

1. GENERAL NOTES - DESIGN AND CONSTRUCTION:

- 1.1 ALL DESIGNS, MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATION, THE LATEST EDITION OF THE RELEVANT AUSTRALIAN STANDARDS, BUILDING CODES OF AUSTRALIA, SA WATER STANDARDS AND TECHNICAL GUIDES.
- 1.2 THE STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATION AND OTHER ASSOCIATED DRAWINGS, AND WITH SUCH OTHER WRITTEN INSTRUCTION AS MAY BE ISSUED BY THE PROJECT MANAGER DURING THE COURSE OF THE DESIGN AND CONSTRUCTION CONTRACT.
- 1.3 ALL LEVELS, DIMENSIONS AND SETOUT ON REFERENCE DRAWINGS SHALL BE CONFIRMED ON SITE PRIOR TO DESIGN AND CONSTRUCTION.
- 1.4 ACCESS HATCHES, SERVICE PLATFORMS AND LADDERS/STAIRS SHALL BE IN ACCORDANCE WITH SA WATER TECHNICAL STANDARD TS 150 AND AS 1657.
- 1.5 SECURITY LOCKS AND SECURITY DOORS SHALL BE INSTALLED IN ACCORDANCE WITH SA WATER TECHNICAL STANDARD TS 107.
- 1.6 SEAL AROUND THE HATCH WITH APPROPRIATE FLASHINGS, CLOSED CELL POLYETHYLENE FOAM STRIP OR SIMILAR.
- 1.7 THE CONTRACTOR SHALL ARRANGE AND DOCUMENT A SAFETY IN DESIGN WORKSHOP WITH ALL STAKEHOLDERS.

2. DESIGN NOTES:

- DESIGN LIFE:
- ROOF STRUCTURE 80 YEARS
 - ROOF SHEETING 40 YEARS
 - ACCESS INFRASTRUCTURE (LADDERS, STAIRS, PLATFORMS, HATCHES) 40 YEARS

LIFE TO FIRST MAINTENANCE: 25+ YEARS

DESIGN LOADS

- 2.1 DEAD LOADS: MATERIAL SELF WEIGHT SHALL BE IN ACCORDANCE WITH AS/NZS 1170.1 AND MANUFACTURER'S DATA SHEETS.
- 2.2 LIVE LOADS SHALL BE IN ACCORDANCE WITH AS/NZS 1170.1 AS 1657 AND TS 150 EXCEPT AS VARIED BELOW:
- (a) SLIDING HATCH COVER SHEET: 1.0 kPa
- (b) SERVICE PLATFORMS, LADDER/STAIR LANDINGS AND STAIRS: TO AS 1657
- (c) ROOF WALKWAY/ACCESS WALKWAY: 0.25 kPa
- (d) ACCESS BRIDGE: 4.0 kPa
- (e) CENTRAL ANCHOR: 21 KN TO AS/NZS 1891.4
- (f) DAVIT ARM LOADING SHALL BE AS SPECIFIED BY SA WATER STAKEHOLDERS, REFER TO SITE PLAN AND SPECIFICATION.
- (g) DIVER LADDER: 205 Kg WITH ULF OF 1.5.
- 2.3 WIND LOADS SHALL BE IN ACCORDANCE WITH AS/NZS 1170.2
- 2.4 LOAD COMBINATIONS SHALL BE IN ACCORDANCE WITH AS/NZS 1170.0

3. CONSTRUCTION NOTES:

- 3.1 SHOP DRAWINGS SHALL BE PREPARED FOR ALL WORKS, UNLESS SPECIFIED OTHERWISE IN CONTRACT DOCUMENTS.
- 3.2 PROPER SAFETY PRECAUTIONS SHALL BE TAKEN ON SITE TO AVOID INJURY TO PEOPLE. ANY UNATTENDED HOLES/EXCAVATIONS SHALL BE COVERED OR FENCED AT ALL TIMES.
- 3.3 ALL STRUCTURES SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PARTS SHALL BE OVER STRESSED.
- 3.4 REMOVE EXISTING ROOF SHEETING, HATCH SUPPORT BEAMS AND PURLINS AS APPROPRIATE.
- 3.4.1 REUSE OR REPLACE ROOF SHEETING TO MATCH EXISTING ROOF SHEETING.
- 3.4.2 REPLACE HATCH SUPPORT BEAMS AND/OR PURLINS AS APPROPRIATE.
- 3.4.3 FIX ROOF SHEETING WITH NEW HOOK BOLTS, TYPICAL.
- 3.5 CLEAN UP AREA AFTER COMPLETING WORK. REMOVE ALL WASTE FROM SITE.
- 3.6 REMOVE ALL BURRS AND SHARP EDGES.
- 3.7 ALL PARTS SHALL BE MARKED WITH WEATHER PROOF TAGS STATING THEIR ITEM AND DRAWING NUMBER.
- 3.8 MARK UP DRAWINGS WITH AS CONSTRUCTED INFORMATION AND RETURN TO PROJECT MANAGER ON COMPLETION OF WORK.
- 3.9 ASSET MUST REMAIN IN SERVICE DURING CONSTRUCTION UNLESS ARRANGEMENTS HAVE BEEN MADE WITH OPERATIONS CONTROL GROUP.

