Government of **Western Australia**
Development Assessment Panels

Metro Outer Joint Development Assessment Panel Agenda

Meeting Date and Time: Friday, 11 June 2021; 9:30am
Meeting Number: MOJDAP/94
Meeting Venue: Via Zoom

To connect to the meeting via your computer - https://zoom.us/j/92483212247

To connect to the meeting via teleconference dial the following phone number - 08 7150 1149
Insert Meeting ID followed by the hash (#) key when prompted - 924 8321 2247

This DAP meeting will be conducted by electronic means open to the public rather than requiring attendance in person.

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Attendance

DAP Members

Mr Ian Birch (Presiding Member)
Ms Sheryl Chaffer (Deputy Presiding Member)
Mr John Taylor (A/Third Specialist Member)
Cr Mark Jones (Local Government Member, City of Rockingham)
Cr Joy Stewart (Local Government Member, City of Rockingham)

Officers in attendance

Mr John Di Rosso (Western Australian Planning Commission)
Ms Alice Brown (Western Australian Planning Commission)

Minute Secretary

Ms Megan Ventris (DAP Secretariat)

Applicants and Submitters

Mr Lewis Shugar (element)

Members of the Public / Media

Nil.

1. Opening of Meeting, Welcome and Acknowledgement

The Presiding Member declares the meeting open and acknowledges the traditional owners and pay respects to Elders past and present of the land on which the meeting is being held.

This meeting is being conducted by electronic means open to the public. Members are reminded to announce their name and title prior to speaking.

2. Apologies

Mr Jason Hick (A/Third Specialist Member)
Cr Deb Hamblin (Local Government Member, City of Rockingham)

3. Members on Leave of Absence

Nil.

4. Noting of Minutes

Signed minutes of previous meetings are available on the DAP website.

5. Declarations of Due Consideration

Any member who is not familiar with the substance of any report or other information provided for consideration at the DAP meeting must declare that fact before the meeting considers the matter.

6. Disclosure of Interests

Nil.

7. Deputations and Presentations

The Western Australian Planning Commission may be provided with the opportunity to respond to questions of the panel, as invited by the Presiding Member.

8. Form 1 – Responsible Authority Reports – DAP Applications

8.1 Lot 4000 & 4002 Baldivis Road, Baldivis

Development Description:	Wastewater pumping station
Applicant:	Element
Owner:	Water Corporation/ State of WA
Responsible Authority:	City of Rockingham
DAP File No:	DAP/21/01971

9. Form 2 – Responsible Authority Reports – DAP Amendment or Cancellation of Approval

Nil.

10. State Administrative Tribunal Applications and Supreme Court Appeals

Current SAT Applications				
File No. & SAT DR No.	**LG Name**	**Property Location**	**Application Description**	**Date Lodged**
DAP/19/01708 DR 138/2020	City of Kwinana	Lot 108 Kwinana Beach Road, Kwinana	Proposed Bulk Liquid Storage for GrainCorp Liquid Terminals	01/07/2020
DAP/01729 DR 176/2020	City of Kalamunda	Lot 130 (74) Warlingham Drive, Lesmurdie	Aged Residential Care Facility	28/8/2020
DAP/20/01764 DR 204/2020	City of Swan	Lot 780 (46) Gaston Road, Bullsbrook	Proposed Stock Feed Grain Mill	8/09/2020
DAP/20/01829 DR 001/2021	City of Swan	Lot 1 (42) Dale Road & Lot 4 (43) Yukich Close, Middle Swan	Aged care and community purpose	08/01/2021
DAP/21/01952 DR 096/2021	City of Rockingham	Lot 265 (40) Talisker Bend, Golden Bay	Mixed commercial development	14/05/2021

11. General Business

In accordance with Section 7.3 of the DAP Standing Orders 2020 only the Presiding Member may publicly comment on the operations or determinations of a DAP and other DAP members should not be approached to make comment.

12. Meeting Closure

LOTS 4000 AND 4002 BALDIVIS ROAD, BALDIVIS. WASTEWATER PUMPING STATION

Form 1 – Responsible Authority Report
(Regulation 12)

DAP Name:	Metro Outer JDAP	
Local Government Area:	City of Rockingham	
Applicant:	Element	
Owner:	Water Corporation/ State of WA	
Value of Development:	$10 million ☒ Mandatory (Regulation 5) ☐ Opt In (Regulation 6)	
Responsible Authority:	Western Australian Planning Commission	
Authorising Officer:	Director, Metro South and Peel	
LG Reference:	20.2021.92.1 - D21/74553	
WAPC Reference:	28-50222-1	
DAP File No:	DAP/21/01971	
Application Received Date:	1 April 2021	
Report Due Date:	8 June 2021	
Application Statutory Process Timeframe:	60 days with an additional 21 days agreed	
Attachment(s):	1. Development Plans 2. Location-Metropolitan Region Scheme 3. Location-Local Planning Scheme 4. Aerial View 5. Schedule of Agency Comments	
Is the Responsible Authority Recommendation the same as the Officer Recommendation?	☒ Yes ☐ N/A	Complete Responsible Authority Recommendation section
	☐ No	Complete Responsible Authority and Officer Recommendation sections

Responsible Authority Recommendation

That the Metro Outer JDAP resolves to:

1. **Approve** DAP Application reference DAP/21/01971 and accompanying plans (KJ79-1-1; KJ79-2-1; KJ79-2-2; KJ79-2-3; KJ79-2-4; KJ79-3-1; KJ79-3-2; KJ79-3-4; KJ79-4-1; KJ79-4-3) in accordance with Clause 30 of the Metropolitan Region Scheme.

Conditions

1. This decision constitutes planning approval only and is valid for a period of 2 years from the date of approval. If the subject development is not substantially commenced within the specified period, the approval shall lapse and be of no further effect.

2. The total system output of the facility is not to exceed 350 litres per second.

3. The proposal is to be modified so as to remove any direct connection to the existing drainage basin located within the Baldivis Tramway Reserve at the intersection of Stillwater Drive and Baldivis Road.

4. An acid sulphate soils self-assessment form and, if required as a result of the self-assessment, an acid sulphate soils report and an acid sulphate soils management plan shall be submitted to and supported by the Department of Water and Environmental Regulation before any development commences. Where an acid sulphate soils management plan is required to be submitted, all works shall be carried out in accordance with the approved management plan to the satisfaction of the Western Australian Planning Commission, on the advice of the City of Rockingham.

5. Stormwater from all hardstand shall be collected and contained on site. Stormwater must not affect or be allowed to flow onto or into any property or road reserve. The City of Rockingham is generally not supportive of soak wells as there may be difficulty achieving the required separation distance to the water table. The City recommends a small fringe of water gardens to accommodate events up to the critical 1 in 100 year event, with some of the flows filtering through subsoil to the City's drainage basin. The City also recommends using a small planting area adjacent the hardstand area to treat stormwater flow and retain groundwater. Plans are to be to the specifications of the City and all works must be maintained for the duration of the development.

6. A landscaping plan is to be prepared and implemented to the specifications of the City of Rockingham and satisfaction of the Western Australian Planning Commission and must include the following detail:
   a) The location, number and type of existing and proposed trees and shrubs;
   b) Revegetation of any areas cleared due to construction works;
   c) Any natural landscape areas to be retained;
   d) Proposed modifications to the street setback area and all verge areas; and
   e) Relocation of any grasstree plants.

7. An easement is to be created over the existing and proposed infrastructure within Lot 4002 Magenta Crescent in favour of Water Corporation to the specifications of the City of Rockingham and to the satisfaction of the Western Australian Planning Commission. All works and costs associated with creation of the easement are the responsibility of the applicant.

8. Prior to the commencement of development, a Construction Management Plan must be prepared and supported by the City of Rockingham to ensure appropriate management of construction related impacts. The plan must be implemented for the duration of construction works, to the satisfaction of the Western Australian Planning Commission, on advice of the City of Rockingham.

9. A Dust Management Plan is to be prepared to and implemented to the specifications of the City of Rockingham and satisfaction of the Western Australian Planning Commission.

10. Prior to the commencement of development, a Dewatering Management Plan and Ground Water Extraction Licence must be prepared and supported by the Department of Water and Environmental Regulation. The approved plan and licence must be implemented during the construction period of below ground assets, to the specifications of the Department of Water and Environmental Regulations and satisfaction of the western Australian Planning Commission.

Advice Notes

1. The Applicant is to note that any future proposal to increase the capacity of the facility will require an odour assessment.

2. An Acid Sulphate Soils Self-Assessment form may be downloaded from the Western Australian Planning Commission website at www.dplh.wa.gov.au. The form makes reference to the Department of Water and Environmental Regulation's 'Identification and Investigation of Acid Sulphate Soils' guideline. This guideline can be obtained from the Department of Water and Environmental Regulation's website at www.dwer.wa.gov.au

3. All stormwater generated by the development is to be managed in accordance with City of Rockingham *Planning Policy 3.4.3 – Urban Water Management.*

4. The applicant is responsible for protecting any existing City of Rockingham streetscape assets on Stillwater Drive during the course of construction. If any damage is caused to existing assets (identified to be retained) they must be rectified to the satisfaction of the City.

5. The applicant should liaise with the City of Rockingham regarding specifications for all works in the road reserve, including crossovers and planting of street trees.

6. The applicant should liaise with Western Power regarding self-assessment of the proposal and any potential requirements.

Details: outline of development application

Region Scheme	Metropolitan Region Scheme
Region Scheme - Zone/Reserve	Urban
Local Planning Scheme	City of Rockingham Local Planning Scheme No.2
Local Planning Scheme - Zone/Reserve	Public Purpose, Public Open Space
Structure Plan/Precinct Plan	Rivergums Structure Plan SPN/0038
Structure Plan/Precinct Plan - Land Use Designation	Sewer Pump Station, Public Open Space/Drainage
Use Class and permissibility:	Public Utility
Lot Size:	4.276 ha
Existing Land Use:	Vacant, Public Open Space
State Heritage Register	No
Local Heritage	☒ N/A

	☐ Heritage List ☐ Heritage Area
Design Review	☒ N/A ☐ Local Design Review Panel ☐ State Design Review Panel ☐ Other
Bushfire Prone Area	Yes
Swan River Trust Area	No

Proposal:

The application is for public works by the Water Corporation, a public authority, seeking approval to construct:

- Underground waste water pumping infrastructure and pipework;
- Electrical switchboard cabinets and hardstand areas for portable generators;
- 3 ML below-ground emergency storage tank;
- Approximately 160 metres of wastewater pipeline connecting to the existing pump station on Magenta Crescent; and
- New crossover to Stillwater Drive and access road.

The total value of the proposal is $10 million, which falls within the mandatory threshold for Joint Development Assessment Panel determination (JDAP) *(Attachment 1 – Development Plans).*

Proposed Land Use	Public Utility
Proposed Net Lettable Area	N/A
Proposed No. Storeys	N/A
Proposed No. Dwellings	N/A

Background:

A JDAP application has been received seeking development approval for a Waste Water Pumping Station (WWPS) on Lot 4000 Baldivis Road (facing Stillwater Drive) and associated pipework on Lot 4002 Baldivis Road, Baldivis. An existing pump station (facing Magenta Crescent and within Lot 4002) currently services the area but technical limitations prevent it from being upgraded to cater for an increased population and associated increased wastewater volumes. This facility will be either decommissioned or retained as a back-up once the new WWPS is operational.

The proposed new pump station (Type 350) overflow storage and pipework upgrades are needed to ensure that Water Corporation can support ongoing land development and population increases in the area. The proposed WWPS will connect to existing sewers and will transfer wastewater via existing pressure infrastructure to the East Rockingham Wastewater Treatment Plant.

The subject land is zoned Urban under the Metropolitan Region Scheme (MRS) *(Attachment 2 – Location: Metropolitan Region Scheme*). Lot 4000 is zoned Public Purpose under the City of Rockingham Local Planning Scheme No.2 while Lot

4002 (Reserve 52914) is reserved for Public Open Space. The southern corner of Lot 4002 falls within the referral buffer for the Parmelia gas pipeline *(Attachment 3 – Location: Local Planning Scheme)*. The site is abutted to the west by the Baldivis Tramway reserve (Parks and Recreation reserve) and sits in an established residential area (*Attachment 4 - Aerial View).*

Legislation and Policy:

Legislation

- Planning and Development Act 2005 - Part 10: Subdivision and Development Control
- Metropolitan Region Scheme - Part IV: Development
- City of Rockingham Local Planning Scheme No.2
- Planning and Development (Development Assessment Panels) Regulations 2011

State Government Policies

- South Metropolitan Peel Sub-regional Planning Framework
- State Planning Policy 3.7 - Planning in Bushfire Prone Areas
- EPA Guidance Statement 3 - Separation Distances Between Industrial and Sensitive Land Uses

Structure Plans/Activity Centre Plans

Rivergums Structure Plan (WAPC Ref: SPN/0038)

Local Planning Policies

City of Rockingham *Planning Policy 3.4.3 – Urban Water Management.*

Consultation:

Public Consultation

Under the *Water Services Act 2012,* the Water Corporation is required to undertake public consultation periods as part of its Prerequisites to Works process. All residents who might be impacted by the proposed works were notified by mail on 3 May 2021 and given an opportunity to object by 31 May 2021. Where the Water Corporation cannot resolve an objection directly with a resident, the matter is required to be referred to the Minister for Water for a ruling. Project delivery can only progress once all objections are addressed and the process completed.

The public comment period is still taking place and any feedback has not been viewed or considered as part of this report.

Referrals/consultation with Government/Service Agencies

The Department of Biodiversity, Conservation and Attractions and APA (Parmelia pipeline operators) reviewed the proposal and had no comment.

Western Power did not recommend conditions but advised the applicant should liaise directly with Western Power regarding potential technical requirements.

The comments of the Department of Water and Environmental Regulation (DWER) and the City of Rockingham ('the City') are discussed below.

The full agency comments are shown at *Attachment 5 – Schedule of Agency Comments*

Planning Assessment:

Metropolitan Region Scheme

Clause 16 of the MRS states development approval is not required where a public authority is undertaking public works on reserved land owned by that authority and is using that land for the purpose for which it is reserved. In this case, although Water Corporation owns Lot 4000, it is not reserved for a Public Purpose under the MRS. Development approval under the MRS is therefore required.

Clause 30 of the MRS requires the WAPC to have regard to the following factors when determining a development application on land zoned or reserved under the MRS:

- the purpose for which the land is zoned or reserved under the MRS;
- the orderly and proper planning of the locality; and
- the preservation of the amenities of the locality.

As stated previously, the site is zoned Urban under the MRS and reserved for 'Public Purpose' and 'Public Open Space' under LPS 2. The proposal will provide an essential piece of infrastructure for surrounding urban development.

The site is indicated for Urban development under the *South Metropolitan Peel Sub-Regional Planning Framework.* Although the WWPS is not specifically referenced in the Framework, the site abuts a wastewater main which is planned to be upgraded in future.

The endorsed Rivergums Local Structure Plan which guides development in the area has always intended the location be used for a permanent WWPS to replace the interim one located on Magenta Crescent.

Issues related to amenity (visual impact and potential odour) have been addressed via the design of the development and provision of odour treatment units. This is discussed further below.

Taking into consideration the above, the proposed development is considered to satisfactorily address the relevant factors listed under Clause 30.

Odour Considerations

WWPS facilities have the potential to create odour issues. This is typically based on their capacity and scale of waste being processed. The initial pump rate of the proposed facility will be 160 litres per second (L/s). This is planned to increase to 360 L/s around 2031 to cater for expected urban development. This increase will only require some minor internal modifications and adjustment of electronic controls. In around 2050, a second Type 350 pump station is to be constructed (shown indicatively on the submitted plans). The two stations will then have a combined pump rate of 500L/s.

The Environmental Protection Authority's *Guidance Statement 3 - Separation Distances between Industrial and Sensitive Land Uses* (GS3) provides advice on generic separation distances between industrial and sensitive land uses so as to avoid conflicts such as those related to health or amenity.

The shortest distance between the boundary of Lot 4000 and nearby residential development is approximately 80m.

With regard to waste water pumping stations, GS3 recommends a buffer distance of 30m for pump stations up to 180 L/s capacity and a 50m buffer for those up to 350 L/s capacity. Above 350 L/s a pumping station is considered 'major' and a buffer of 150m is advised. The applicant has advised of a willingness to accept an approval condition limiting total capacity to 350 L/s so as to remain within the 50m requirement. The planned expansion to 500 L/s capacity is not expected for approximately 30 years, by which time changes in policy and/or technology may render GS3 obsolete. It is therefore recommended a condition be imposed limiting total capacity to 350 L/s, with any further increase subject to a separate development approval.

Notwithstanding the recommendations of GS3, DWER has brought attention to past incidents elsewhere of odour complaints from residences over 200m from pumping stations. Although a complete assessment of all past odour incidents is not practical, the Water Corporation has advised of the following cases:

- *Bibra Lake and Bennett Avenue station*s: complaints were received following failures of the odour treating equipment, rather than from normal operation. The relevant infrastructure was replaced and no subsequent complaints received.

