St Paul's Terrace
Fortitude Valley, QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722
Email: brisbane@cardno.com.au Web: www.cardno.com.au

		Date
Drawn	KA	
Checked	KA	
Designed	DRV	
Verified	MVH	
Approved	MVH	

Client: RNA & LEND LEASE
Project: RNA SHOWGROUND REDEVELOPMENT STORMWATER DETENTION TANK
Title: DETENTION TANK ROOF SLAB SECTIONS & DETAILS SHEET 2
Status: PRELIMINARY — NOT TO BE USED FOR CONSTRUCTION PURPOSES
Datum | Date | Scale | Size: A1
Drawing Number: 161163-050-DD-C-301-6072
Revision: B

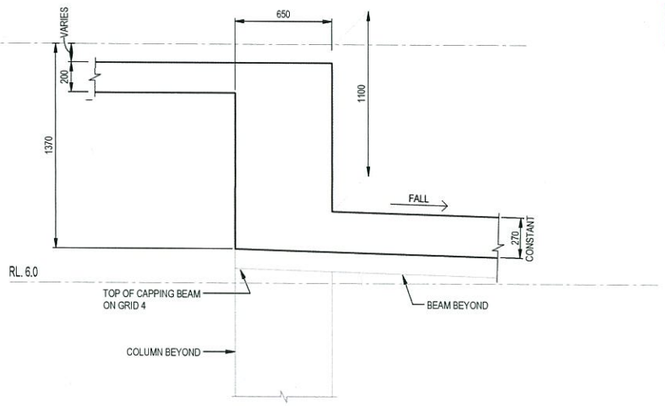
NOTES

1. FOR ALL RELEVANT CONSTRUCTION NOTES REFER DRAWING 6005
2. REFER TO EARTHWORKS SPECIFICATION FOR ALL REQUIREMENTS IN RELATION TO EARTHWORKS AND SHORING.

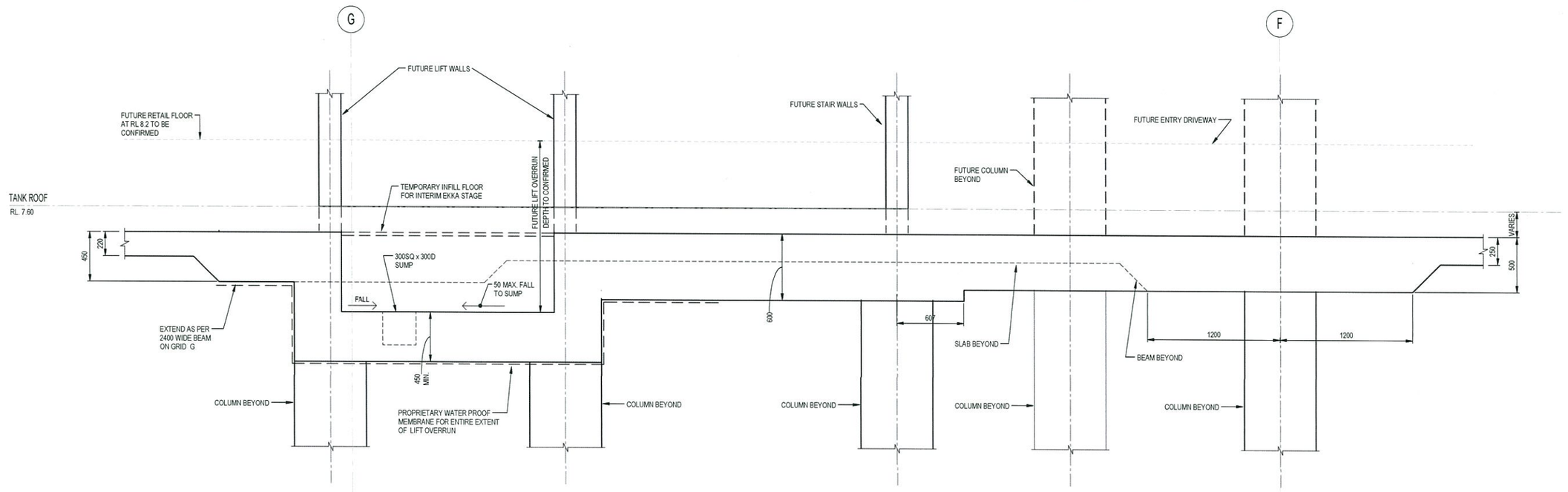


TYPICAL 2400 WIDE BAND BEAM

SECTION 10 / 1 : 20 / 6070



SECTION 11 / 1 : 20 / 6070



SECTION 12 / 1 : 20 / 6070

Rev	Date		Des.	Ver.	Appr.
B	31.07.2015	EDQ SUBMISSION			
A	13.07.2015	PRELIMINARY ISSUE			