4. STRUCTURAL MEMBER LIST

STRUCTURAL MEMBER LIST		
MEMBER MARK	COMMENTS	REFERENCE DRAWING
AB1	ALUMINIUM GUIDE RAIL SUPPORT BEAM	5002-00001-05/07/09
AB2	ALUMINIUM SLIDING HATCH FRAME	5002-00001-14
AB3	ALUMINIUM SAMPLING HATCH SUPPORT BEAM	5002-00001-14
AB4	ALUMINIUM SAMPLING HATCH SUPPORT BEAM	5002-00001-14
SB1	STEEL/ALUMINIUM HATCH SUPPORT BEAM BELOW ROOF	5002-00001-06/08/10/13
SB2	STEEL/ALUMINIUM HATCH SUPPORT BEAM BELOW ROOF	5002-00001-06/08/10/13
SB3	STEEL/ALUMINIUM HATCH SUPPORT BEAM BELOW ROOF	5002-00001-06/08/10/13
SB4	STEEL/ALUMINIUM HATCH SUPPORT BEAM BELOW ROOF	5002-00001-06/08/10/13
SB5	STEEL/ALUMINIUM SERVICE PLATFORM SUPPORT BEAM ABOVE ROOF	5002-00001-05/07/09/13
SB6	STEEL/ALUMINIUM SERVICE PLATFORM SUPPORT BEAM ABOVE ROOF	5002-00001-05/07/09/13
SB7	STEEL/ALUMINIUM LANDING SUPPORT BEAM	5002-00001-11/13
SBR1	STEEL/ALUMINIUM KNEE BRACE TO TANK WALL	5002-00001-10/11/13/14
SP1	STEEL ROOF PURLIN TO REPLACE EXISTING	5002-00001-10

5. LEGEND

- 5.1 STRUCTURAL MEMBER MARKINGS SHOWN ON ALL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ABBREVIATIONS BELOW:
- AB1 = ALUMINIUM BEAM 1
- SB2 = STRUCTURAL BEAM 2
- SP = STEEL ROOF PURLIN
- SCL1 = CLEAT CONNECTION (STEEL/ALUMINIUM)

REVISION PANEL				
REV	DATE	DRN	DETAILS	APR'D
1	06/06/16	SS	ISSUED FOR USE	H.H.

6. MATERIAL SELECTION:

- 6.1 A CONSISTENT APPROACH SHALL BE TAKEN DURING MATERIAL SELECTION. AS AN EXAMPLE, ALL COMPONENTS OF STAIR INCLUDING ATTACHED HANDRAIL, KICK PLATE, STANCHION, KNEE BRACE AND LANDING SHALL BE OF THE SAME MATERIAL (I.E. ONLY STEEL OR ALUMINIUM) UNLESS OTHERWISE NOTED IN DRAWINGS/SPECIFICATION.
- 6.2 MATERIAL SELECTION FOR STRUCTURAL COMPONENTS SHALL BE AS FOLLOWS.