- *Mandurah Terrace station*; a Type 350 station (similar to that proposed here) is located on the Mandurah foreshore near Cicerello's Fish and Chips shop. It captures most of Mandurah's flows and incorporates various infrastructure specific to the station and location. This pump station has operated without complaint.

- *Flora Street, Richmond Street, Brownell Crescent and Murdoch Drive pumping stations*: Water Corporation installed infrastructure upgrades appropriate to the locations of these pump stations after a number of complaints were received. Since undertaking the works, there have been no complaints received at any of the sites.

The applicant advises the pumping station proposed for Baldivis will incorporate an odour filtration system to control odour. Should odour issues arise in future, Water Corporation has advised it will respond as required and potentially undertake infrastructure upgrades similar to those listed above.

DWER has recommended that Water Corporation provide a firm commitment and detail on how it proposes to respond to any potential future odour complaints. This is not considered necessary due to:

- Water Corporation's status as a public utility and its responsibility to address community concerns; and
- Its proven record in rectifying past odour issues.

It is considered that potential odour issues from the development have been adequately addressed for this proposal.

Visual Impact

The majority of the development will be located below natural ground level. The 3ML storage tank will be covered with a structural fill material (surfaced with topsoil and grass) approximately one metre higher than surrounding ground level and with side batters of 1:3. The pumping station will be located directly under the asphalt access road. Above ground electrical switchboard cabinets will be located towards the northern end of the lot. The ground surface above the pipeline will be rehabilitated to a pre-construction condition and vegetation encouraged.

The City has requested a condition for the preparation and implementation of a Landscape Management Plan and this is supported.

Drainage

The City advises that the existing drainage basin nearby (corner of Stillwater Drive and Baldivis Road) is subject to seasonal inundation and does not have capacity to accommodate additional flows. The City therefore does not support direct connection to the groundwater basin. It recommends using a small planting area adjacent to the hardstand to treat stormwater flow and retain groundwater and has recommended conditions for the preparation, implementation and maintenance of such works.

The City has recommended preparation and implementation of a landscaping plan partly to ensure the appropriate type and area of vegetation to serve the drainage function. The City also recommends preparation of a Dewatering Management Plan and obtaining of a Groundwater Extraction Licence from DWER prior to development. These conditions are supported.

Acid Sulfate Soils

DWER advises the site lies adjacent to an area with a high to moderate risk of acid sulfate soils (ASS) occurring within 3 metres of the surface. As the proposed construction is likely to disturb ASS and require dewatering of the site, DWER recommends imposition of a standard ASS condition on any approval. This is supported.

Bushfire Planning

The subject land is located within a bushfire prone area and therefore subject to *State Planning Policy 3.7 - Planning in Bushfire Prone Areas* (SPP 3.7). Under Planning Bulletin 111, a proposal may be exempt from a requirement for a Bushfire Attack Level (BAL) assessment if it is for essential infrastructure. An exemption can also apply where the proposal:

- does not result in the intensification of development;
- does not result in an increase of residents or employees;
- does not involve the occupation of employees on site for any considerable period of time.

Given the above, it is considered a BAL assessment is not required.

Other

The City has also recommended conditions related to:

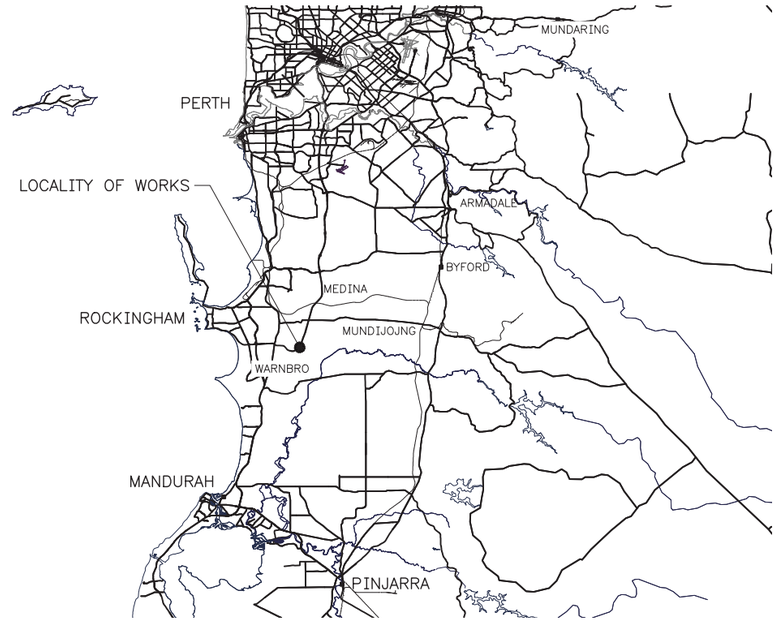
- creation of necessary easements for the existing and proposed infrastructure;
- retention of significant trees and shrubs;
- preparation and implementation of a Dust Management Plan and Construction Management Plan.

These are standard conditions and their imposition is supported.

Conclusion:

The application is for essential infrastructure which complies with the strategic and statutory planning framework for the site. Potential issues relating to odour, visual amenity and drainage can be addressed via imposition of appropriate conditions. Conditional approval is recommended.

SITE PLAN
SCALE (1)



LOCALITY PLAN
NOT TO SCALE

DRAWING LIST

KJ79-1-1	LOCALITY PLAN & DRAWING LIST
KJ79-1-2	GENERAL NOTES
KJ79-2-1	PRESSURE MAIN - PLAN AND LONGITUDINAL SECTION
KJ79-2-2	PRESSURE MAIN - DETAILS
KJ79-2-3	MAGNETIC FLOWMETER DETAILS - SECTION DETAILS
KJ79-2-4	AIR VALVE DETAILS
KJ79-3-1	PUMPING STATION SITE PLAN
KJ79-3-2	CIVIL EARTHWORKS / DRAINAGE - SITE PLAN & DETAILS
KJ79-3-4	OVERFLOW TO ENVIRONMENT
KJ79-3-5	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 - GENERAL NOTES
KJ79-3-6	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 - TANK BASE PLAN AND DETAILS
KJ79-3-7	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 - TANK ROOF PLAN AND DETAILS
KJ79-3-8	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 - TANK SECTIONS, ELEVATIONS AND DETAILS
KJ79-4-1	PUMPING STATION - GENERAL ARRANGEMENT AND DETAILS - SHEET 1 OF 2
KJ79-4-2	PUMPING STATION - GENERAL ARRANGEMENT AND DETAILS - SHEET 2 OF 2
KJ79-4-3	PUMPING STATION - PENSTOCK ARRANGEMENT AND DETAILS
KJ79-5-1	PUMPING STATION - CONCRETE PLAN AND SECTIONS
KJ79-5-2	PUMPING STATION - REINFORCEMENT PLAN AND SECTIONS
KJ79-5-3	PUMPING STATION - TOP SLABS CONCRETE PLAN AND SECTIONS
KJ79-5-4	PUMPING STATION - TOP SLABS REINFORCEMENT PLAN AND DETAILS
KJ79-5-5	PUMPING STATION - COVER PLATE AND FRAME DETAILS - SHEET 1 OF 2
KJ79-5-6	PUMPING STATION - COVER PLATE AND FRAME DETAILS - SHEET 2 OF 2
KJ79-5-7	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 - TANK BASE REINFORCEMENT
KJ79-5-8	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 - TANK BEAM ELEVATIONS
KJ79-5-9	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 - TANK BASE, WALL SECTION AND DETAILS
KJ79-5-10	ELECTRICAL CABINET - CONCRETE SLAB AND REINFORCEMENT DETAILS
KJ79-6-1	PUMP WELL - COVER/ALARM AND PENSTOCK/VALVE OPENING/COVER DETAIL
KJ79-8-1	PUMPING STATION & VALVE PIT - PIPE AND FABRICATED DETAILS - SHEET 1 OF 2
KJ79-8-2	PUMPING STATION & VALVE PIT - PIPE AND FABRICATED DETAILS - SHEET 2 OF 2
KJ79-10-1	PUMPING STATION VALVE PIT - GENERAL ARRANGEMENT
KJ79-10-2	PUMPING STATION VALVE PIT - CONCRETE AND REINFORCING DETAILS
KJ79-10-3	PUMPING STATION VALVE PIT - BYPASS PUMPING PIT & PIPE FITTING DETAILS
KJ79-13-1	ULTRASONIC SUPPORT AND LANYARD DETAILS
KJ79-14-1	PUMPING STATION - PREVENTION OF FALLS (SHEET 1 OF 4) - PART 1 OF 2
KJ79-14-2	PUMPING STATION - PREVENTION OF FALLS (SHEET 2 OF 4) - PART 2 OF 2
KJ79-14-3	PUMPING STATION - PREVENTION OF FALLS (SHEET 3 OF 4)
KJ79-14-4	PUMPING STATION - PREVENTION OF FALLS (SHEET 4 OF 4) - GRATING
KJ79-19-1	PUMPING STATION & 3000m3 EMERGENCY OVERFLOW STORAGE TANK NO.1 - AIR VENTILATION DETAILS
KJ79-41-1	ELECTRICAL PRIMARY DESIGN - SITE PLAN
KJ79-41-2	ELECTRICAL PRIMARY DESIGN - MAIN SWITCHBOARD - SINGLE LINE POWER DIAGRAM
KJ79-41-3	ELECTRICAL PRIMARY DESIGN - PUMP SWITCHBOARD - SINGLE LINE POWER DIAGRAM
KJ79-41-4	ELECTRICAL PRIMARY DESIGN - EARTHING DIAGRAM
KJ79-41-6	ELECTRICAL PRIMARY DESIGN - FUTURE SITE PLAN
KJ79-50-1	PRIMARY DESIGN - CONTROL & INSTRUMENTATION DIAGRAM
KJ79-51-4	CONTROL CUBICLE - POWER DIAGRAM
KJ79-51-6	INSTALLATION DETAIL - LEVEL INSTRUMENTATION
KJ79-59-1	WET WELL 1 LEVEL TRANSMITTER (LIT101) - LOOP DIAGRAM
KJ79-59-2	WET WELL 2 LEVEL TRANSMITTER (LIT102) - LOOP DIAGRAM
KJ79-59-3	DELIVERY FLOW TRANSMITTER (FIT001) - LOOP DIAGRAM
KJ79-90-1	MECHANICAL DESIGN SUMMARY
GZ30-3-1	GRAVITY SEWER INLET ACCESS CHAMBERS S1603 TO S1605 - PLAN, SECTIONS AND CHAMBER DETAILS
GZ30-3-2	GRAVITY SEWER INLESS ACCESS CHAMBER S1606 - PLAN, SECTIONS AND CHAMBER DETAILS
GZ30-3-3	GRAVITY SEWER ACCESS CHAMBER AB3233 - MODIFICATIONS
HZ23-56-130**	CELLULAR NETWORK (UWSS) - SCADA BLOCK DIAGRAM - PART **
HZ23-56-131**	CELLULAR NETWORK (UWSS) - COMMUNICATIONS DETAIL - PART **
HZ23-56-132**	CELLULAR NETWORK (UWSS) - COMMUNICATIONS LOCATION DETAILS - PART **

HOLD 1 HOLD 1

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs
NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A4	22.12.20	RE-ISSUED FOR CLIENT REVIEW
A3	17.12.20	ISSUED FOR SQUAD CHECK

HOLDS
1. DRAWINGS CLOUDED TO BE DEFINED IN DETAIL DESIGN.

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SCALE 1:2000

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM NONE	DES CALC J. LU
	COORDINATE SYS MGA94-50	DES CHD R. FOURIE
ASCON SURVEY NONE	DES REF IW200060	DRN J. LU
		Q.C. CHD C. CARNEVALI

NORTH POINT

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

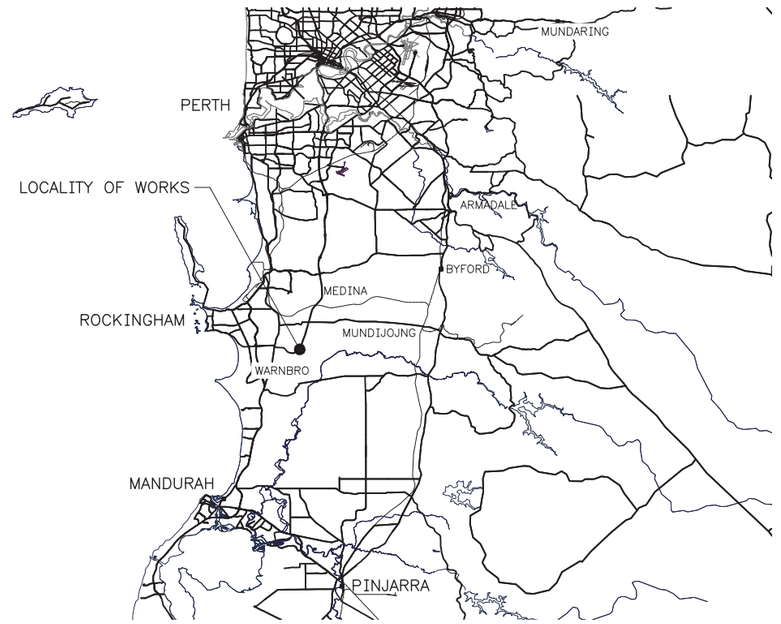
METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700-35 -STILLWATER DR & PM
LOCALITY PLAN AND DRAWING LIST

FILE	PLAN	CAD	ISSUE
PROJECT C-S01648	KJ79-1-1		A4

ORIGINAL SHEET SIZE A1
MF

566
810

SITE PLAN
SCALE (1)



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KJ79-3-1	PUMPING STATION SITE PLAN
KJ79-3-2	CIVIL EARTHWORKS / DRAINAGE – SITE PLAN & DETAILS
KJ79-3-3	DN1200 SEWER OVERFLOW – PLAN AND LONGITUDINAL SECTION SHEET 1 OF 2
KJ79-3-4	DN1200 SEWER OVERFLOW – PLAN AND LONGITUDINAL SECTION SHEET 2 OF 2
KJ79-3-5	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 – GENERAL NOTES
KJ79-3-6	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 – TANK BASE PLAN AND DETAILS
KJ79-3-7	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 – TANK ROOF PLAN AND DETAILS
KJ79-3-8	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 – TANK SECTIONS, ELEVATIONS AND DETAILS
KJ79-4-1	PUMPING STATION – GENERAL ARRANGEMENT AND DETAILS – SHEET 1 OF 2
KJ79-4-2	PUMPING STATION – GENERAL ARRANGEMENT AND DETAILS – SHEET 2 OF 2
KJ79-4-3	PUMPING STATION – PENSTOCK ARRANGEMENT AND DETAILS
KJ79-5-1	PUMPING STATION – CONCRETE PLAN AND SECTIONS
KJ79-5-2	PUMPING STATION – REINFORCEMENT PLAN AND SECTIONS
KJ79-5-3	PUMPING STATION – TOP SLABS CONCRETE PLAN AND SECTIONS
KJ79-5-4	PUMPING STATION – TOP SLABS REINFORCEMENT PLAN AND DETAILS
KJ79-5-5	PUMPING STATION – COVER PLATE AND FRAME DETAILS – SHEET 1 OF 2
KJ79-5-6	PUMPING STATION – COVER PLATE AND FRAME DETAILS – SHEET 2 OF 2
KJ79-5-7	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 – TANK BASE REINFORCEMENT
KJ79-5-8	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 – TANK BEAM ELEVATIONS
KJ79-5-9	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 – TANK BASE, WALL SECTION AND DETAILS
KJ79-5-10	ELECTRICAL CABINET – CONCRETE SLAB AND REINFORCEMENT DETAILS
KJ79-6-1	PUMP WELL – COVER/ALARM AND PENSTOCK/VALVE OPENING/COVER DETAIL
KJ79-8-1	PUMPING STATION & VALVE PIT – PIPE AND FABRICATED DETAILS – SHEET 1 OF 2
KJ79-8-2	PUMPING STATION & VALVE PIT – PIPE AND FABRICATED DETAILS – SHEET 2 OF 2