Cardno
Shaping the Future
Cardno (QLD) Pty. Ltd. ABN 57 051 074 992
LEVEL 11, 515 St Paul's Terrace
Fortitude Valley, QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722
Email: brisbane@cardno.com.au Web: www.cardno.com.au

		Date
Drawn	KA	
Checked	KA	
Designed	DRV	
Verified	MVH	
Approved	MVH	

Client: RNA & LEND LEASE

Project: RNA SHOWGROUND REDEVELOPMENT
STORMWATER DETENTION TANK

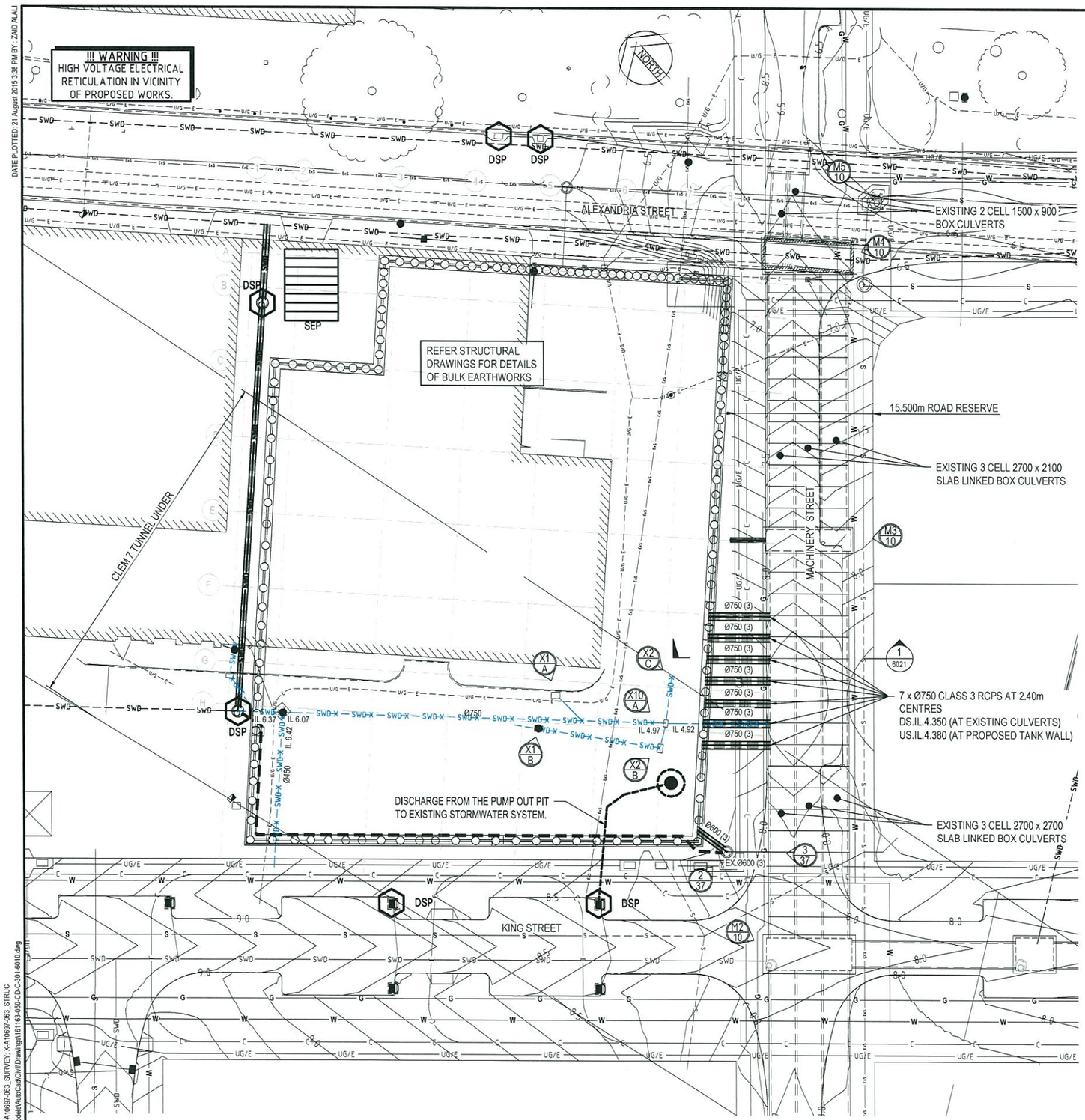
Title: DETENTION TANK ROOF SLAB SECTIONS & DETAILS SHEET 3

