Appendix B – Pipeline and Outfall Design
TASWATER CARRICK W.W.T.P.
OUTFALL PIPELINE
32-17221

GENERAL NOTES FOR PIPEWORK

1. TAKE MEASURES TO PREVENT THERMAL EXPANSION/CONTRACTION OF THE PIPELINE DURING INSTALLATION. FOLLOW SUPPLIERS’ GUIDELINES TO PREVENT POST INSTALLATION FAILURES CAUSED BY THERMAL EXPANSION/CONTRACTION.

2. PIPELINE AUTHORITY MARKER POSTS TO BE INSTALLED AT ALL CHANGES OF DIRECTION & AT JUNCTIONS. REFER WORK STANDARD (WAT-1300). MARKER POSTS TO BE “DURA-POST REG. DESIGN NO. 12320” LABEL TO BE ADVISED.

3. ALL SUBSURFACE BOLTS AND NUTS TO BE GRADE 316 CLASS 50 (MIN) STAINLESS STEEL. ENSURE THREADS ARE CLEAN & FREE OF GRIT. APPLY AN ANTI-SEIZE COMPOUND LIBERALLY TO ALL THREADS.

4. INSTALL LOOSE POLYETHYLENE SLEEVING EXTERNAL PROTECTION TO ALL DI PIPES AND FITTINGS INSTALLED BELOW GROUND.

5. INSULATE ALL DISSIMILAR METALS.

6. CONSIDER WORK UNDER THE CONTRACT TO WITHIN THE ROAD RESERVATION, LIMITS OF SITE OR EASEMENTS SHOWN ON THE DRAWINGS.

7. SURVEY PROVIDER BY:
   BULLOOG CONULTING
   281 CHARLES STREET, LAUNCESTON, TAS 7250
   PH: 03 6332 3500
   (QAD) AT SPN (4234)
   E-SERIES 12", N 500300; R1, 142, 144
   THE HEIGHT DICTION IS AND IS (TAS)

8. ALL PIPEWORK SETOUT TO BE CARRIED OUT BY A LICENSED SURVEYOR.

9. ALL PE BENDS TO BE THE SAME PN RATING OR HIGHER AS ADJACENT PE PIPE.

10. ROTATE HORIZONTAL BENDS TO PROVIDE VERTICAL DEFLECTION AS REQUIRED.

11. TRACKER MARKER TAPE TO BE INSTALLED OVER ALL PIPELINES. TAPE TO BE INSTALLED BETWEEN OVERLAY MATERIAL AND REFL. MATERIAL.

12. USE “LILAC” COLOUR CODING FOR ALL REUSE PIPEWORK.

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TASWATER REFERENCE DRAWINGS

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PRELIMINARY
**Legend**

- **M** Motor
- **SLR** Pumps (Electric)
- **LSL** Level Sensor - High
- **LSM** Level Sensor - Low
- **RM** Reduced Level (AHD)
- **RL** Flow Meter
- **S** Programmable Logic Controller

**Scenario**

1. **Re-use** - Treated Effluent to Irrigation Pump
   - Value A: Opened
   - Value B: Closed
   - Value C: Measuring

2. **Outfall** - Treated Effluent to Outfall
   - Signal to Open Control Valve A & B when Level Sensor detects Effluent Storage Lagoon is Full, i.e. at TWL
   - Signal to Close Control Valves A & B when Level Sensor detects Effluent Storage Lagoon is NOT Full, i.e. below TWL

3. **Storage** - Treated Effluent to Full Storage Lagoon
   - Signal to Close Control Valves A & B when Level Sensor detects Effluent Storage Lagoon is Full, i.e. at TWL
   - Signal to NOT Measure when Level Sensor detects Effluent Storage Lagoon is NOT Full, i.e. below TWL

4. **Emergency** - Treated Effluent to Open Channel
   - ON, OFF, or Measuring
   - Measuring

**Modes of Operation**

- **Pump** Value A
- **Flowmeter 1** Value B
- **Flowmeter 2** Value C

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**TasWater**

- **Wastewater Infrastructure**
- **Carrick WWTP**
- **Outfall Pipeline**
- **Process & Instrumentation Diagram**

**Scale**

- **A1**
- **32-17221-J001**

**Note:** * indicates signatures on original issue of drawing or last revision of drawing.
DETAIL AT EFFLUENT STORAGE LAGOON

EXISTING OUTLET WAREHOUSE

AIR RELEASE VENT

EXIST. DN225 PE100 PN6.3 PIPE

EXIST. DN450 RCP OUTLET PIPE

THRU LT BLOCK

EXIST. DN200 JOHN FIG. 637 SLUICE VALVE

EXIST. DN200 JOHN FIG. 630 SLUICE VALVE

DN225 PE SWEPT BEND 90°

DN225 STUB FLANGE & S/S BACKING RING (CONFIRM EXIST. FLANGE TABLE)

133.641 132.921 133.024

NEW PIPELINE TO PASS OVER EXISTING OUTFALL PIPES (DETERMINE LEVEL OF EXISTING PIPES PRIOR TO ANY CONSTRUCTION)

PLOT DATE: 21 October 2014 - 11:15 AM

Plotted by: Jim Rogers

PRELIMINARY
1. ALL FITTINGS TO BE PN16
2. ALL VALVES AND FITTINGS TO BE THERMAL BONDED POLYMETRIC COATED, COLOUR “LILAC”
3. Fittings dimensions are approximate. Contractor shall verify dimensions prior to constructing pressure valve pit.