HOLD 1

KJ79-10-1	PUMPING STATION VALVE PIT – GENERAL ARRANGEMENT
KJ79-10-2	PUMPING STATION VALVE PIT – CONCRETE AND REINFORCING DETAILS
KJ79-10-3	PUMPING STATION VALVE PIT – BYPASS PUMPING PIT & PIPE FITTING DETAILS
KJ79-13-1	ULTRASONIC SUPPORT AND LANYARD DETAILS
KJ79-14-1	PUMPING STATION – PREVENTION OF FALLS (SHEET 1 OF 4) – PART 1 OF 2
KJ79-14-2	PUMPING STATION – PREVENTION OF FALLS (SHEET 2 OF 4) – PART 2 OF 2
KJ79-14-3	PUMPING STATION – PREVENTION OF FALLS (SHEET 3 OF 4)
KJ79-14-4	PUMPING STATION – PREVENTION OF FALLS (SHEET 4 OF 4) – GRATING
KJ79-19-1	PUMPING STATION & 3000m3 EMERGENCY OVERFLOW STORAGE TANK NO.1 – AIR VENTILATION DETAILS
KJ79-41-1	ELECTRICAL PRIMARY DESIGN – SITE PLAN
KJ79-41-2	ELECTRICAL PRIMARY DESIGN – MAIN SWITCHBOARD – SINGLE LINE POWER DIAGRAM
KJ79-41-3	ELECTRICAL PRIMARY DESIGN – PUMP SWITCHBOARD – SINGLE LINE POWER DIAGRAM
KJ79-41-4	ELECTRICAL PRIMARY DESIGN – EARTHING DIAGRAM
KJ79-41-6	ELECTRICAL PRIMARY DESIGN – FUTURE SITE PLAN
KJ79-50-1	PRIMARY DESIGN – CONTROL & INSTRUMENTATION DIAGRAM
KJ79-51-4	CONTROL CUBICLE – POWER DIAGRAM
KJ79-51-6	INSTALLATION DETAIL – LEVEL INSTRUMENTATION
KJ79-59-1	WET WELL 1 LEVEL TRANSMITTER (LIT101) – LOOP DIAGRAM
KJ79-59-2	WET WELL 2 LEVEL TRANSMITTER (LIT102) – LOOP DIAGRAM
KJ79-59-3	DELIVERY FLOW TRANSMITTER (FIT001) – LOOP DIAGRAM
KJ79-90-1	MECHANICAL DESIGN SUMMARY
GZ30-3-1	GRAVITY SEWER INLET ACCESS CHAMBERS S1603 TO S1605 – PLAN, SECTIONS AND CHAMBER DETAILS
GZ30-3-2	GRAVITY SEWER INLESS ACCESS CHAMBER S1606 – PLAN, SECTIONS AND CHAMBER DETAILS
GZ30-3-3	GRAVITY SEWER ACCESS CHAMBER AB3233 – MODIFICATIONS
HZ23-56-130**	CELLULAR NETWORK (UWSS) – SCADA BLOCK DIAGRAM – PART **
HZ23-56-131**	CELLULAR NETWORK (UWSS) – COMMUNICATIONS DETAIL – PART **
HZ23-56-132**	CELLULAR NETWORK (UWSS) – COMMUNICATIONS LOCATION DETAILS – PART **

HOLD 1 HOLD 1

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REV	DATE	DESCRIPTION
A4	22.12.20	RE-ISSUED FOR CLIENT REVIEW
A3	17.12.20	ISSUED FOR SQUAD CHECK

HOLDS
1. DRAWINGS CLOUDED TO BE DEFINED IN DETAIL DESIGN.

(1) 50 40 30 20 10 0 50 100 m
SCALE 1:2000

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM NONE	DES CALC J. LU
	COORDINATE SYS MGA94-50	DES CHD R. FOURIE
ASCON SURVEY NONE	DES REF IW200060	DRN J. LU
		Q.C. CHD C. CARNEVALI

NORTH POINT

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

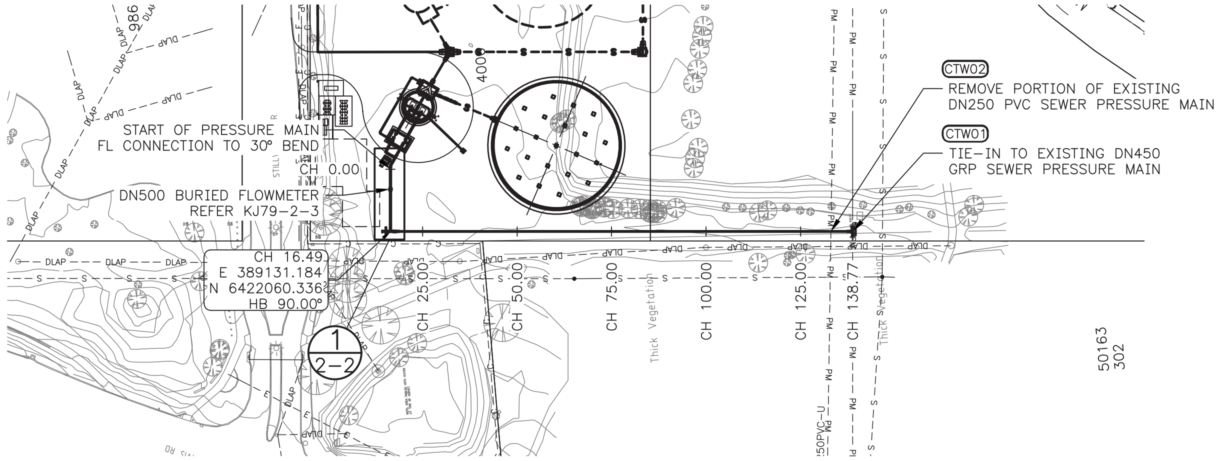
WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700-35 –STILLWATER DR & PM
LOCALITY PLAN AND DRAWING LIST

FILE	PLAN	CAD	ISSUE
PROJECT C-S01648	KJ79-1-1		A4

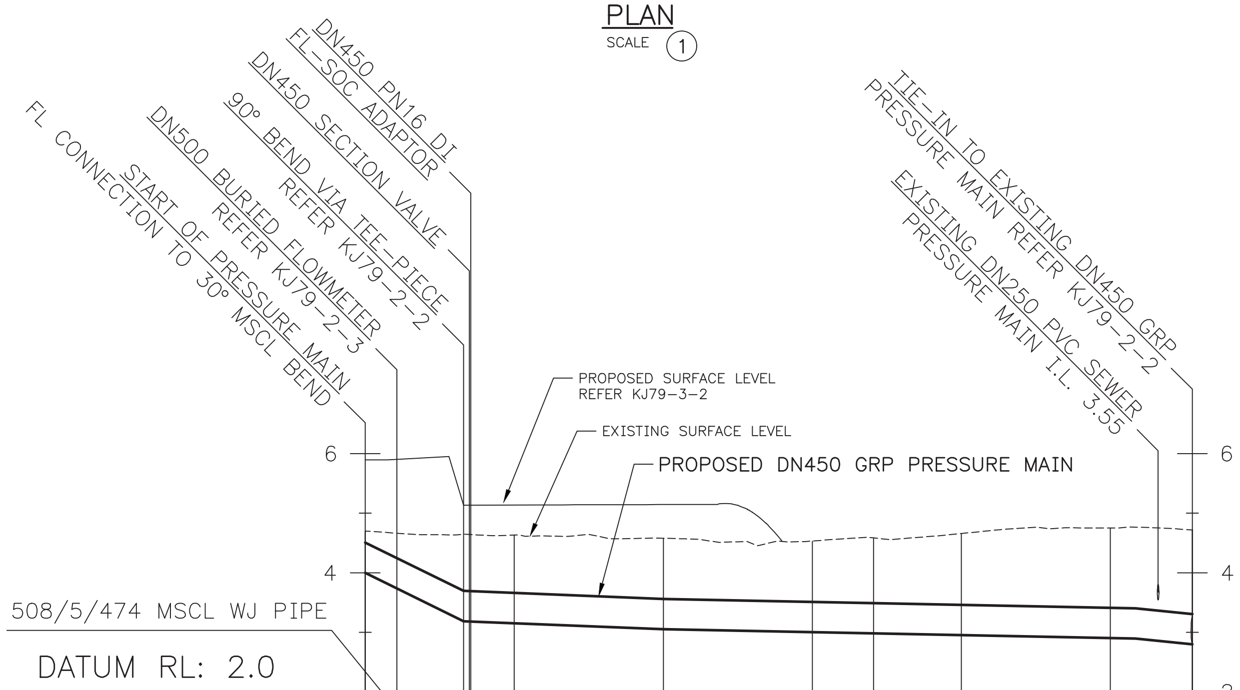
ORIGINAL SHEET SIZE A1
MF

566
810



PLAN

SCALE (1)



DATUM RL: 2.0

PIPE DESCRIPTION: 508/5/474 MSCL WJ PIPE (CH 0.000–16.490); DN450 GRP SN10000 PN16 (CH 16.490–138.765); LOT 4000; LOT 4002

PIPE GRADE: −1:20; −1:250; −1:500; −1:100

DEPTH TO INVERT	0.698	0.923	1.460	1.459	1.458	1.479	1.525	1.528	1.602	1.705	1.848	1.871	1.922
PIPE INVERT	4.000	3.739	3.188	3.184	3.183	3.154	3.054	3.004	2.983	2.954	2.904	2.895	2.800
NATURAL SURFACE	4.698	4.662	4.648	4.643	4.641	4.633	4.579	4.532	4.585	4.659	4.752	4.767	4.722
CHAINAGE	0.000	5.300	16.490	17.459	17.678	25.000	50.000	75.000	85.251	100.000	125.000	129.225	138.765

WATER MAIN LONGITUDINAL SECTION

HORIZONTAL SCALE: (1) VERTICAL SCALE: (2)

LEGEND

- PROPOSED PRESSURE MAIN
- SURVEYED VEGETATION
- — W — EXISTING BURIED WATER MAIN
- — S — EXISTING SEWER MAIN
- — PM — EXISTING SEWER PRESSURE MAIN
- — C — EXISTING COMMS CONDUIT
- — E — EXISTING BURIED POWER (LOW VOLTAGE)
- — DLAP — EXISTING DRAINAGE

NOTES

1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS, THE CONTRACTOR SHALL ENGAGE A SERVICE LOCATION COMPANY TO POSITIVELY IDENTIFY THE ALIGNMENT AND LEVEL OF ALL SERVICES ALONG THE PIPELINE ROUTE. SHOULD THIS INVESTIGATION IDENTIFY CLASHES WITH THE PROPOSED PIPELINE DESIGN, THE CONTRACTOR SHALL REFER TO THE SUPERINTENDENT FOR DIRECTION.
3. WHERE AN I.L. IS SPECIFIED FOR AN EXISTING SERVICE IT HAS BEEN OBTAINED FROM AS CONSTRUCTED PLANS, SURVEY OR POTHOLING INFORMATION AND SHALL BE TREATED AS AN APPROXIMATE LEVEL. WHERE NO I.L. IS SPECIFIED, THE DEPTH HAS BEEN ASSUMED BASED ON THE UTILITY PROVIDERS CODE OF PRACTICE.
4. REFER TO KJ79-2-2 FOR PRESSURE MAIN DETAILS.

REFERENCE DRAWINGS

KJ79-1-1	LOCALITY PLAN AND DRAWING LIST
KJ79-1-2	GENERAL NOTES
KJ79-2-2	PRESSURE MAIN – DETAILS
KJ79-2-3	MAGNETIC FLOWMETER – SECTION DETAILS
KJ79-3-1	PUMP STATION SITE PLAN
KJ79-3-2	CIVIL EARTHWORKS/DRAINAGE – SITE PLAN & DETAILS

CLEARANCE TO WORKS
REQUIRED FROM WATER CORPORATION

CTW No.	SERVICE – LOCATION
CTW01	TIE-IN TO EXISTING DN450 GRP SEWER PRESSURE MAIN
CTW02	REMOVAL OF SECTION OF DN250 PVC SEWER PRESSURE MAIN

PERTH ONE CALL SYSTEM – DIAL 1100 – DIAL BEFORE YOU DIG

PRESSURE TEST XXXX kPa

MAXIMUM ALLOWABLE OPERATING PRESSURE (MAOP) IS XXXX kPa or XXXm HEAD

EXACT LOCATION OF UNDERGROUND SERVICES TO BE CONFIRMED PRIOR TO COMMENCEMENT OF EXCAVATION

(1) 10 5 0 10 20 30 40 50 60 70 m — SCALE 1:1000

(2) 1 0.5 0 1 2 3 4 5 6 7 m — SCALE 1:100

PRELIMINARY - NOT FOR CONSTRUCTION

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DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY JACOBS	VERTICAL DATUM AHD	DES CALC J. LU	NORTH POINT
	COORDINATE SYS MGA94-50	DES CHD R. FOURIE	
ASCON SURVEY NONE	DES REF IW200060	DRN J. LU	
		Q.C. CHD C. CARNEVALI	

RECOMMENDED

CONSULTANT PROJECT MANAGER

APPROVED

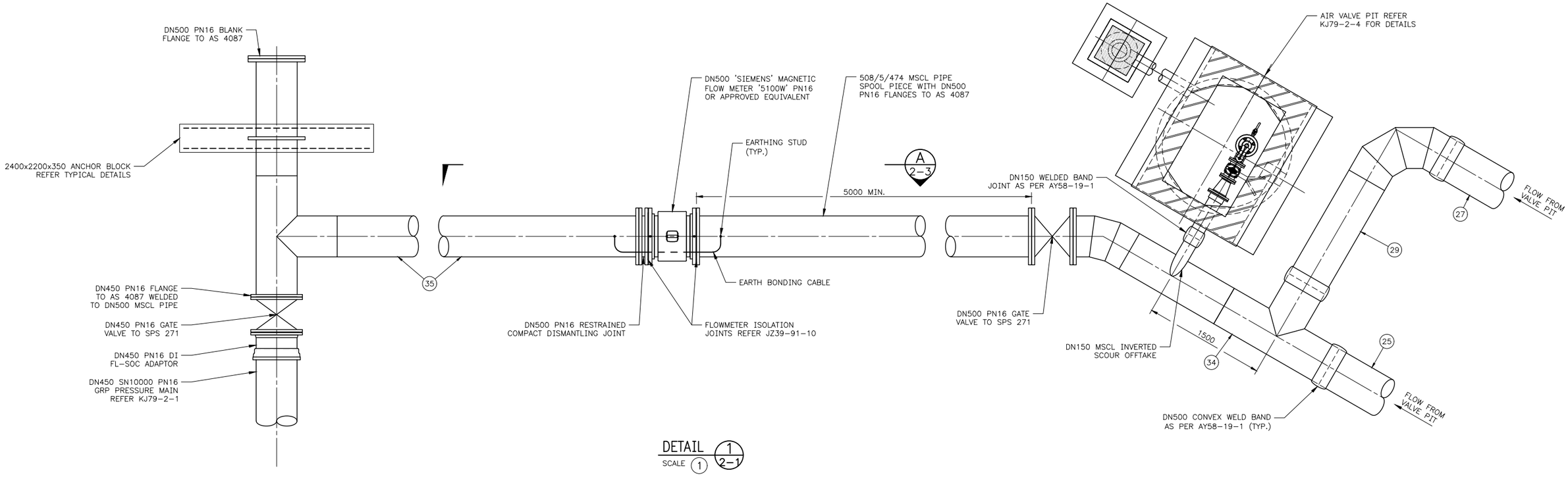
CONSULTANT PROJECT DIRECTOR

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700-35- STILLWATER DR & PM
DN450 GRP PRESSURE MAIN
PLAN AND LONGITUDINAL SECTION

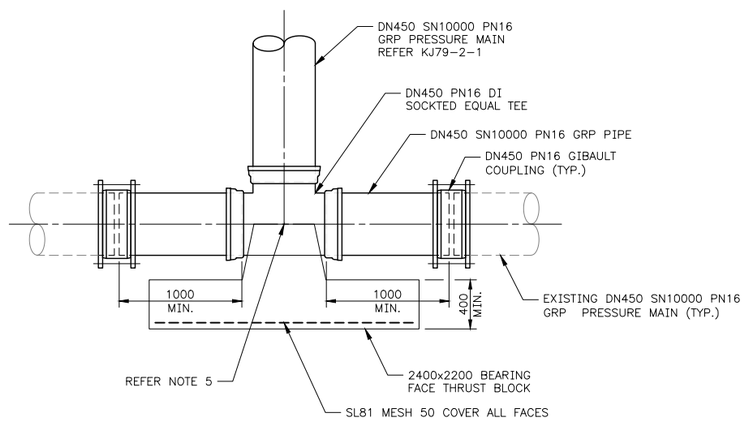
FILE | PLAN | CAD | ISSUE A2 | ORIGINAL SHEET SIZE A1

PROJECT C-S01648 | KJ79-2-1 | MF

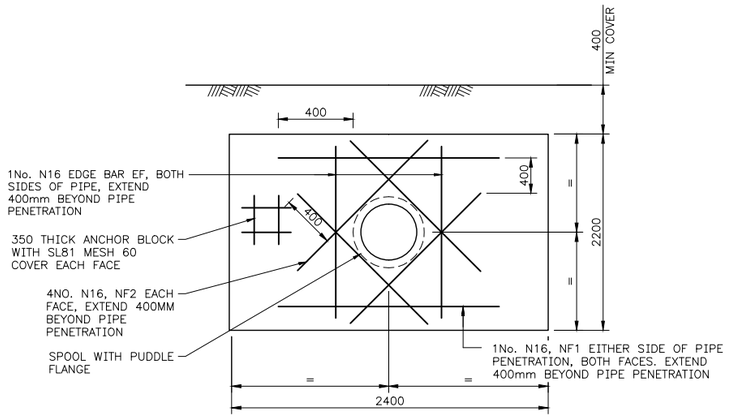
566 810



DETAIL 1 / 2-1
SCALE 1



DETAIL 2 / 2-1
SCALE 1



TYPICAL ANCHOR BLOCK
SCALE NTS

PRELIMINARY - NOT FOR CONSTRUCTION

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REV	DATE	DESCRIPTION
A2	18.12.20	ISSUED FOR CLIENT REVIEW
A1	18.12.20	ISSUED FOR INTERNAL REVIEW

REFERENCE DRAWINGS

KJ79-2-1	DN450 GRP PRESSURE MAIN – PLAN AND LONGITUDINAL SECTION
KJ79-2-3	MAGNETIC FLOWMETER – SECTION DETAILS
KJ79-2-4	PRESSURE MAIN – AIR VALVE DETAILS
KJ79-8-2	PIPE SPECIAL DETAILS – SHEET 2 OF 2
AY58-19-1	M.S.C.L. WELDED PIPE JOINT
JZ39-91-10	FLANGE ISOLATION JOINTS

GENERAL NOTES

1. ALL DIMENSIONS IN MILLIMETRES UNLESS SHOWN OTHERWISE.
2. CONCRETE SHALL BE GRADE N32 TO AS 1379 PLACED IN ACCORDANCE WITH AS 3600.
3. THRUST SUPPORTS ARE INTENDED TO RESIST 1,000kPa (100m) MAXIMUM TEST PRESSURE AGAINST COMPACT UNDISTURBED SOIL OR WELL COMPACTED FILL MATERIAL.
4. WELL COMPACTED FILL SHALL PROVIDE A FILL PENETRATION RESISTANCE OF AT LEAST 7 BLOWS PER 300mm OF PENETRATION, WHEN TESTED IN ACCORDANCE WITH AS 1289.6.3.3.
5. PIPELINE FITTINGS TO BE PROVIDED WITH CONCRETE THRUST SUPPORT SHALL BE OVER-WRAPPED WITH A BOND BREAKING MEMBRANE OF ACCEPTABLE DESIGN PRIOR TO CONCRETING.
6. THRUST BLOCK DESIGN BASED UPON HORIZONTAL BEARING CAPACITY OF 48kPA (SAND). THE CONTRACTOR SHALL INSPECT THE EXCAVATION PRIOR TO THRUST BLOCK CONSTRUCTION AND VERIFY THAT THE SOIL CHARACTERISTICS ARE AS STATED IN THE DESIGN DETAILS. THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT FOR DIRECTION IF THE CONDITIONS DIFFER.
7. ITEMS DENOTED BY (1) ARE DETAILED ON DRAWING KJ79-8-2.