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum | Date | Scale | Size: A1

Drawing Number: 161163-050-DD-C-301-6073

Revision: B



SEDIMENT AND EROSION CONTROL NOTES

1. CONSTRUCTION IS TO BE PROGRAMMED TO PROVIDE INSTALLATION OF PERIMETER LANDSCAPING/SURFACE TREATMENTS AS EARLY AS PRACTICAL.
2. THE CONTRACTOR IS RESPONSIBLE FOR PROGRAMING WORKS SO THAT SATISFACTORY EROSION AND SEDIMENT CONTROL DEVICES ARE IN PLACE AND MAINTAINED AT ALL TIMES.
3. A PHOTOGRAPHIC RECORD OF SEDIMENT AND EROSION CONTROL DEVICES AND THE IMMEDIATE DOWNSTREAM STORMWATER SYSTEM, IS TO BE CARRIED OUT ON A FORTNIGHTLY CYCLE AND AFTER EACH MAJOR STORM EVENT. CARRY OUT CORRECTIVE AND PREVENTATIVE ACTION AS REQUIRED.
4. PUBLIC & WORKPLACE SAFETY ISSUES MUST BE CONSIDERED AND MONITORED FOR EACH DEVICE TO THE SATISFACTION OF THE SUPERINTENDENT.
5. WOVEN FABRICS ARE TO BE USED FOR SEDIMENT FENCE FILTER FABRIC.
6. SEDIMENTATION MANAGEMENT DEVICES SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES AND MAINTAINED AT A SUITABLE LEVEL/ CONDITION THROUGHOUT CONSTRUCTION. SEDIMENT FENCES ARE TO BE CLEANED OUT WHEN CAPACITY IS REDUCED BY 30%. DRAINAGE STRUCTURE PROTECTION IS TO BE CLEANED FOLLOWING EACH SIGNIFICANT RUNOFF PRODUCING STORM.
7. THE SITE ACCESS POINT AND WASH DOWN AREA IS TO BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. ACCESS TO AND FROM THE SITE IS TO BE VIA THE SHAKEDOWN FACILITY ONLY. ALL VEHICLES ARE TO BE WASHED DOWN PRIOR TO LEAVING THE SITE.
8. THE CONTRACTOR SHALL PROVIDE TEMPORARY DRAINAGE CONTROL TO DIVERT FLOW FROM UNDISTURBED AREAS AROUND DISTURBED AREAS AND DIRECT FLOW FROM DISTURBED AREAS TOWARD CONTROL DEVICES.
9. CLEAN PONDED RAINFALL SHALL BE PUMPED TO A DOWNSTREAM STORMWATER SYSTEM.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSPECTION AND MAINTENANCE OF SEDIMENT AND EROSION CONTROL DEVICES. ALL DEVICES ARE TO BE INSPECTED AT LEAST WEEKLY AND AFTER SIGNIFICANT RUNOFF PRODUCING STORMS.
11. IF EROSION AND SEDIMENT CONTROL DEVICES HAVE BEEN FOUND TO BE DEFICIENT OR FAILED IN SERVICE DUE TO UNFORESEEN CIRCUMSTANCES, CORRECTIVE ACTION IS TO BE UNDERTAKEN BY THE CONTRACTOR IMMEDIATELY WHICH MAY INCLUDE AMENDMENTS/ADDITIONS TO THE ORIGINAL EROSION CONTROL PLANS. SUCH ADDITIONS OR AMENDMENTS ARE TO BE APPROVED BY THE SUPERINTENDENT.
12. STRAW BALES USED IN SEDIMENT DEVICES ARE TO BE REPLACED AFTER A MAXIMUM SERVICE PERIOD OF 6 WEEKS.
13. SEDIMENTATION MANAGEMENT DEVICES ARE TO BE MAINTAINED BY THE CONTRACTOR, AS NOTED AND DETAILED, UNTIL APPROVAL HAS BEEN GRANTED BY THE ENGINEER FOR THEIR REMOVAL. THE CONTRACTOR IS TO REMOVE AND DISPOSE OF THESE DEVICES OFF SITE.
14. TREE PROTECTION IS INDICATIVE ONLY. TREE PROTECTION TO BE DIRECTED BY SUPERINTENDENT ON SITE.
15. THE CONTRACTOR IS RESPONSIBLE FOR RELOCATING SEDIMENT AND EROSION DEVICES/ FENCES TO ACCOMMODATE EARTHWORKS AS AND WHEN REQUIRED. THE LOCATION OF THE SEDIMENT AND EROSION CONTROL DEVICES ARE INDICATIVE ONLY. IT IS THE CONTRACTORS RESPONSIBILITY TO SPECIFICALLY LOCATE, THEN ENSURE SEDIMENT IS NOT WASHED DOWNSTREAM.
16. EROSION CONTROL MATTING IS TO BE INSTALLED, REMOVED AND REINSTATED AS REQUIRED TO ENSURE THAT BATTERS ARE PROTECTED AT ALL TIMES WHEN THEY ARE NOT BEING WORKED ON.
17. ESC DRAWINGS TO BE READ IN CONJUNCTION WITH EROSION AND SEDIMENT CONTROL PLAN REPORT PREPARED BY CARDNO (QLD) PTY LTD.
18. INTERIM ESC MEASURES ARE TO BE DESIGNED AND INSTALLED BY THE CONTRACTOR AS REQUIRED.