COMPONENTS	MATERIAL
(a) SLIDING HATCH INCLUDING ATTACHED HANDRAIL, KICK PLATE, STANCHION, ROOFING SHEET, WHEELS GUIDES, GUIDE RAILS	ALUMINIUM
(b) SERVICE PLATFORM INCLUDING ATTACHED HANDRAIL, KICK PLATE, STANCHION, GRATING, SELF CLOSING GATE	STEEL OR ALUMINIUM
(c) SUPPORT BEAMS, KNEE BRACES AND CLEATS ABOVE & BELOW ROOF	STEEL OR ALUMINIUM
(d) STAIRS INCLUDING ATTACHED HANDRAIL, KICK PLATE, STANCHION, KNEE BRACE, LANDING AND SECURITY MESH	STEEL OR ALUMINIUM
(e) LADDER SECURITY DOOR	ALUMINIUM
(f) STAIR SECURITY DOOR	ALUMINIUM
(g) LADDER RUNG/STEP INCLUDING ATTACHED CAGE, PLATFORM, HANDRAIL, KICK PLATE, STANCHION, KNEE BRACE AND LANDING	STEEL OR ALUMINIUM
(h) ROOF WALKWAY	ALUMINIUM
(i) ACCESS BRIDGE	STEEL OR ALUMINIUM

7. STRUCTURAL STEEL NOTES:

- 7.1 ALL DESIGN, WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 4100, AS 4600, SA WATER TECHNICAL STANDARDS AND SPECIFICATION.
- 7.2 ALL STRUCTURAL STEEL SHALL BE GRADE 300 HOT DIP GALVANISED UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- 7.3 ALL STEEL WELDS SHALL COMPLY WITH AS/NZS 1554 AND SA WATER TS 30a AS APPROPRIATE.
- 7.4 STRUCTURAL STEEL PRODUCTS SHALL BE AS LISTED BELOW OR APPROVED EQUIVALENT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

STEEL ELEMENT	PRODUCT REFERENCE
(a) HOT DIP GALVANISED HANDRAIL, KICK PLATE AND STANCHION	MONOWILLS
(b) HOT DIP GALVANIZED GRATING	WEBFORGE

- 7.5 RUNG LADDER SHALL HAVE WELDED CONNECTIONS ONLY. NO BOLTS PERMITTED.

8. STRUCTURAL ALUMINIUM NOTES:

- 8.1 ALL DESIGN, WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS1664 AND SPECIFICATION.
- 8.2 ALL STRUCTURAL ALUMINIUM ALLOYS SHALL BE OF GRADE LISTED BELOW;

ALUMINIUM ELEMENT	ALUMINIUM GRADE/TEMPER
(a) EXTRUSIONS (STRUCTURAL MEMBERS/STAIRS)	6082/T6
(b) CLEAT PLATES	6061 OR 6082/T6
(c) WALKWAYS	REFER 9.4 (f) AND MANUFACTURER'S TECHNICAL DATA SHEET

- 8.3 ALL ALUMINIUM WELDS SHALL COMPLY WITH AS/NZS1665.
- 8.4 STRUCTURAL ALUMINIUM PRODUCTS SHALL BE AS LISTED BELOW OR EQUIVALENT IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

ALUMINIUM ELEMENT	PRODUCT REFERENCE
(a) ALUMINIUM HANDRAIL, KICK PLATE AND STANCHION FIXED TO SLIDING HATCH	MONOWILLS OR JURALCO HANDRAIL
(b) ALUMINIUM SLIDING HATCH COVER SHEET	CHEQUER PLATE
(c) ALUMINIUM ACCESS STAIR, LANDING, GRATING	JURALCO STAIRWAY SYSTEM
(d) ALUMINIUM ACCESS STAIR HANDRAIL	JURALCO HANDRAIL SYSTEM
(e) ALUMINIUM EXTRUSIONS	ONE STEEL
(f) ALUMINIUM ROOF WALKWAY	JURALCO WALKMASTER ROOF WALKWAY SYSTEM
(g) ALUMINIUM SERVICE PLATFORM (ALTERNATIVE OPTION NOT SHOWN ON THE DRAWING)	JURALCO

- 8.5 SUPPORT OF ALUMINIUM HANDRAIL ON 'Y' CRADLES OVER STANCHIONS IS NOT PERMITTED UNLESS HANDRAIL IS FULLY WELDED TO CRADLE. BRACKETS FULLY ENCLOSING HANDRAIL AT STANCHION ARE PREFERRED.
- 8.6 ALUMINIUM LADDER RUNGS SHALL BE SLIP-RESISTANT SOLID SECTIONS, SECURELY FIXED TO THE STILES BY DRILLING THROUGH AND WELDING (NO BOLTS PERMITTED).
- 8.7 ALUMINIUM MEMBERS IN CONTACT WITH CONCRETE SHALL BE INSULATED.
- 8.8 ALUMINIUM SLIDING HATCH SHALL BE LOCKABLE IN THE CLOSED POSITION. PROVIDE APPROPRIATE LOCKS TO COMPLY WITH SA WATER SECURITY STANDARD TS107.