1 500 0 500 1000 1500 mm
SCALE 1:25

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

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	COORDINATE SYS	DES CHD R. FOURIE
ASCON SURVEY NONE	DES REF IW200060	DRN J. LU
		Q.C. CHD C. CARNEVALI

NORTH POINT

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700-35- STILLWATER DR & PM PRESSURE MAIN
DETAILS

FILE	PLAN	CAD	ISSUE
PROJECT C-S01648	KJ79-2-2		A2

ORIGINAL SHEET SIZE A1
MF

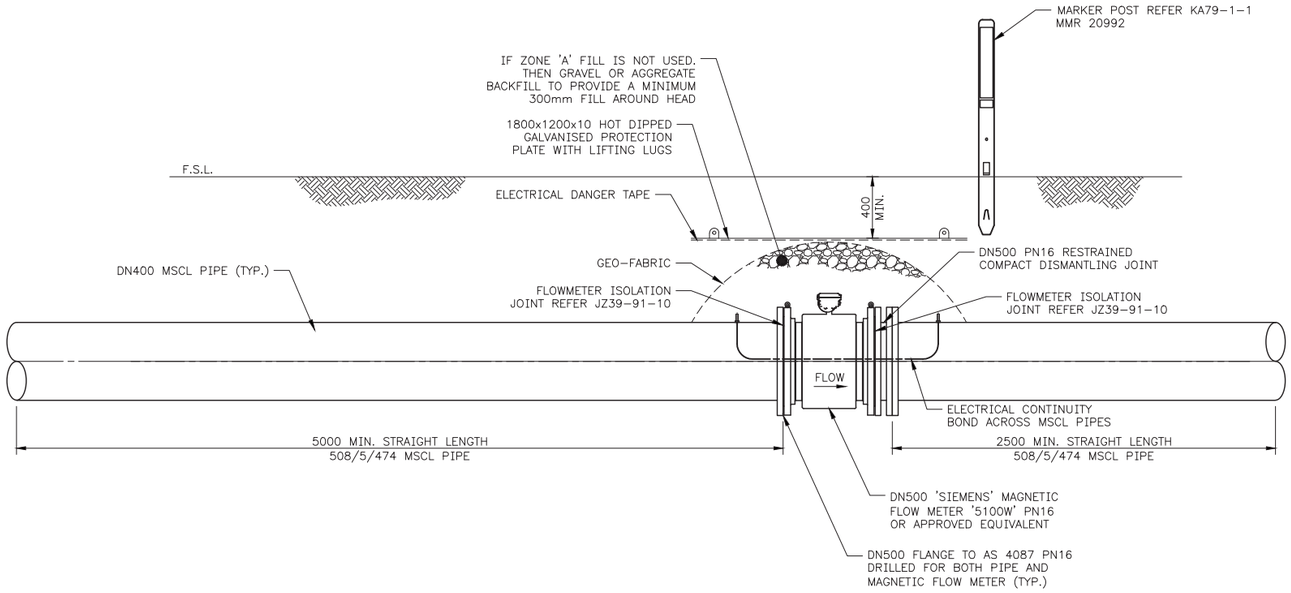
566
810

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. REFER TO DRG KJ79–3–1 FOR FLOWMETER LOCATION.
3. INSTALLATION OF FLOW METER SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
4. MAGNETIC FLOW METER INSULATED FLANGES NOTES:
   - 4.1. CHECK FOR BURRS IN FLANGE BOLT HOLES.
   - 4.2. AFTER INSULATED BOLT IS INSERTED INTO THE FLANGE, ONLY THE NUT SHOULD BE ALLOWED TO TURN.
   - 4.3. INITIAL TESTING OF FLANGES CAN BE CARRIED OUT WITH THE USE OF A D.C. WELDER OR A GAS ELECTRONICS MODEL 601 INSULATION CHECKER.
   - 4.4. INSULATED FLANGE SHALL BE INSTALLED IN ACCORDANCE WITH WATER CORPORATION STANDARD DRAWING JZ39–91–10.
5. THE MAGNETIC FLOW METER SHALL NOT BE BURIED UNTIL IT IS COMPLETELY WATER PROOFED.
6. MAGNETIC FLOW METER AND FLANGES TO BE COMPLETELY WRAPPED WITH BUTYL MASTIC TAPE AND PVC OVERLAP.

REFERENCES

KJ79–3–1	PUMPING STATION SITE PLAN
KJ79–2–1	PRESSURE MAIN – PLAN AND LONGITUDINAL SECTION
JZ39–91–10	FLANGE ISOLATION JOINTS



DN400 MAGNETIC FLOW METER (DIRECT BURIED)

SCALE (1)

PRELIMINARY - NOT FOR CONSTRUCTION

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REV	DATE	DESCRIPTION
A2	22.10.20	ISSUED FOR CLIENT REVIEW
A1	20.10.20	ISSUED FOR SQUAD CHECK

(1) 500 0 500 1000 mm
SCALE 1:20

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

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	COORDINATE SYS NONE	DES CHD R. FOURIE	
ASCON SURVEY NONE	DES REF IW200060	DRN J. LU	
		Q.C. CHD C. CARNEVALI	

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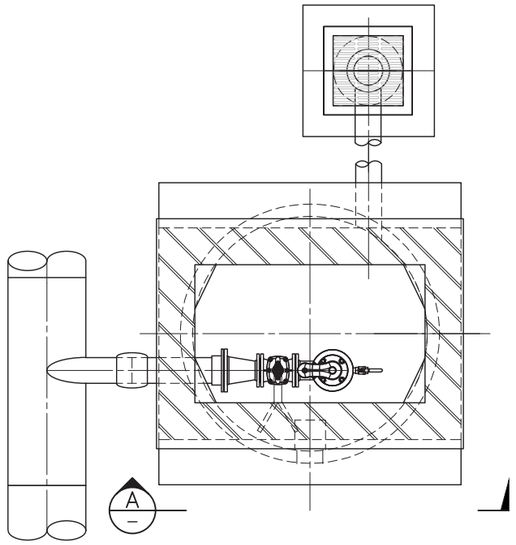
WATER CORPORATION

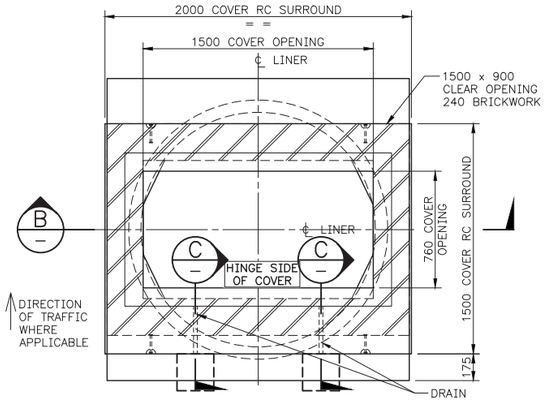
METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM
MAGNETIC FLOWMETER
SECTION DETAILS

FILE	PLAN	CAD	ISSUE	ORIGINAL SHEET SIZE
PROJECT C–S01648	KJ79–2–3		A2	A1
			MF	

566
810

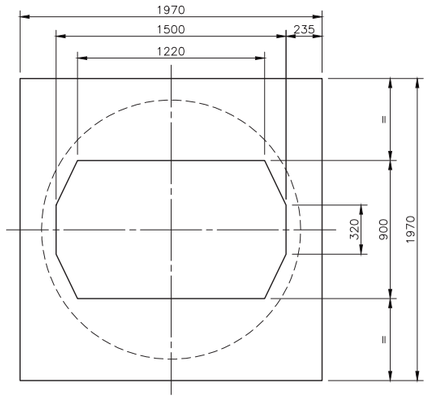


PLAN AIR VALVE PIT



PLAN – PIT WITH ASSISTED LIFT ACCESS COVER AND FRAME

FOR USE OTHER THAN IN ROADS, DRIVEWAYS AND CAR PARKS, USING RECTANGULAR ASSISTED LIFT COVER AND FRAME



PLAN CONVERSION SLAB

FOR 3 PART CLASS D AND ASSISTED LIFT COVERS

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
2. VENT PIPE SHALL BE SN8 PLAIN PVC–U PIPE TO AS/NZS 1260.
3. ONLY PRECAST REINFORCED CONCRETE COMPONENTS AUTHORISED BY THE WATER CORPORATION AND SELECTED BY THE DESIGNER TO MATCH ASSESSED SITE CONDITIONS SHALL BE PERMISSIBLE.
4. CONCRETE SHALL BE GRADE N32 TO AS 1379 PLACED IN ACCORDANCE WITH AS 3600.
5. REINFORCING STEEL TO BE NORMAL DUCTILE GRADE 500N TO AS/NZS 4671.
6. GATE VALVES SHALL BE RESILIENT SEATED AND IN ACCORDANCE WITH SPS 272. ALL FLANGES AND FLANGE DRILLING SHALL COMPLY WITH AS 4087 PN16.
7. DUCTILE IRON PIPE FITTINGS SHALL BE IN ACCORDANCE WITH SPS 106. SOCKETED FLEXIBLE JOINT D.I. PRESSURE MAIN FITTINGS SHALL MATCH AS/NZS 1477 SERIES 2 PVC PIPE DIAMETER, EXCEPT WHERE OTHERWISE SHOWN.
8. SOIL, OTHER THAN SAND, AT VALVE PIT FOUNDATION LEVEL SHALL BE EXCAVATED TO A MIN. DEPTH OF 300mm BELOW PIT BLINDING LAYER FOR REFILL WITH SAND. FOUNDATION AND REFILL MATERIAL SHALL BE COMPACTED AS PIPE UNDERLAY TO A DENSITY RATIO NOT LESS THAN 92% OF MAXIMUM MODIFIED DRY DENSITY AS DETERMINED BY AS 1289.5.2.1, AS 1289.5.4.1 AND AS 1289.5.8.1
9. AIR VALVES SHALL BE SELECTED BY THE DESIGNER FROM THE AUTHOTISED AIR VALVE PRODUCTS LISTED IN TABLE C OF THE STRATEGIC PRODUCTS REGISTER, SHALL BE RATED AT LEAST PN16 OR APPROVED EQUIVALENT AND SHALL HAVE AN INTEGRAL DN100 AS 4087 COMPLIANT CONNECTING FLANGE. AIR VALVE PIT DEPTH SHALL BE DESIGNED TO ACCOMMODATE SELECTED AIR VALVE AND VALVE CLEARANCE BELOW PIT COVER.
10. REFER DRAWING CA01–1–4 FOR TYPICAL DETAILS OF ADJUSTABLE PIPE SUPPORT STANDS, VALVE SPINDLE EXTENSIONS AND VALVE SPINDLE GUIDE BRACKETS. THE DESIGNER SHALL INPUT PIPE SUPPORT HEIGHT 'H', PIPE SUPPORT CRADLE RADIUS 'R2' AND SPINDLE EXTENSION LENGTH 'L' TOGETHER WITH VALVE PIT LOCATIONS AND LEVELS AS REQUIRED IN TABLE
11. ASSISTED LIFT COVER AND FRAME (MMR 21261) SHALL BE ACQUIRED FROM THE WATER CORPORATION.
12. PE ECCENTRIC SCOUR TEE SHALL BE CONFIGURED AS SHOWN ON DRAWING LJ01–3–1

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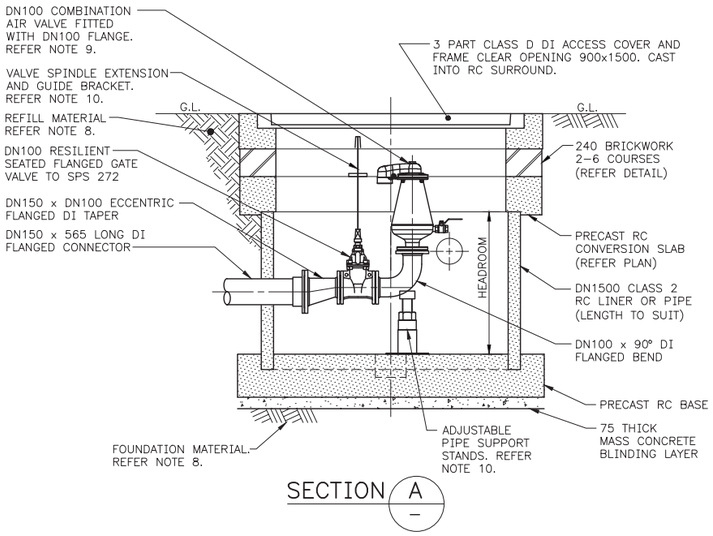
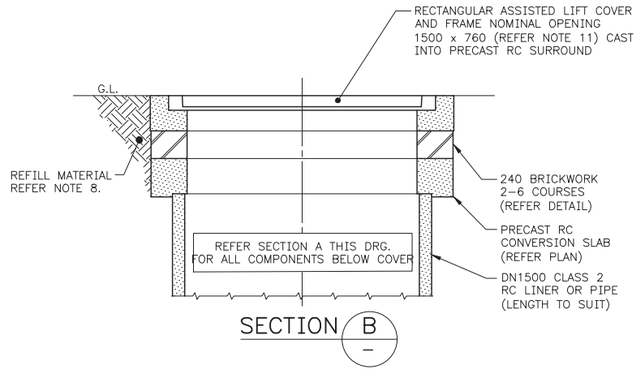
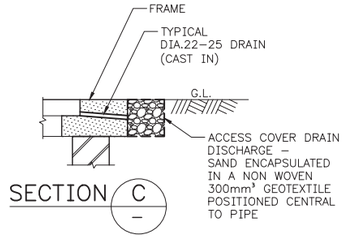


SECTION A

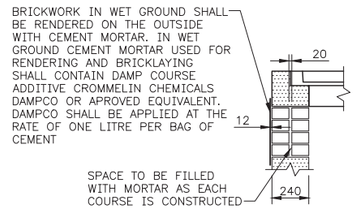


SECTION B



SECTION C

(COVER DRAIN)
(COVER NOT SHOWN)



BRICKWORK DETAIL

1 500 0 500 1000 mm
SCALE 1:20

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

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	COORDINATE SYS NONE	DES CHD R. FOURIE
ASCON SURVEY NONE	DES REF IW200060	DRN J. LU
		Q.C. CHD C. CARNEVALI