ALL WORKS ON THE SITE SHALL BE UNDERTAKEN IN ACCORDANCE WITH RECOMMENDATIONS MADE IN BOTH THE ENVIRONMENTAL MANAGEMENT PLAN AND THE ACID SULPHATE SOIL MANAGEMENT PLAN PREPARED BY GOLDER ASSOCIATES PTY LTD

CONTRACTOR TO CONFIRM LOCATION OF EXISTING SERVICES PRIOR TO COMMENCEMENT OF WORKS

LEGEND

SEDIMENT CONTROL

- SF — SEDIMENT FENCE
- SFW — SEDIMENT FENCE WEIR
- DC — DISCHARGE CHUTE
- DSP — DRAINAGE STRUCTURE PROTECTION
- SEP — STABILISED ENTRY/EXIT POINT
- EXISTING TREE TO REMAIN
- PROPOSED PUMP OUT PIT LOCATE PUMP OUT LINE TO SUIT SITE ACTIVITY REFER DRG 6011 FOR DETAIL.

PLANS AND DOCUMENTS referred to in the PDA APPROVAL
14 OCT 2015
MEDQ

0 5 10 15 20 25m
SCALE: 1:250 @A1

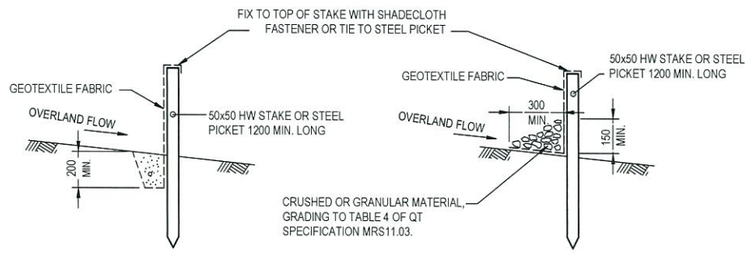
Rev.	Date	Description	Des.	Verif.	Appd.
C	21/08/2015	EDQ SUBMISSION	ZA	DS	MH
B	31/07/2015	EDQ SUBMISSION	ZA	DS	MH
A	13/07/2015	PRELIMINARY ISSUE	ZA	DS	MH

Cardno®
Shaping the Future
Cardno (Qld) Pty Ltd | ABN 57 051 074 992
Level 11, 515 St Paul's Terrace
Fortitude Valley, QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722
Web: www.cardno.com.au

Drawn ZA	Date JULY 2015
Checked DS	Date JULY 2015
Designed ZA	Date JULY 2015
Verified	Date
Approved	