FITTINGS SCHEDULE

1. DN225 PE STUB FLANGE AND S/S BACKING RING
2. DN225 - DN200 DI TAPER, FL-FL ECCENTRIC
3. DN200 RESILIENT SEATED GATE VALVE, FL-FL WITH EXTN. SPINDLE
4. DN200 DI PIPE FL-FL
5. DN200 PUDDLE FLANGE
6. DN200 FLOWMETER
7. DN200 DI PIPE FL-FL
8. DN200 PE STUB FLANGE AND S/S BACKING RING
9. DN200 x 90° DI BEND, FL-FL
10. DN200 HYDRAULIC CONTROL VALVE, BERMAD 700 SERIES “Y PATTERN”
11. DN200 DI PIPE FL-FL
12. DN200 PE PIPE, FALL TO IRRIGATION WELL INLET
13. DN200 PE x 45° BRANCH LAGOONS
14. DN200 PE x 45° SWEPT BEND
15. DN100 SOC-SOC RESILIENT SEATED VALVE, COMPLETE WITH PVC PIPE SHROUD, VALVE BOX & CONCRETE SURROUND
16. DN200 PE x 45° SWEPT BEND (CONFIRM ANGLE ON SITE)

TERRAFIRMA COMPOSITE FIBREGLASS COVERS CLASS B, COMPLETE WITH H.D. GALV. FRAMES AND SUPPORT BEAMS (REFER TO DR’G 32-17221-S001)

NOTES:
1. ALL DI FITTINGS TO BE PN16
2. ALL FLANGED VALVES TO BE PN16
3. ALL VALVES AND FITTINGS TO BE THERMAL BONDED POLYMETRIC COATED, COLOUR “LILAC”

4. VALVE PIT DIMENSIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY DIMENSIONS PRIOR TO CONSTRUCTING PRESSURE VALVE PIT.

5. PVC PIPE SHROUD, VALVE BOX & CONCRETE SURROUND

6. ELECTRICAL TRAY (REFER TO ELECTRICAL ENGINEERS DRAWINGS FOR SIZE AND LOCATION)

7. CONDITIONS OF USE:
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8. DO NOT SCALE

9. All dimensions and tolerances are nominal only.

10. Cast-in electrical conduit (refer to electrical engineers drawings for size). Ensure there is fall in conduit back to this chamber.

11. PRECAST CONCRETE PIT, REFER TO DR’G 32-17221-S001 FOR STRUCTURAL DETAILS

12. PRECAST CONCRETE PIT, REFER TO ELECTRICAL ENGINEERS DRAWINGS FOR SIZE AND LOCATION

13. CONCRETE SUPPORT BLOCK

14. CAST-IN ELECTRICAL CONDUIT (REFER TO ELECTRICAL ENGINEERS DRAWINGS FOR SIZE). ENSURE THERE IS FAL IN CONDUIT BACK TO THIS CHAMBER.
PLAN OF IRRIGATION WELL

DETAIL

SCALE: 1 : 20

EXISTING IRRIGATOR

EXISTING WET WELL

EXISTING CONCRETE SLAB

EXISTING PUMP COLUMN

EXISTING INTAKE PIPE FROM RIVER

SIZE AND DEPTH TO BE CONFIRMED

SANDPAPER, ETCH PRIME AND APPLY SIKASWELL "S" BEAD

SIKASWELL "S" BEAD ALL ROUND

80mm MIN. FROM EDGE

CONCRETE PLUG

ENSURE SUFFICIENT CLEARANCE
FOR PUMP REMOVAL / INSTALLATION
(CONFIRM ON SITE)

CEMENT STABILISED SAND
BACKFILL

TasWater

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This Drawing must not be used for Construction unless signed as Approved

Date

Check

Drafting

Design

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not intended for use by third parties or for any other purpose.

Plot Date: Cad File No: 21 October 2014 - 11:17 AM
Plotted by: Jim Rogers
1. Terrafirma covers and support beams to be designed by
the manufacturer and installed to the manufacturer's
instructions. Frames and support beams to be HD. Galvanised.
2. Covers to have locking mechanism. Locking tool to be
supplied to TasWater.
3. Provide shop drawings of the covers and precast MT
prior to construction.
4. Provide evidence of structural soil with a
minimum bearing capacity of 200 kPa.
(200 kPa shall be confirmed by PWD)
5. Concrete works to be in accordance with AS3600.
6. Concrete to be reinforced to be added for precast and
HD™ elements.
7. Precoat concrete strength to be 22 MPa. Mass
concrete strength to be 20 MPa.