NORTH POINT

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

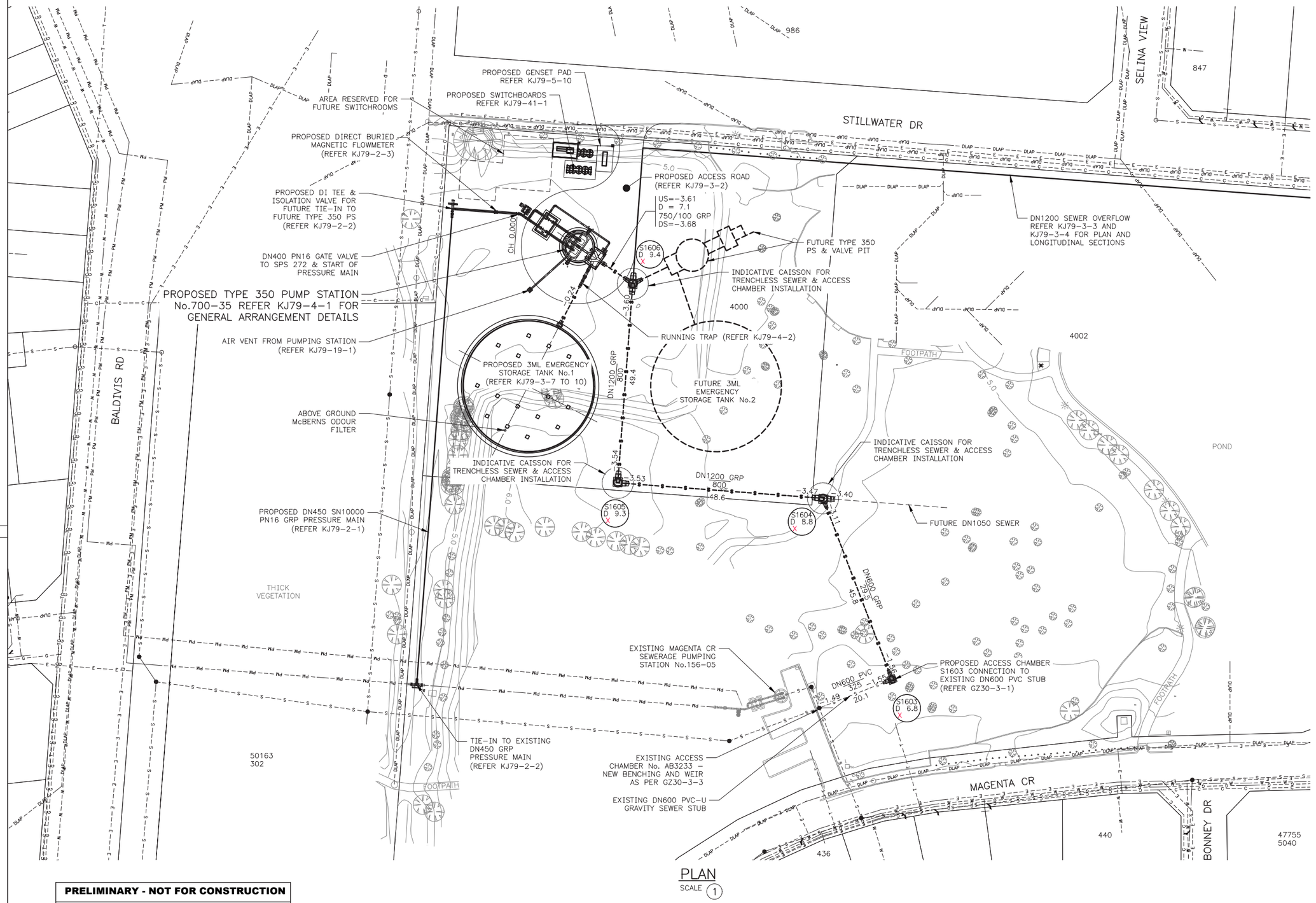
METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35 –STILLWATER DR & PM PRESSURE MAIN
AIR VALVE DETAILS

FILE	PLAN	CAD	ISSUE
PROJECT C–S01648	KJ79–2–4		A2

ORIGINAL SHEET SIZE A1

MF

566
810

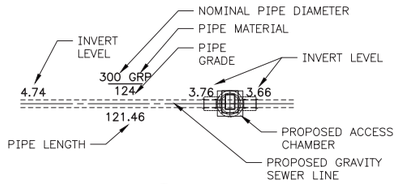


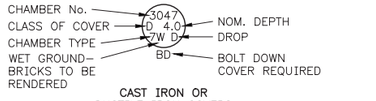
PLAN
SCALE 1

LEGEND

- PROPOSED PRESSURE MAIN
- PROPOSED GRAVITY SEWER
- FUTURE WORKS
- DAV — PROPOSED AIR VALVE
- Sc — PROPOSED SCOUR VALVE
- SURVEYED VEGETATION
- PROPOSED RETAINING WALL
- W — EXISTING BURIED WATER MAIN
- PM — EXISTING BURIED PRESSURE MAIN
- S — EXISTING BURIED GRAVITY SEWER
- T — EXISTING BURIED TELSTRA SERVICE
- HVE — EXISTING OVERHEAD POWER (HIGH VOLTAGE)
- E — EXISTING OVERHEAD POWER (LOW VOLTAGE)
- DLAP — EXISTING BURIED COUNCIL DRAIN

GRAVITY MAIN ANNOTATION





CAST IRON OR DUCTILE IRON COVERS

NOTES

1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. THE CONTRACTOR SHALL POSITIVELY LOCATE ALL SERVICES AND CONFIRM THEIR SIZES PRIOR TO CONSTRUCTION.
3. REFER TO KJ79-1-1 FOR GENERAL NOTES.
4. REFER TO KJ79-3-5 FOR GENERAL TANK NOTES.
5. GRAVITY SEWER INSTALLATION METHODOLOGY SHALL BE BY TRENCHLESS TECHNIQUES UNLESS NOTED OTHERWISE.

REFERENCE DRAWINGS

KJ79-1-1	LOCALITY PLAN & DRAWING LIST
KJ79-1-2	GENERAL NOTES
KJ79-2-1	PRESSURE MAIN - PLAN & LONGITUDINAL SECTION
KJ79-2-2	PRESSURE MAIN - DETAILS
KJ79-2-3	MAGNETIC FLOWMETER - SECTION DETAILS
KJ79-2-4	AIR VALVE DETAILS
KJ79-3-2	CIVIL EARTHWORKS / DRAINAGE - SITE PLAN & DETAILS
KJ79-3-3	DN1200 SEWER OVERFLOW - PLAN AND LONGITUDINAL SECTION SHEET 1 OF 2
KJ79-3-4	DN1200 SEWER OVERFLOW - PLAN AND LONGITUDINAL SECTION SHEET 2 OF 2
KJ79-3-5	3000m3 EMERGENCY OVERFLOW STORAGE TANK NO.1 - GENERAL TANK NOTES
KJ79-3-6	3000m3 EMERGENCY OVERFLOW STORAGE TANK NO.1 - TANK BASE PLAN AND DETAILS
KJ79-3-7	3000m3 EMERGENCY OVERFLOW STORAGE TANK NO.1 - TANK ROOF PLAN AND DETAILS
KJ79-3-8	3000m3 EMERGENCY OVERFLOW STORAGE TANK NO.1 - TANK SECTIONS, ELEVATIONS AND DETAILS
KJ79-4-1	PUMPING STATION - GENERAL ARRANGEMENT AND DETAILS - SHEET 1 OF 2
KJ79-4-2	PUMPING STATION - GENERAL ARRANGEMENT AND DETAILS - SHEET 2 OF 2
KJ79-19-1	AIR VENTILATION DETAILS
GZ30-3-1	GRAVITY SEWER INLET ACCESS CHAMBERS S1603 TO S1605 - PLAN, SECTIONS AND CHAMBER DETAILS
GZ30-3-2	GRAVITY SEWER INLET ACCESS CHAMBER S1606 - PLAN, SECTION AND CHAMBER DETAILS
GZ30-3-3	GRAVITY SEWER ACCESS CHAMBER AB3233 - MODIFICATIONS

PERTH ONE CALL SYSTEM DIAL 1100 DIAL BEFORE YOU DIG

EXACT LOCATION OF UNDERGROUND SERVICES TO BE CONFIRMED PRIOR TO COMMENCEMENT OF EXCAVATION

1 SCALE 1:500 (5 0 5 10 15 20 25 30 35 m)

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs
NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A6	22.12.20	RE-ISSUED FOR CLIENT REVIEW
A5	17.12.20	RE-ISSUED FOR SQUAD CHECK

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY JACOBS	VERTICAL DATUM AHD	DES CALC J. LU
	COORDINATE SYS MGA94-50	DES CHD R. FOURIE
ASCON SURVEY NONE	DES REF IW200060	DRN J. LU
		Q.C. CHD C. LEGERSTEE

NORTH POINT

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

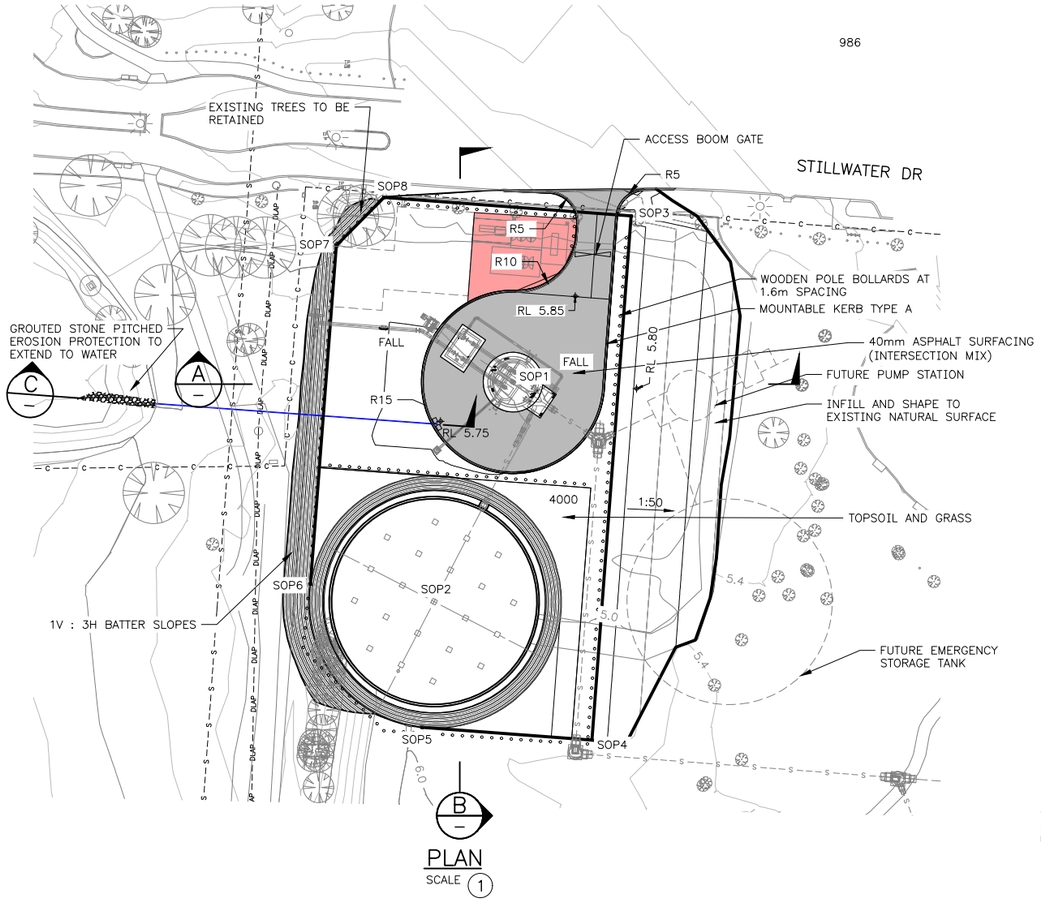
WATER CORPORATION

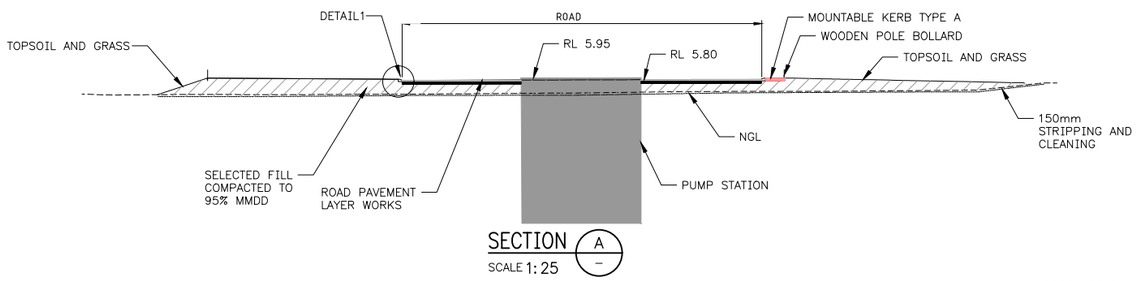
METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700-35- STILLWATER DR & PM PUMP STATION SITE PLAN

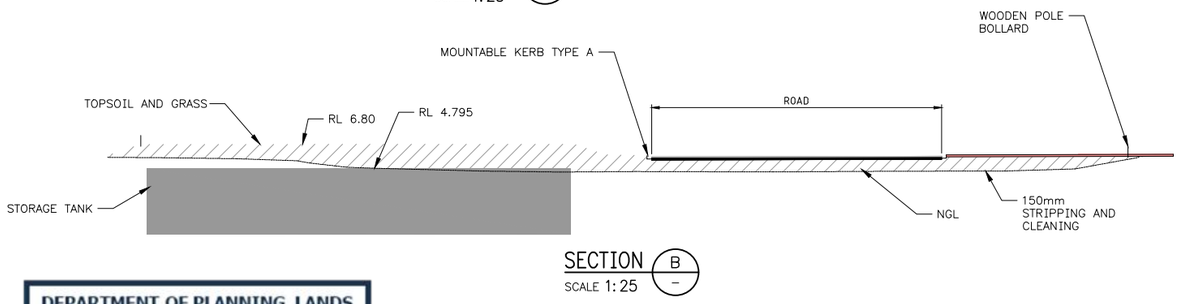
FILE	PLAN	CAD	ISSUE	ORIGINAL SHEET SIZE
PROJECT C-S01648	KJ79-3-1		A6	A1

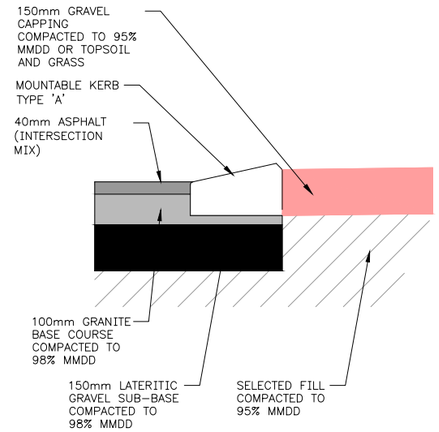
MF

566
810









NOTES

1. FOR GENERAL NOTES REFER DWG. KJ79−1−2 AND KJ79−3−5.
2. FOR AREAS WHERE GENERAL FILL IS TO BE PLACED SHALL BE CLEARED AND GRUBBED AND STRIPPED OF TOPSOIL. TOPSOIL SHALL BE STOCKPILED ON SITE FOR BATTER PROTECTION
3. BEFORE PLACING FILL THE SUBGRADE SHALL BE MOISTURE CONDITIONED, SCARIFIED AND PROFF ROLLED TO 95% MMDD
4. FOR FILL AROUND STRUCTURES REFER DWG. KJ79−3−8
5. THE ACCESS ROAD SHALL BE CONSTRUCTED OF 40MM INTERSECTION MIX ASPHALT SURFACING ON 200mm CRUSHED ROCK BASE COURSE IN ACCORDANCE WITH MODULAR SPECIFICATION "RR" AND THE PARTICULAR SPECIFICATION. ROAD EDGE KERBING SHALL BE MOUNTABLE TYPE "A" AS PER MRWA DWG. 9331−0376−3. FINISHED ROAD LEVELS SHALL BE AS INDICATED ON THE DWG.
6. THE PAD SURFACE SHALL BE COVERED WITH 150MM GRAVEL CAPPING AND SHAPED TO DRAIN TOWARDS THE CENTRE STORMWATER GRATED INLET
7. STORMWATER DRAINAGE GULLEY PIT REFER MRWA DWG. 201531−0045 STREET GULLY. GRATES AND COVERS SHALL BE TYPE "D" FOR TRAFFICABLE LOADING
8. STORMWATER PIPES SHALL BE REINFORCED CONCRETE SPIGGOT AND SOCKET CLASS 4. 300mm GROUTED STONE PITCHING EROSION PROTECTION SHALL BE INSTALLED AT TERMINATION HEADWALL EXISTING POND.
9. 150mm TREATED PINE WOODEN POLE BOLLARDS WITH DOMED TOP SHALL BE INSTALLED AT 1.6m SPACINGS AROUND THE SITE. A 6m BOOM GATE SIMILAR TO WC TYPICAL DWG. GX54−3−1 SHALL BE INSTALLED AT ENTRANCE.