Client: RNA & LENDLEASE
Project: RNA SHOWGROUND REDEVELOPMENT STORMWATER DETENTION TANK
Title: EROSION AND SEDIMENT CONTROL LAYOUT PLAN
Status: PRELIMINARY NOT TO BE USED FOR CONSTRUCTION PURPOSES
DATUM: A.H.D. | Scale: AS SHOWN | Size: A1
Drawing Number: 161163-050-CD-C-301-6010 | Revision: C

DATE PLOTTED: 21 August 2015 3:38 PM BY - ZAID ALALI
XREFs: X-A10697-063_CIVIL_DESIGN; X-A10697-063_SURVEY; X-A10697-063_STRUC
CAD File: K:\A10697\Phase 063_Cad & Models\AutoCad\Civil\Drawings\161163-050-CD-C-301-6010.dwg

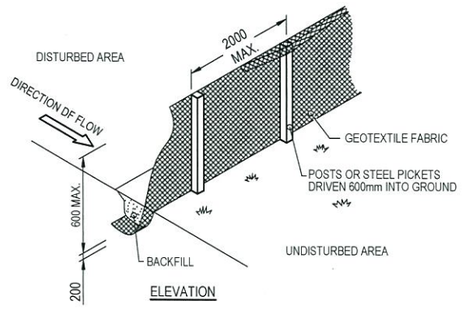


ALTERNATIVE - 1 ALTERNATIVE - 2

SECTION

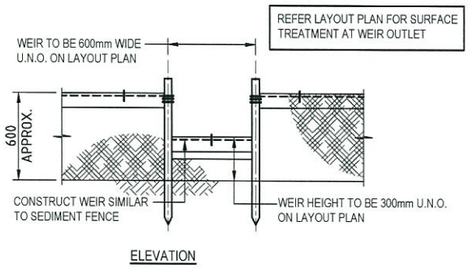
SEDIMENT FENCE DETAILS

SF — DENOTES SEDIMENT FENCE, REFER LAYOUT PLAN FOR LOCATION AND EXTENTS.



ELEVATION

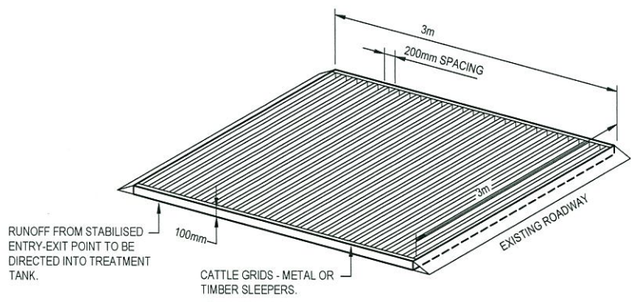
FOR EROSION & SEDIMENT CONTROL NOTES & LEGEND, REFER TO DRG 161163-050-CD-C-301-C6010.



ELEVATION

SEDIMENT FENCE WEIR

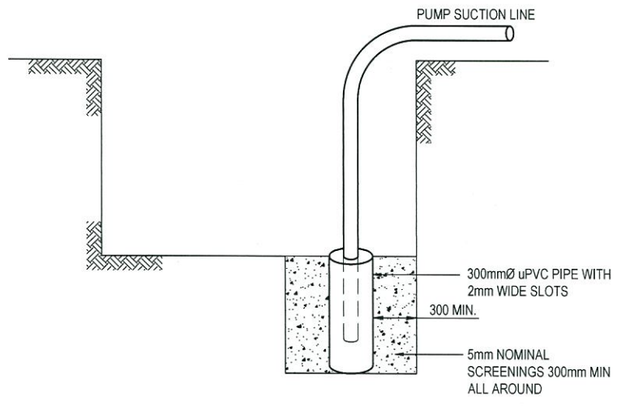
SFW — DENOTES SEDIMENT FENCE WEIR, REFER LAYOUT PLAN FOR LOCATION AND EXTENTS.



STABILISED ENTRY/EXIT POINT - TYPE B

NTS OR APPROVED EQUIVALENT

SEP — DENOTES STABILISED ENTRY/EXIT POINT, REFER LAYOUT PLAN FOR LOCATIONS.



SEDIMENT PUMP OUT PIT

N.T.S.