9. BOLT CONNECTION NOTES:

- 9.1 BOLTS FOR CONNECTIONS SHALL BE AS FOLLOWS:

MATERIAL/FINISHES/LOCATION OF ELEMENTS CONNECTED	BOLT DESCRIPTION
(a) HOT DIP GALVANIZED ABOVE ROOF/OUTSIDE TANK	HOT DIP GALVANIZED GRADE 8.8/S
(b) STRUCTURAL ALUMINIUM ABOVE ROOF/OUTSIDE TANK	STAINLESS STEEL GRADE 316 WITH APPROPRIATE INSULATION
(c) HOT DIP GALVANIZED BELOW ROOF (INSIDE TANK)	STAINLESS STEEL GRADE 316 WITH APPROPRIATE INSULATION
(d) STRUCTURAL ALUMINIUM BELOW ROOF (INSIDE TANK)	STAINLESS STEEL GRADE 316 WITH APPROPRIATE INSULATION
(e) CHEMICAL ANCHORS	STAINLESS STEEL GRADE 316 WITH APPROPRIATE INSULATION

- 9.2 WHERE BOLTS ARE A DISSIMILAR METAL TO THE CONNECTING ELEMENT/S FASTENERS SHALL BE ISOLATED USING PLASTIC/NEOPRENE WASHERS OR TOP HATS.

10. CORROSION PROTECTION NOTES:

- 10.1 DESIGN DETAILS SHALL INCLUDE PROVEN CORROSION PROTECTION SCHEME WHERE DISSIMILAR METALS/MATERIALS ARE IN CONTACT.
- 10.2 DESIGN AND CONSTRUCTION DETAILS FOR CORROSION PROTECTION/INSULATION MATERIALS SHALL COMPLY WITH STRENGTH AND DURABILITY REQUIREMENTS DURING DESIGN LIFE.
- 10.3 HOT-DIP GALVANISING (HDG) SHALL BE IN ACCORDANCE WITH AS/NZS4680 AND AS 4791 AS APPROPRIATE.

11. CHEMICAL ANCHOR NOTES:

- 11.1 CHEMICAL ANCHOR BOLTS SHALL REFER TO BOLT CONNECTION NOTES ON THIS DRAWING.
- 11.2 CONCRETE WALL OF TANK SHALL BE INSPECTED TO ENSURE GOOD QUALITY CONCRETE PRIOR TO FIXING CHEMICAL ANCHORS. IF CONCRETE SPALLING IS OBSERVED, THEN CARRY OUT REPAIRS AND/OR LOCAL WALL STRENGTHENING PRIOR TO FIXING OF ANCHORS.

12. ROOF HATCH NOTES:

- 12.1 DOUBLE WIDTH HATCHES SHALL BE LOCATED TO FIT BETWEEN PURLINS TO ENABLE FULL CLEAR SPAN

13. CONCRETE NOTES:

- 13.1 ALL DESIGN, WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600 AND SPECIFICATION.

14. FOOTING/GROUND SLAB NOTES:

- 14.1 ALL SLABS ON GROUND SHALL BE LAID ON A 0.2mm THICK POLYETHYLENE SHEET UNLESS NOTED OTHERWISE.
- 14.2 STAIR/LADDER LANDING SLAB AT GROUND LEVEL SHALL BE FOUND ON COMPACTED SOIL.

15. ROOF SHEETING:

- 15.1 WHERE REQUIRED, ALL NEW ROOF SHEETING SHALL MATCH EXISTING AND SHALL COMPLY WITH AS 1562.1.
- 15.2 PRIOR TO REUSE OF EXISTING ROOF SHEETING, THE CONTRACTOR SHALL CONDUCT CONDITION ASSESSMENT FOR STRENGTH & DURABILITY.

THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH TS 0720 "ACCESS INFRASTRUCTURE FOR WATER TANKS".

NOT FOR CONSTRUCTION

REVISION PANEL					DESIGN PANEL			SA WATER TYPICAL DRAWING		A1		1
REV	DATE	DRN	DETAILS	APR'D	DESIGNED	JUN 2016	AUTHORISED	07/06/2016	SA WATER ABOVE GROUND TANK SAFE ACCESS		SMT SIZE	REVISION
									GENERAL NOTES		TOTAL SHEETS: 2 OF 16	
											SUPERSEDES:	
											DRAWING NUMBER	
											5007-00001-02	
											YEAR	SHEET