LEGEND

- PROPOSED PRESSURE MAIN
- PROPOSED GRAVITY SEWER
- FUTURE WORKS
- SURVEYED VEGETATION
- EXISTING BURIED WATER MAIN
- EXISTING BURIED PRESSURE MAIN
- EXISTING BURIED GRAVITY SEWER
- EXISTING BURIED TELSTRA SERVICE
- EXISTING OVERHEAD POWER (HIGH VOLTAGE)
- EXISTING OVERHEAD POWER (LOW VOLTAGE)
- EXISTING BURIED COUNCIL DRAIN
- ASPHALT ROAD
- GRAVEL CAPPING
- WOODEN BOLLARDS

NOTES

1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE

REFERENCE DRAWINGS

KJ79−1−2	GENERAL NOTES
KJ79−3−1	PUMPING STATION SITE PLAN
KJ79−3−3	ACCESS ROAD − ROAD AND PAVEMENT DETAILS
KJ79−3−5	GENERAL TANK NOTES
GX54−3−1	ACCESS TRACK SECURITY GATE

SET−OUT TABLE

WORK POINT	EASTING	NORTHING
SOP1	389163.406	6422050.651
SOP2	389150.535	6422014.870
SOP3	389182.670	6422077.732
SOP4	389176.282	6421992.298
SOP5	389148.517	64221994.376
SOP6	389130.378	6422017.710
SOP7	389130.378	6422017.710
SOP8	389142.378	6422080.746

PRELIMINARY − NOT FOR CONSTRUCTION

Jacobs

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REV	DATE	DESCRIPTION
A2	22.12.20	ISSUED FOR CLIENT REVIEW
A1	17.12.20	ISSUED FOR INTERNAL REVIEW

PERTH ONE CALL SYSTEM DIAL 1100 DIAL BEFORE YOU DIG

WARNING !!! ASBESTOS IDENTIFIED IN THE VICINITY

WARNING !!! OVERHEAD HV POWER IN THE VICINITY

EXACT LOCATION OF UNDERGROUND SERVICES TO BE CONFIRMED PRIOR TO COMMENCEMENT OF EXCAVATION

1 SCALE 1:500 (5 0 5 10 15 20 25 30 35 m)

2 SCALE 1:250 (5 4 3 2 1 0 5 10 15 m)

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY JACOBS | VERTICAL DATUM AHD | DES CALC V. BADGUJAR
COORDINATE SYS MGA94−50 | DES CHD A. RIX
ASCON SURVEY NONE | DES REF IW200060 | DRN V. BADGUJAR | Q.C. CHD J. LU

NORTH POINT

Jacobs

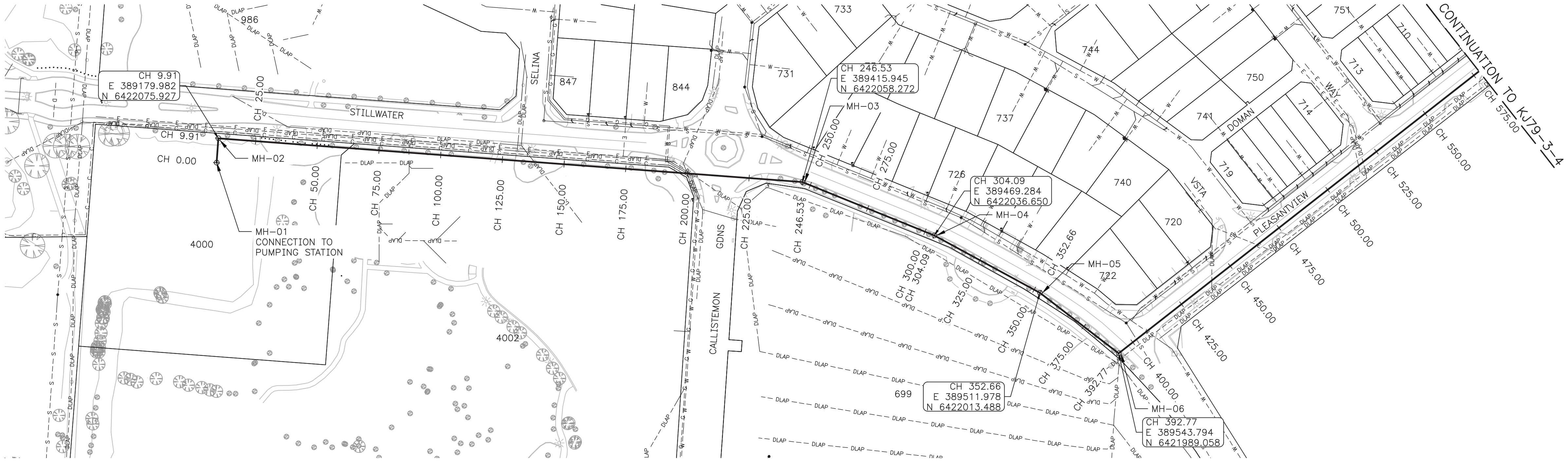
RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700−35− STILLWATER DR & PM
CIVIL EARTHWORKS / DRAINAGE
SITE PLAN & DETAILS

FILE PROJECT C−S01648 | PLAN KJ79−3−2 | CAD | ISSUE A2 | ORIGINAL SHEET SIZE A1 | MF

566
810



PLAN

SCALE (1)

LEGEND

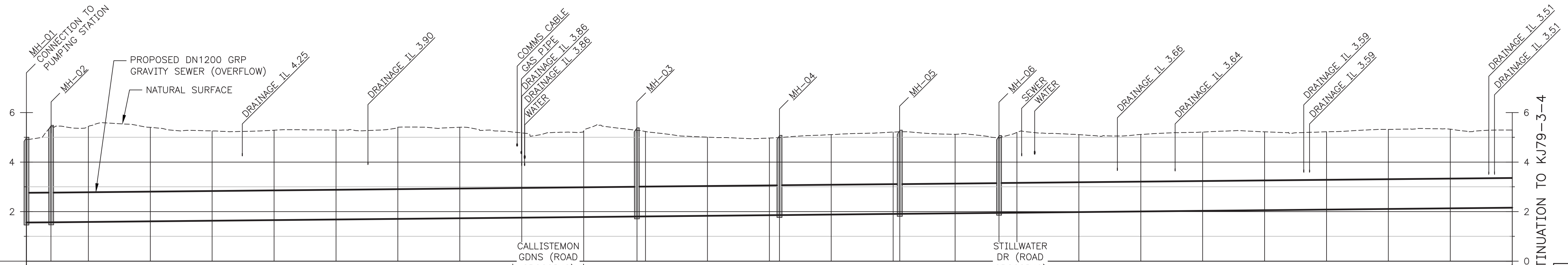
———	PROPOSED GRAVITY SEWER
— W — W —	EXISTING BURIED WATER MAIN
— DLAP — DLAP —	EXISTING BURIED DRAINAGE
— S — S —	EXISTING BURIED SEWERAGE
— G — G —	EXISTING GAS PIPELINE
— C — C —	EXISTING COMMS CABLE
— E — E —	EXISTING BURIED POWER (LOW VOLTAGE)
(symbol)	SURVEYED VEGETATION
MH	MANHOLE

NOTES

1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS, THE CONTRACTOR SHALL ENGAGE A SERVICE LOCATION COMPANY TO POSITIVELY IDENTIFY THE ALIGNMENT AND LEVEL OF ALL SERVICES ALONG THE PIPELINE ROUTE. SHOULD THIS INVESTIGATION IDENTIFY CLASHES WITH THE PROPOSED PIPELINE DESIGN, THE CONTRACTOR SHALL REFER TO THE SUPERINTENDENT FOR DIRECTION.
3. WHERE AN I.L. IS SPECIFIED FOR AN EXISTING SERVICE IT HAS BEEN OBTAINED FROM AS CONSTRUCTED PLANS, SURVEY OR POTHOLING INFORMATION AND SHALL BE TREATED AS AN APPROXIMATE LEVEL. WHERE NO I.L. IS SPECIFIED, THE DEPTH HAS BEEN ASSUMED BASED ON THE UTILITY PROVIDERS CODE OF PRACTICE.

REFERENCE DRAWINGS

KJ79-1-2	GENERAL NOTES
KJ79-3-4	DN1200 SEWER OVERFLOW – PLAN AND LONGITUDINAL SECTION SHEET 2 OF 2



DATUM RL: 0.0

PIPE DESCRIPTION: DN1200 SN10000 PN6 GRP PIPE | CALLISTEMON GDNS (ROAD CROSSING) | STILLWATER DR (VERGE) | STILLWATER DR (ROAD CROSSING) | PLEASANT VIEW PDE (ROAD – WESTBOUND LANE); overall: DN1200 SN10000 PN6 GRP PIPE

PIPE GRADE: 1:1000 | 1:1000 | 1:1000 | 1:1000 | 1:1000 | 1:1000

DEPTH TO INVERT	3.358	3.361	3.875	3.856	3.796	3.626	3.628	3.607	3.699	3.675	3.420	3.465	3.479	3.428	3.173	3.113
PIPE INVERT	1.559	1.559	1.568	1.583	1.608	1.633	1.658	1.683	1.708	1.733	1.758	1.783	1.805	1.808	1.833	1.858
NATURAL SURFACE	4.917	4.920	5.443	5.439	5.404	5.259	5.287	5.290	5.407	5.408	5.179	5.248	5.283	5.236	5.006	4.971
CHAINAGE	0.000	1.000	9.910	25.000	50.000	75.000	100.000	125.000	150.000	175.000	200.000	225.000	246.533	250.000	275.000	300.000

DEPTH TO INVERT	3.129	3.227	3.303	3.315	3.189	3.029	3.240	3.124	3.108	3.181	3.164	3.139	3.214	3.197	3.137
PIPE INVERT	1.862	1.883	1.908	1.911	1.933	1.951	1.958	1.983	2.008	2.033	2.058	2.083	2.108	2.133	2.158
NATURAL SURFACE	4.991	5.110	5.212	5.226	5.122	4.980	5.198	5.107	5.116	5.214	5.222	5.223	5.322	5.330	5.295
CHAINAGE	304.087	325.000	350.000	352.660	375.000	392.773	400.000	425.000	450.000	475.000	500.000	525.000	550.000	575.000	600.000

WATER MAIN LONGITUDINAL SECTION

HORIZONTAL SCALE: (1) VERTICAL SCALE: (2)

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED REVISION

REV	DATE	DESCRIPTION
A2	22.12.20	ISSUED FOR CLIENT REVIEW
A1	16.12.20	ISSUED FOR INTERNAL REVIEW

PERTH ONE CALL SYSTEM DIAL 1100 DIAL BEFORE YOU DIG

EXACT LOCATION OF UNDERGROUND SERVICES TO BE CONFIRMED PRIOR TO COMMENCEMENT OF EXCAVATION

(1) 10 5 0 10 20 30 40 50 60 70 m SCALE 1:1000

(2) 1 0.5 0 1 2 3 4 5 6 7 m SCALE 1:100

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY: JACOBS | VERTICAL DATUM: NONE | COORDINATE SYS: NONE | DES CALC: J. LU | DES CHD
ASCON SURVEY: NONE | DES REF: IW200060 | DRN: K. BHATT | Q.C. CHD
NORTH POINT

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700-35- STILLWATER DR & PM
DN1200 SEWER OVERFLOW
PLAN AND LONGITUDINAL SECTION SHEET 1 OF 2

FILE | PROJECT C-S01648 | PLAN KJ79-3-3 | CAD | ISSUE A2 | ORIGINAL SHEET SIZE A1 | MF

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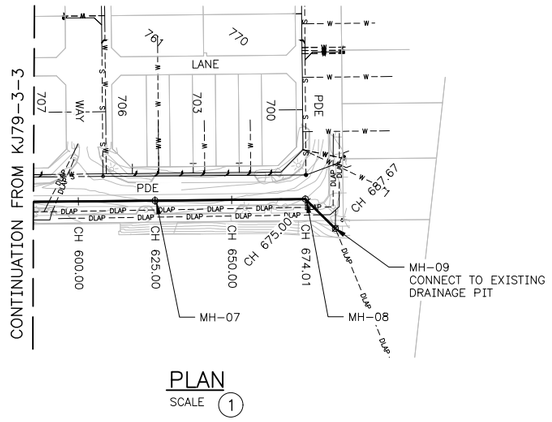
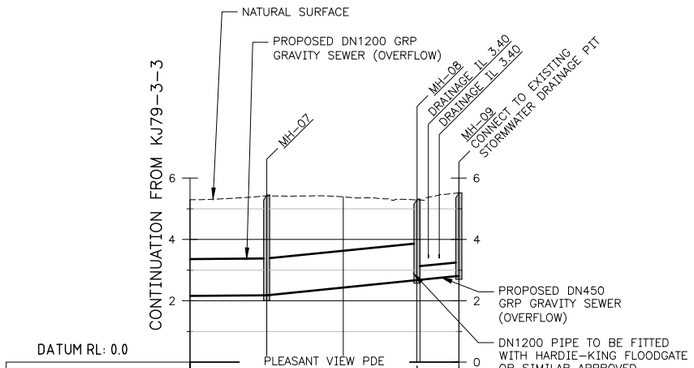
810



PLAN
SCALE (1)



DATUM RL: 0.0

PIPE DESCRIPTION	PLEASANT VIEW PDE (ROAD – WESTBOUND LANE)					
	DN1200 SN10000 PN6 GRP PIPE				DN450 SN10000 PN6 GRP PIPE	
PIPE GRADE	1:1000		1:100		1:100	
DEPTH TO INVERT	3.137	3.236	2.956	2.623	2.605	2.711
PIPE INVERT	2.158	2.183	2.433	2.673	2.683	2.800
NATURAL SURFACE	5.295	5.419	5.389	5.297	5.289	5.511
CHAINAGE	600.000	625.000	650.000	674.008	675.000	686.675

WATER MAIN LONGITUDINAL SECTION
HORIZONTAL SCALE: (1) VERTICAL SCALE: (2)

LEGEND

- PROPOSED GRAVITY SEWER
- EXISTING BURIED WATER MAIN
- EXISTING BURIED DRAINAGE
- EXISTING BURIED SEWERAGE
- EXISTING GAS PIPELINE
- EXISTING COMMS CABLE
- EXISTING BURIED POWER (LOW VOLTAGE)
- SURVEYED VEGETATION
- MH MANHOLE

NOTES

1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS, THE CONTRACTOR SHALL ENGAGE A SERVICE LOCATION COMPANY TO POSITIVELY IDENTIFY THE ALIGNMENT AND LEVEL OF ALL SERVICES ALONG THE PIPELINE ROUTE. SHOULD THIS INVESTIGATION IDENTIFY CLASHES WITH THE PROPOSED PIPELINE DESIGN, THE CONTRACTOR SHALL REFER TO THE SUPERINTENDENT FOR DIRECTION.
3. WHERE AN I.L. IS SPECIFIED FOR AN EXISTING SERVICE IT HAS BEEN OBTAINED FROM AS CONSTRUCTED PLANS, SURVEY OR POTHOLING INFORMATION AND SHALL BE TREATED AS AN APPROXIMATE LEVEL. WHERE NO I.L. IS SPECIFIED, THE DEPTH HAS BEEN ASSUMED BASED ON THE UTILITY PROVIDERS CODE OF PRACTICE.

REFERENCE DRAWINGS

KJ79-1-2	GENERAL NOTES
KJ79-3-3	DN1200 SEWER OVERFLOW – PLAN AND LONGITUDINAL SECTION SHEET 1 OF 2

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs
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REV	DATE	DESCRIPTION
A2	22.12.20	ISSUED FOR CLIENT REVIEW
A1	16.12.20	ISSUED FOR INTERNAL REVIEW

EXACT LOCATION OF UNDERGROUND SERVICES TO BE CONFIRMED PRIOR TO COMMENCEMENT OF EXCAVATION

(1) 10 5 0 10 20 30 40 50 60 70 m
SCALE 1:1000

(2) 1 0.5 0 1 2 3 4 5 6 7 m
SCALE 1:100

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY JACOBS | VERTICAL DATUM NONE | COORDINATE SYS NONE | ASCON SURVEY NONE | DES REF IW200060 | DES CALC J. LU | DES CHD | DRN K. BHATT | Q.C. CHD | NORTH POINT

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700-35- STILLWATER DR & PM
DN1200 GRAVITY SEWER
PLAN AND LONGITUDINAL SECTION SHEET 2 OF 2

FILE | PLAN KJ79-3-4 | CAD | ISSUE A2 | ORIGINAL SHEET SIZE A1
PROJECT C-S01648 | MF

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810

GENERAL

1. THE LATEST MODULAR SPECIFICATIONS, WATER CORPORATION DESIGN STANDARDS AND DRAWINGS SHALL TAKE PRECEDANCE OVER THE NOTES DRAWINGS
2. ALL LEVELS ARE AUSTRALIAN HEIGHT DATUM (AHD)
3. HORIZONTAL DATUM USED – MGA 94 (50)
4. ALL DIMENSIONS ARE IN METERS UNO
5. DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURE IN A STABLE CONITION
6. REFER TO RELEVANT GEOTECHNICAL AND GROUNDWATER REPORTS FOR IN–SITU MATERIAL INFORMATION
7. BEFORE EXCAVATION OF ANY COMPONENT OF THE WORKS THE CONTRACTOR SHALL DETECT AND MARK THE LOCATION OF ALL UNDERGROUND SERVICES
8. DESIGN DRAWINGS SHALL NOT BE SCALED. ANY DISCREPANCIES WITHIN THE DOCUMENTATION SHALL BE REFERRED TO THE PRINCIPAL FOR CLARIFICATION BEFORE PROCEEDING
9. CAST–IN LIFTING INSERTS FOR PRECAST CONCRETE SLABS TO BE DESIGNED AND SPECIFIED BY AN APPROPRIATE ENGINEER AND INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS IN ACCORDANCE WITH THE NATIONAL CODE OF PRACTICE FOR PRECAST AND CONCRETE ELEMENTS IN BUILDING CONSTRUCTION.
10. THE CONTRACTOR SHALL DESIGN ADDITIONAL REINFORCEMENT FOR ALL PRECAST COMPONENTS FOR DEMOULDING, LIFTING AND HANDLING.