Rev.	Date	Description	Des.	Verif.	Appd
B	31/07/2015	EDQ SUBMISSION	ZA	DS	MH
A	13/07/2015	PRELIMINARY ISSUE	ZA	DS	MH

Cardno
Shaping the Future
Cardno (Qld) Pty Ltd | ABN 57 051 074 992
Level 11, 515 St Paul's Terrace
Fortitude Valley, QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722
Web: www.cardno.com.au

Drawn	ZA	Date JULY 2015
Checked	DS	Date JULY 2015
Designed	ZA	Date JULY 2015
Verified		Date
Approved		

Client: RNA & LENDLEASE

Project: RNA SHOWGROUND REDEVELOPMENT
STORMWATER DETENTION TANK

Title: EROSION AND SEDIMENT CONTROL DETAILS SHEET 1

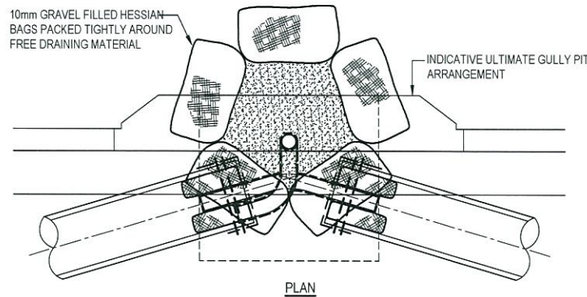
Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

DATUM	Scale	Size
A.H.D.	N.T.S	A1

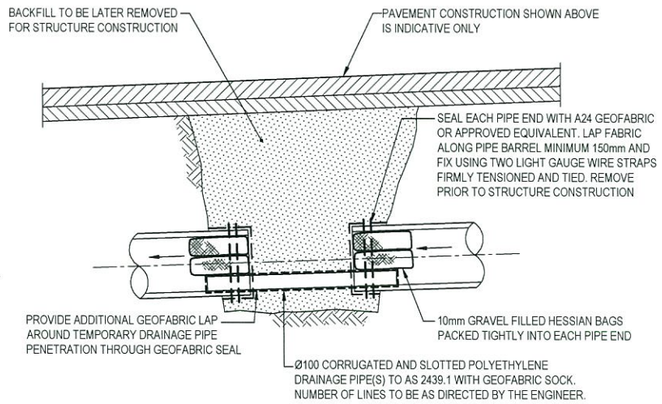
Drawing Number: 161163-050-CD-C-301-6011

Revision: B

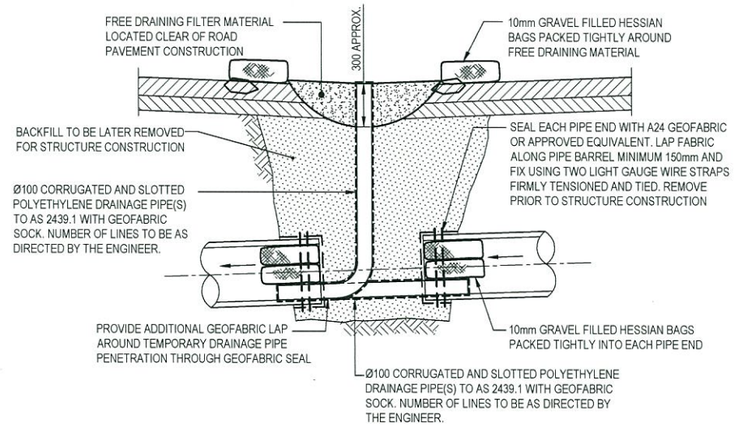
FOR EROSION & SEDIMENT CONTROL NOTES & LEGEND, REFER TO DRG 161163-050-CD-C-301-C6010.