600mm PLASTIC COATED STEP IRONS
to comply with AS1657

3600x3400
2082
200
3200
200

MIN. 50 THICK CONC. SCREED
40 FALL TO DRAIN PIPE

TERRAFIRMA COMPOSITE FIBREGLASS COVERS
CLASS B, COMPLETE WITH H.D. GALV. FRAMES
AND SUPPORT BEAMS

NOTE: PIT DIMENSIONS ARE NOMINAL, REFER TO
NOTE 4, DR'G. 32-17221-C007

WALL PENETRATION DETAIL
NOTE: WALL PENETRATION DETAIL SHOWN
FOR CLARITY.

SIKASWELL S2 WATERSTOP
100 COVER TO INSIDE

6000 SQ. x 150 THICK
INSITU CONCRETE PLUG

PROVIDE REBATE IN WALLS TO SUIT
TERRAFIRMA SUPPORT BEAMS

SIKASWELL S2 WATERSTOP
CENTRAL TYP.
500 LAP

THIS DRAWING MUST NOT BE
USED FOR CONSTRUCTION UNLESS
SIGNED AS APPROVED

DATE
CHECK
DESIGNER
DRAWN
REVISION NO

PROJECT
CLIENT
CHECK
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A1

32-17221-S001

TasWater
**NORTH WEST ELEVATION**

EXISTING PLAN AT PLATFORM LEVEL

PROPOSED PLAN AT PLATFORM LEVEL

SOUTH WEST ELEVATION

NORTH EAST ELEVATION

**NOTES:**

1. INDICATES SPAN DIRECTION OF MESH
2. B1  65 x 65 x 5 EA, WELD TO EXISTING PFC SUPPORTS TYP.
3. REMOVE ALL EXISTING GRATING
4. REPLACE EXISTING HANDRAIL
   NEW HANDRAIL TO BE MONOWILLS TYPE, COMPLYING WITH AS 1657
5. ALL WELDS TO BE 6mm CFW (SP)
6. ALL STEELWORK TO COMPLY WITH AS 4100.
7. REMOVE EXISTING 50 x 50 x 3 EA
8. REMOVE EXISTING GRATING
9. REMOVE EXISTING GRATING
   NEW PLATFORM MESH

**SCALE:**

- 1:25
- 1:10
- 1:5

**TYPICAL SUPPORT DETAIL**

- MIN. 25 BEARING CLAMP WITH WEBFORGE CLIP SET C010MG AT 450 CRS.
- TOP FLANGE TO CLASS SA2.5 TO AS 2312, APPLY PROTECTIVE PAINT COATING PRIOR TO FITTING OF METAL MESH.
- MINIMUM PROTECTIVE COATING FOLLOWING ABRASIVE BLAST TO CLASS SA2.5, TO BE ONE COAT OF DULUX DUREMAX GPE XP TO 125 MICRONS DFT AND ONE TOP COAT OF DULUX WEATHERMAX HBR TO 80 MICRONS DFT

**LEVEL 2, 102 CAMERON ST, LAUNCESTON TAS 7250 AUSTRALIA**

**TASWATER CARRICK WWTP OUTFALL PIPELINE MODIFICATIONS TO EXISTING PUMP PLATFORM**

**PRELIMINARY**

**AS SHOWN**

100 50 200 250mm

1000 500 750mm

150

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**Plot Date: Cad File No: 21 October 2014 - 11:19 AM G:\32\17221\CADD\Drawings\32-17221-S002.dwg**

**Plotted by: Jim Rogers**

**Approved:**

**A1**

**Drawing No:** 32-17221-S002

**(a)津**

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- EXISTING PACOT IRRIGATOR PUMP SOFT STARTER TO BE REPLACED BY VSD INCLUDING CONTROLLER.
- CONTRACTOR TO PROVIDE NEW SINGLE-PHASE 50 AMP AURORA METERED SUPPLY TO NEW ELECTRICAL CHASSIS - REFER SCHEMATIC, COORDINATE ALL WORKS WITH NETWORK SUPPLY.
- VSD CONTROL, VALVE SOLENOID CONTROL & MONITORING BY NOMINATED SUBCONTRACTOR - CROMARTY'S.

RADIO TELEMETRY TO TAS WATER REPEATER AT HADSPEEN. PROVIDE NEW 5m MAST & RFI YAGI ANTENNA (YB51) TO TAS WATER REQUIREMENTS.

NEW MANUAL VALVES & POINT OF ATTACHMENT TO EXISTING SYSTEM.

NEW HYDROSTATIC LEVEL SENSOR & MOUNT, REFER TO POND SENSOR SECTION.

EXISTING CONTROL BUILDING. PROVIDE NEW RADIO TELEMETRY TO TAS WATER REPEATER AT HADSPEEN, INSTALL & COMMISSION 4-20mA INPUT FOR HYDROSTATIC LEVEL SENSOR TO MONITOR STORAGE POND LEVEL & CONTROL WATER FEED TO IRRIGATOR PUMP.

PROVIDE NEW 5m MAST & RFI YAGI ANTENNA (YB51) TO TAS WATER REQUIREMENTS.

NEW 6 CORE 1.5mm SHIELDED DEACRON IN 50mm CONDUIT.

NEW 6 CORE 1.5mm SHIELDED DEACRON IN EXISTING CONDUIT.