GENERAL PIPING NOTES

1. INVERT LEVELS SHOWN ON LONGITUDINAL SECTIONS ARE TO BE ADHERED TO UNLESS ON–SITE CONDITIONS DETERMINE THAT COVER AND/OR GRADE CANNOT BE ACHIEVED. CHANGES REQUIRE PRIOR APPROVAL OF THE PRINCIPAL. THE PIPELINE MINIMUM GRADE IS 1 IN 500 UNO ON THE DRAWINGS.
2. PIPELINES SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE SPECIFICATION, MANUFACTURER'S RECOMMENDATIONS AND WATER CORPORATION DESIGN STANDARDS. ANY DEVIATION SHALL BE SUBJECT TO ACCEPTANCE BY THE PRINCIPAL.
3. ALL MEMBERS OF PIPE LAYING CREW TO BE ACCREDITED IN PIPE LAYING THROUGH A PIPE LAYING ACCREDITATION COURSE OR EQUIVALENT FOR THAT PIPE MATERIAL.
4. PIPEWORK "AS CONSTRUCTED" INFORMATION IS TO BE RECORDED PRIOR TO BACKFILLING, IN ACCORDANCE WITH THE SPECIFICATION.
5. REFER TO THE SPECIFICATION REGARDING ADDITIONAL ALLOWANCES FOR DISCREPANCIES IN HORIZONTAL AND VERTICAL ALIGNMENT.
6. THE CONTRACTOR SHALL ENSURE ALL OPEN TRENCHES ARE STABLE AT ALL TIMES.
7. GRP PIPE SUPPLY AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE GRP PIPELINES SPECIFICATION.
8. THRUST BLOCKS SHALL BE PROVIDED AT ALL PIPE BENDS AND BLINDS ON PIPES WITH FLEXIBLE COUPLINGS AND/OR JOINTS

FORMWORK

1. ALL FORMWORK, FALSEWORK, FINISHES AND STRIPPING WORK SHALL COMPLY WITH THE CONCRETE PROJECT SPECIFIC SPECIFICATION 'CONS' AND AS3610
2. ALL EXPOSED EDGES OF CONCRETE SHALL HAVE A 20mm x 20mm CHAMFER UNLESS NOTED OTHERWISE
3. ALL SURFACES SHALL BE FINISHED AS PER CONCRETE PROJECT SPECIFIC SPECIFICATION 'CONS' SECTION 7

REINFORCEMENT

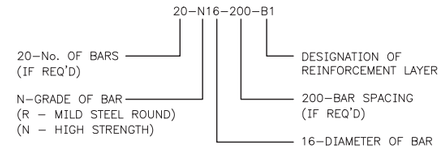
1. THE REINFORCEMENT DENOTATION ON THE DRAWINGS IS AS FOLLOWS:
   N – DENOTES HIGH STRENGTH DEFORMED BARS GRADE D500N TO AS/NZS4671 UNLESS NOTED OTHERWISE
   R–DENOTES MILD STEEL ROUND BARS GRADE 250 TO AS AS/NZS 4671
   RL OR SL–DENOTES WELDED WIRE FABRIC (MESH) GRADE D500L TO AS/NZS 4671
   Tm–DENOTES TRENCH MESH GRADE D500L TO AS/NZS 4671
   N10 REINFORCEMENT MAY BE GRADE, D500N OR D500L
2. SPLICES IN REINFORCEMENT SHALL BE PROVIDED IN THOSE POSITIONS SHOWN ON THE DRAWINGS. MINIMUM LAP LENGTHS SHALL BE AS SHOWN ON THE DRAWINGS. ANY LAP LENGTH NOT SPECIFIED ON THE DRAWINGS SHALL BE AS TABLED BELOW:

BAR SIZE	LAP LENGTH (mm)	COG STRAIGHT EXTENSION (mm)
N12	500	170
N16	650	210
N20	900	250
N24	1100	300
N28	1300	350
N32	1600	400
TRENCH MESH	500	–

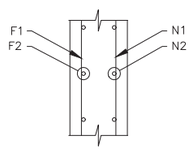
3. SPLICES IN REINFORCING FABRIC SHOULD BE OVER LAPPED NOT LESS THAN ONE MESH SPACING PLUS 25mm. LAPS AND SPLICES SHOULD BE MADE ONLY IN THE POSITIONS AND TO THE DIMENSIONS SHOWN OR NOTED ON THE DESIGN OR STANDARD DRAWINGS. LAPS TO BE STAGGERED WHEREVER POSSIBLE. WHERE BARS WITH DIFFERENT DIAMETERS LAP, THE LAP LENGTH FOR THE SMALLER BAR DIAMETER SHALL APPLY
4. ALL REINFORCING BARS SHALL BE STRAIGHT UNLESS SHOWN OTHERWISE ON THE DRAWINGS. WHERE COGS ARE SHOWN ON THE DRAWINGS, THE COG LENGTH SHALL BE IN ACCORDANCE WITH THE ABOVE TABLE UNLESS NOTED OTHERWISE
5. REINFORCING BARS SHALL BE EQUALLY SPACED UNLESS SHOWN OTHERWISE ON THE DRAWINGS. WHERE REINFORCEMENT IS TO BE EPOXIED INTO CONCRETE, USE HILTI HIT RE–500 V3 OR APPROVED EQUIVALENT IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATION. EMBEDMENT DEPTH TO BE SPECIFIED ON THE DRAWINGS. CLEAN OUT HOLES THOROUGHLY BEFORE INSERTING EPOXY
6. COVER TO REINFORCEMENT U.N.O:

TANK BASE AND SLAB	60mm TOP, 80mm BOTTOM
TOPPING SLAB	50mm TOP
COLUMNS & BEAMS	60mm TO LIGS UNO
WALLS	60mm INTERNAL, 70mm EXTERNAL
THRUST BLOCKS	70mm ALL FACES
ACCESS CHAMBER SLABS	50mm TOP, 80mm BOTTOM
ACCESS CHAMBER WALLS	50mm INTERNAL, 70mm EXTERNAL
PIPE ENCASEMENT	70mm ALL FACES

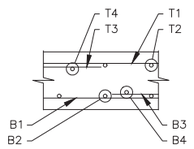
7. CONCRETE REINFORCEMENT SHALL BE SUPPORTED ON MAX FRANK PREMIUM SPACERS, REFER CONCRETE PROJECT SPECIFIC SPECIFICATION 'CONS' SECTION 9.5
8. REINFORCEMENT REFERENCE CODE AS FOLLOWS:



9. EXPLANATION OF NOTATION FOR. REINFORCEMENT:



EXAMPLE WALL



EXAMPLE SLAB

10. AT ALL RE–ENTRANT CORNERS INCLUDING PENETRATIONS IN SLABS AND WALLS, ADDITIONAL REINFORCEMENT SHALL BE PLACED DIAGONALLY AND CENTRALLY ACROSS THE CORNER FOR EACH LAYER OF REINFORCEMENT AS SPECIFIED ON THE DESIGN DRAWING
11. WELDING OF REINFORCEMENT IS NOT PERMITTED UNLESS NOTED ON THE DESIGN DRAWINGS

CONCRETE

1. "TOC" DENOTES THE TOP OF THE CONCRETE FINISHED SURFACE BEFORE GROUTING
2. ALL CONCRETE SHALL BE PREPARED IN ACCORDANCE WITH THE CONCRETE PROJECT SPECIFIC SPECIFICATION. 'CONS'
3. EXPOSURE CLASSIFICATIONS (TO SECTION 4 AS3600, SECTION 4 AS5100.5 AND SECTION 4 AS3755)
   INTERNAL EXPOSED SURFACES – CLASS D
   EXTERNAL EXPOSED SURFACES – CLASS C1
4. CONCTETE MIXES WHERE NOT NOTED ON DRAWINGS SHALL BE AS PER CONCRETE PROJECT SPECIFIC SPECIFICATION 'CONS':

ELEMENT	MIX TYPE	MAXIMUM SLUMP	AGGREGATE	CONCRETE GRADE
TOPPING SLAB	5	80mm	10mm	S50LH
COLUMNS/WALLS	4	120mm	20mm	S50LH
TANK BASE	3	80mm	20mm	S50LH

5. ADDITIVES SHALL NOT BE USED IN THE MIX WITHOUT PRIOR APPROVAL OF THE PRINCIPAL
6. CONCRETE POUR SEQUENCES SHALL BE APPROVED BY THE PRINCIPAL PRIOR TO CONCRETE POUR
7. CONCRETE CURING PROCEDURES SHALL BE APPROVED BY THE PRINCIPAL PRIOR TO POURING CONCRETE AND SHALL BE IN ACCORDANCE WITH THE CONCRETE PROJECT SPECIFIC SPECIFICATION
8. THE MAXIMUM FREE FALL OF CONCRETE DURING PLACING SHALL NOT EXCEED 2.5 METRES WITHOUT APPROVAL OF THE PRINCIPAL. BEYOND THIS, SUITABLE CHUTES SHALL BE USED
9. ALL CONSTRUCTION AND MOVEMENT JOINTS SHALL BE PROVIDED WHERE SHOWN ON THE DRAWINGS. ANY ADDITIONAL CONSTRUCTION JOINTS ARE TO BE APPROVED BY THE PRINCIPAL PRIOR TO POURING CONCRETE
10. BLINDING CONCRETE (50mm MINIMUM THICKNESS) OR A WATERPROOF MEMBRANE (0.2mm THICK FORTECON OR SIMILAR APPROVED MEMBRANE) SHALL BE PLACED UNDER ALL FOOTINGS AND SLABS WHERE THE MINIMUM PLAN DIMENSION IS GREATER THAN 1500mm, AND ELSEWHERE WHERE SHOWN ON THE DRAWINGS. MINIMUM BLINDING CONCRETE STRENGTH SHALL BE 15MPA. ALL JOINTS TO BE FULLY TAPED
11. ALL CONCRETE, MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CONCRETE PROJECT SPECIFIC SPECIFICATION 'CONS', AS 3600, AS 5100.5 & AS 3735
12. BEFORE POURING CONCRETE, THE CONTRACTOR SHALL VERIFY REQUIREMENTS FOR ALL EMBEDDED ITEMS, HOLDING DOWN BOLTS, PENETRATIONS ETC.
13. ALL SURFACE FINISHES AND TOLERANCES SHALL BE FINISHED IN ACCORDANCE WITH THE CONCRETE PROJECT SPECIFIC SPECIFICATION 'CONS' UNLESS NOTED OTHERWISE ON THE DRAWINGS
14. MINIMUM CONCRETE STRIPPING TIMES SHALL BE AS DEFINED IN CONCRETE PROJECT SPECIFIC SPECIFICATION 'CONS'
15. THE SIZE OF CONCRETE ELEMENTS AS DENOTED IN THE DRAWINGS DOES NOT INCLUDE THE THICKNESS OF ANY APPLIED FINISHES
16. CONCRETE SHALL BE CURED AS PER SECTION 10.5.9 OF CONCRETE PROJECT SPECIFIC SPECIFICATION 'CONS'.
17. ALL CONCRETE SHALL BE VIBRATED.

CONSTRUCTION JOINT PREPARATION

1. FOR HORIZONTAL JOINTS, THE SURFACE OF THE CONCRETE SHALL BE PREPARED BY GREEN CUTTING (USING HIGH VELOCITY AIR/WATER JETS OR VIGOROUS WIRE BRUSHING) TO REMOVE ALL LAITANCE AND INFERIOR SURFACE CONCRETE AFTER THE CONCRETE HAS HARDENED SUFFICIENTLY TO PREVENT LOOSENING OF ANY AGGREGATE WHICH IS NOT REMOVED. THE TIME DURING WHICH GREEN CUTTING IS FEASIBLE MAY BE EXTENDED BY THE APPLICATION OF A SURFACE RETARDER
2. FOR OTHER THAN HORIZONTAL JOINTS A RETARDER SHALL BE USED TO PREPARE THE JOINT. IMMEDIATELY ON REMOVAL OF THE FORMWORK THE SURFACE SHALL BE PREPARED IN A SIMILAR MANNER TO HORIZONTAL JOINTS

PENETRATION AND CAST–IN ITEMS

1. WHERE PENETRATIONS OR CAST–IN ITEMS DISPLACE REINFORCEMENT, THE ARRANGEMENT OF THE REINFORCEMENT SHALL BE APPROVED BY THE PRINCIPAL. UNDER NO CIRCUMSTANCES IS THE REINFORCEMENT TO BE DISPLACED INTO THE COVER ZONE OR ALLOWED TO BE IN CONTACT WITH ANY PENETRATION OR CAST IN ITEM
2. NO HOLES, CHASES OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE DRAWINGS SHALL BE MADE IN THE CONCRETE WITHOUT APPROVAL OF THE PRINCIPAL
3. ALL EMBEDDED STEELWORK OTHER THAN REINFORCEMENT SHALL BE GRADE 250 OR 300 AND SHALL BE HOT DIPPED GALVANISED TO AS4680 AFTER FABRICATION UNLESS NOTED OTHERWISE ON THE DRAWINGS
4. AS A MINIMUM AT ALL PENETRATIONS AND RE–ENTRANT CORNERS, SUPPLY RE–ENTRANT BARS. PROVIDE 2 N16 x 1400mm LONG ON EACH LAYER OF REINFORCEMENT UNLESS NOTED OTHERWISE ON THE DRAWINGS

DESIGN CRITERIA

1. THE ASA DESIGN STANDARDS APPLYING TO THE STRUCTURAL WORK SHOWN ON THESE DRAWINGS INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO:

AS/NZS 1170.0–2002	GENERAL PRINCIPLES
AS/NZS 1170.1–2002	PERMANENT, IMPOSED AND OTHER ACTIONS
AS/NZS 1170.2–2011	WIND ACTIONS
AS/NZS 1170.4–2007	EARTHQUAKE ACTIONS
AS 3600–2018	CONCRETE STRUCTURES
AS 4100–1998	STEEL STRUCTURES
AS 3735–2001	CONCRETE STRUCTURES FOR RETAINING LIQUIDS
NZS 3106–2009	DESIGN OF CONCRETE STRUCTURES FOR THE STORAGE OF LIQUIDS.