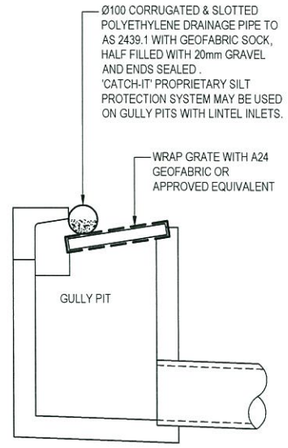
PLAN



ON GRADE GULLY PIT



SAG GULLY PIT

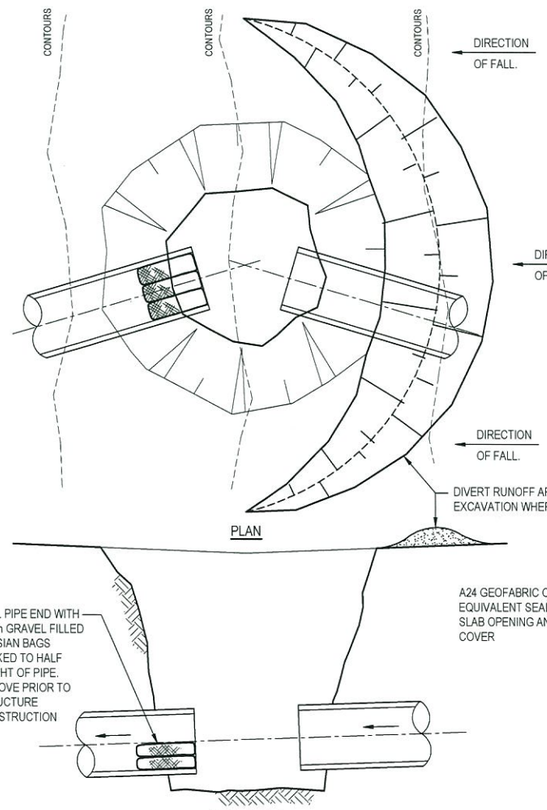


STAGE 1
EXCAVATION, PIPE INSTALLATION AND INTERIM BACKFILLING

STAGE 2
STRUCTURE COMPLETE

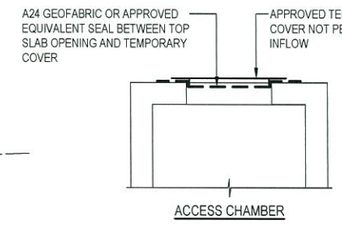
ROADWAY GULLY PIT

DSP — DENOTES DRAINAGE STRUCTURE PROTECTION, REFER LAYOUT PLAN FOR LOCATION & EXTENTS.

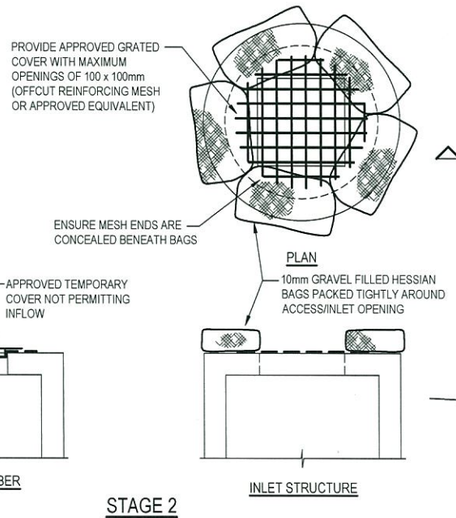


PLAN

STAGE 1
EXCAVATION AND PIPE INSTALLATION



ACCESS CHAMBER



PLAN

PLAN

INLET STRUCTURE

INLET STRUCTURE

STAGE 2
STRUCTURE COMPLETE UP TO TOP SLAB

STAGE 3
STRUCTURE COMPLETE

ACCESS CHAMBER / INLET STRUCTURE

DSP — DENOTES DRAINAGE STRUCTURE PROTECTION, REFER LAYOUT PLAN FOR LOCATION & EXTENTS.

PLANS AND DOCUMENTS referred to in the PDA APPROVAL
14 OCT 2015
MEDQ

Rev.	Date	Description	Des.	Verif.	Appd.
B	31/07/2015	EDQ SUBMISSION	ZA	DS	MH
A	13/07/2015	PRELIMINARY ISSUE	ZA	DS	MH

Cardno
Shaping the Future
Cardno (Qld) Pty Ltd | ABN 57 051 074 992
Level 11, 515 St Paul's Terrace
Fortitude Valley, QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722
Web: www.cardno.com.au

Drawn	ZA	Date JULY 2015
Checked	DS	Date JULY 2015
Designed	ZA	Date JULY 2015
Verified		Date
Approved		

Client: RNA & LENDLEASE

Project: RNA SHOWGROUND REDEVELOPMENT
STORMWATER DETENTION TANK

Title: EROSION AND SEDIMENT CONTROL DETAILS SHEET 2

Status: PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

DATUM	Scale	Size
A.H.D.	N.T.S	A1

Drawing Number: 161163-050-CD-C-301-6012

Revision: B