2. ROOF HAS BEEN DESIGNED FOR A 1.5 kPa LIVE LOAD DURING CONSTRUCTION OF TOPPING SLAB. ROOF HAS BEEN DESIGNED FOR A LIVE LOAD OF 10kPa TO COVER THE USE OF A 3T ROLLER DURING BACKFILL OPERATIONS AND 3T TRACTOR DURING MAINTENANCE OPERATIONS
3. EARTHQUAKE LOAD:
   HAZARD FACTOR 0.09
   SITE SUB–SOIL CLASS Ce
   PROBABILITY FACTOR: 1.8 ULS/1.3 SLS
   EARTHQUAKE DESIGN CATEGORY: II
   IMPORTANCE LEVEL 4

SITE PREPARATION/GEOTECHNICAL

1. THE ALLOWABLE BEARING PRESSURE FOR PREPARED FOUNDATIONS IS ASSUMED TO BE 300kPa.

TESTING

1. TESTING OF TANK IN ACCORDANCE WITH AS3735 AND DS61..

LEGEND

CJ – CONSTRUCTION JOINT
DIMN – DIMENSION
DPM – DAMP PROOF MEMBRANE
DRG – DRAWING
FGL – FINISHED GROUND LEVEL
IJ – ISOLATION JOINT
DCJ – DOWELLED CONSTRUCTION JOINT
DEJ – DOWELLED EXPANSION JOINT
HD – HOLDING DOWN
ID – INSIDE DIAMETER
IL – INVERT LEVEL
MS – MILD STEEL
OD – OUTSIDE DIAMETER
RL – REDUCED LEVEL
SCJ – SLAB CONSTRUCTION JOINT
TOC – TOP OF CONCRETE
TOS – TOP OF STEEL
TWL – TOP WATER LEVEL
TYP – TYPICAL
WCJ – WALL CONSTRUCTION JOINT
WP – WORK POINT
WPM – WATERPROOF MEMBRANE

PRELIMINARY - NOT FOR CONSTRUCTION

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REV	DATE	DESCRIPTION
A2	22.12.20	ISSUED FOR CLIENT REVIEW
A1	17.12.20	ISSUED FOR SQUAD CHECK

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE
VERTICAL DATUM NONE
COORDINATE SYS NONE
ASCON SURVEY NONE
DES REF IW200060
DES CALC P. MOLONY
DES CHD M. O'CONNOR
DRN P. MOLONY
Q.C. CHD J. LU
NORTH POINT

Jacobs

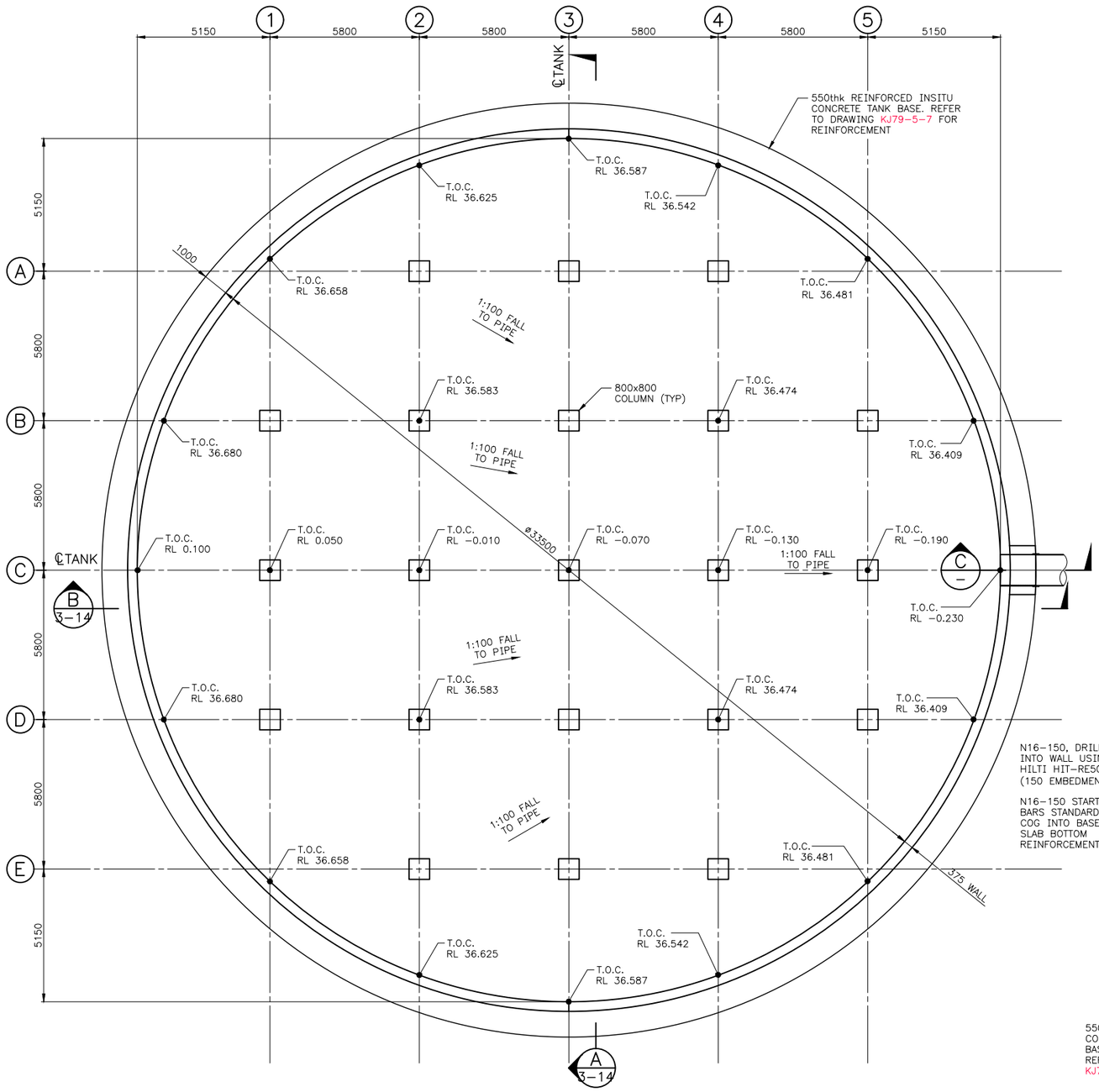
RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM
3000m3 EMERGENCY OVERFLOW STORAGE TANK NO.1
GENERAL TANK NOTES

FILE PROJECT C–S01648
PLAN KJ79–3–5
CAD
ISSUE A2
ORIGINAL SHEET SIZE A1
MF

566
810

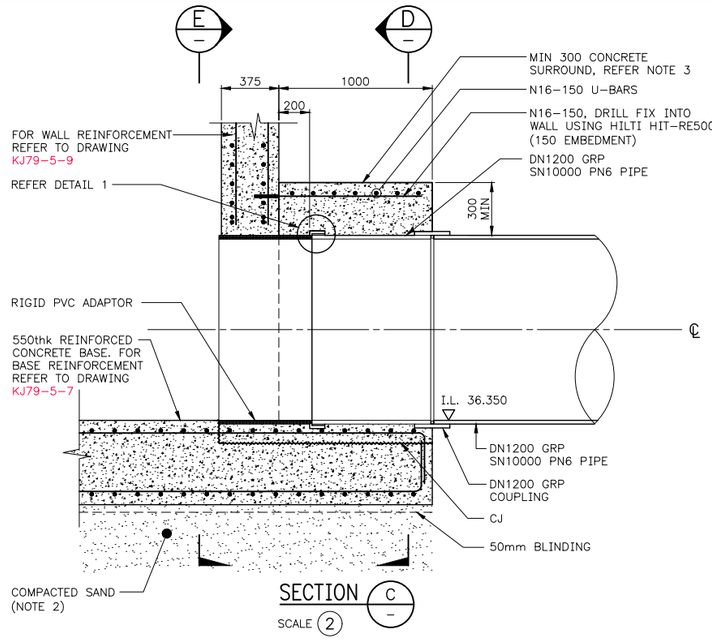


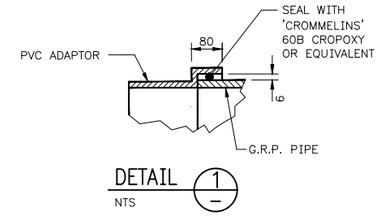
FLOOR PLAN

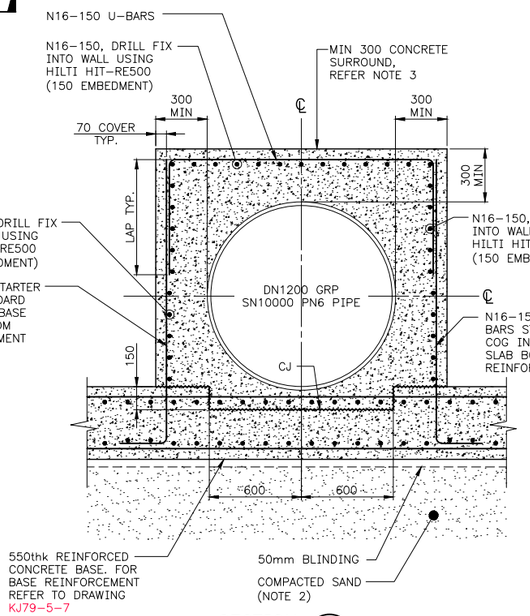
SCALE (1)

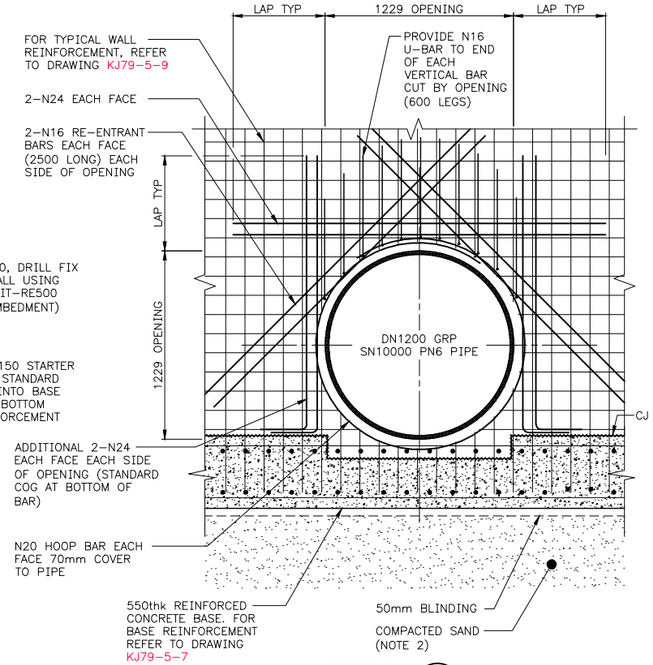
LEGEND

T.O.C. DENOTES TOP OF CONCRETE (BASE SLAB)









NOTES

1. FOR GENERAL NOTES REFER TO DRAWING KJ79-3-5.
2. FOR FOUNDATION TREATMENT REFER TO THE MODULAR SPEC 'BEW'.
3. CONCRETE ENCASEMENT SHALL BE S50LH (MIX TYPE 3) AS PER CONCRETE PROJECT SPECIFIC SPECIFICATION 'CONS'.

REFERENCE DRAWINGS

KJ79-3-1	PUMP STATION SITE PLAN
KJ79-3-5	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 GENERAL NOTES
KJ79-3-7	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 TANK ROOF PLAN AND DETAILS
KJ79-3-8	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 TANK SECTIONS, ELEVATIONS AND DETAILS
KJ79-5-7	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 TANK BASE REINFORCEMENT
KJ79-5-8	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 TANK BEAM ELEVATIONS
KJ79-5-9	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 TANK BASE, WALL SECTION AND DETAILS

(1) 10.5 0 1 2 3 4 5 6 7 m SCALE 1:100

(2) 500 0 500 1000 mm SCALE 1:20

PRELIMINARY - NOT FOR CONSTRUCTION

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REV	DATE	DESCRIPTION
A2	22.12.20	ISSUED FOR CLIENT REVIEW
A1	17.12.20	ISSUED FOR INTERNAL REVIEW

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM AHD	DES CALC P. MOLONY	NORTH POINT
	COORDINATE SYS NONE	DES CHD M. O'CONNOR	
ASCON SURVEY NONE	DES REF IW200060	DRN P. MOLONY	
		Q.C. CHD J. LU	

Jacobs

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CONSULTANT PROJECT MANAGER

APPROVED

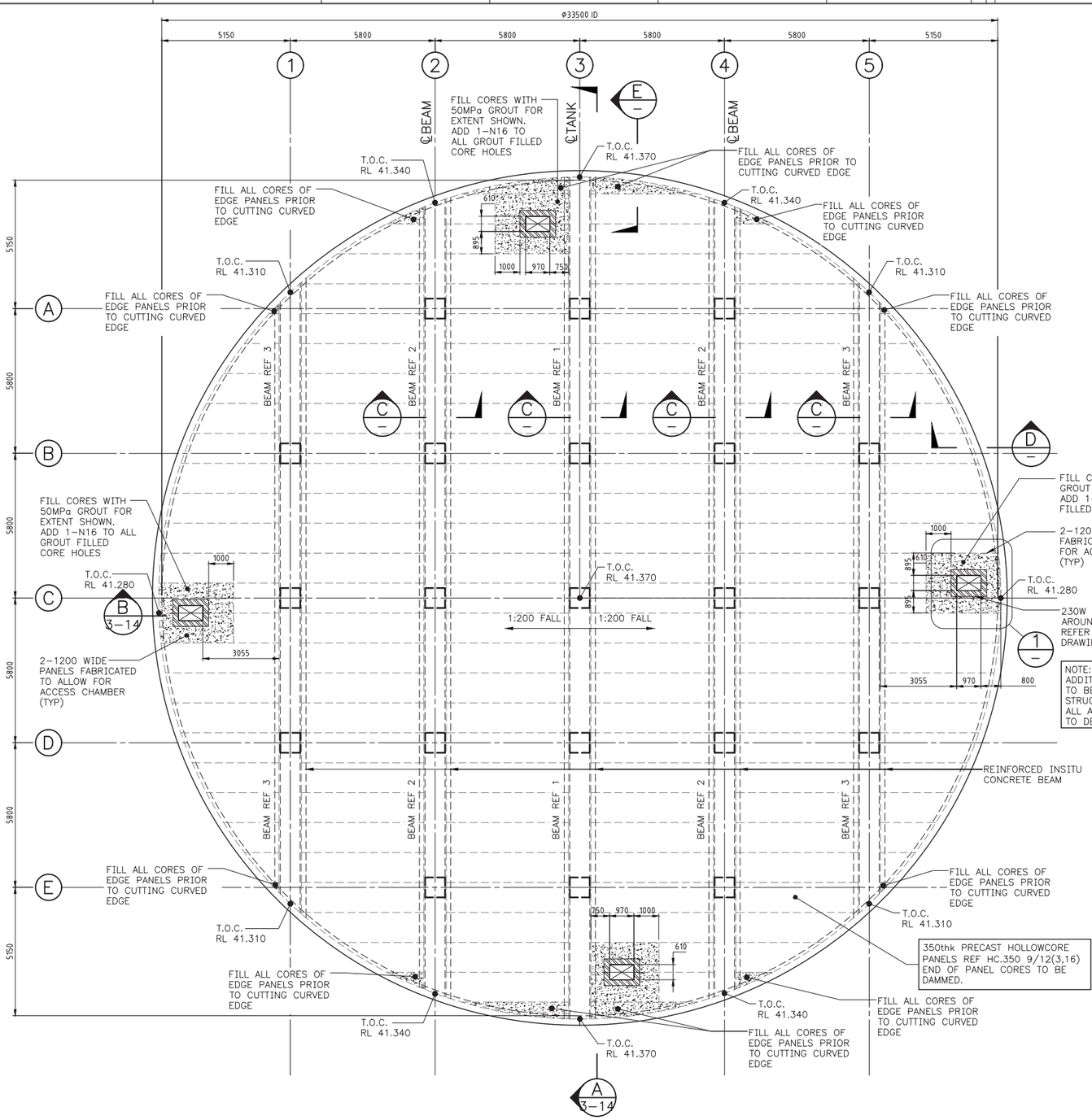
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700-35- STILLWATER DR & PM
3000m3 EMERGENCY OVERFLOW STORAGE TANK NO.1
TANK BASE PLAN AND DETAILS

FILE	PLAN	CAD	ISSUE	ORIGINAL SHEET SIZE
PROJECT C-S01648	KJ79-3-6		A2	A1

566
810



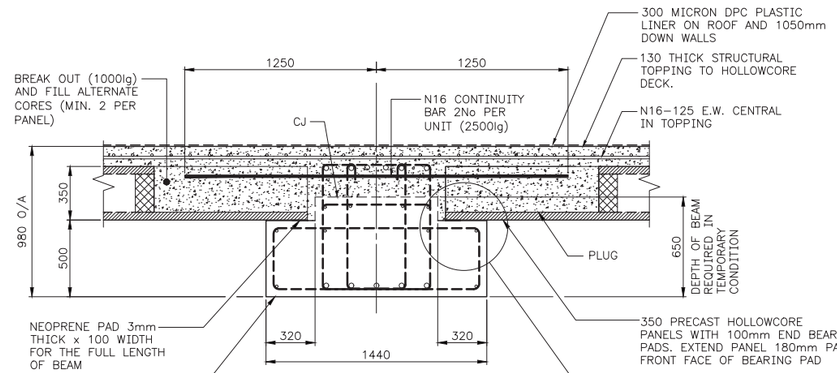
ROOF PLAN

SCALE (1)

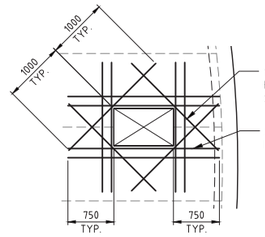
LEGEND

T.O.C. DENOTES TOP OF CONCRETE (TOPPING SLAB)

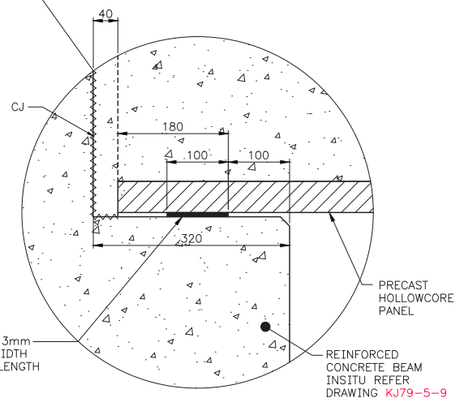
EXTENT OF CORES FILLED WITH 50MPa GROUT



SECTION C — SCALE (3)

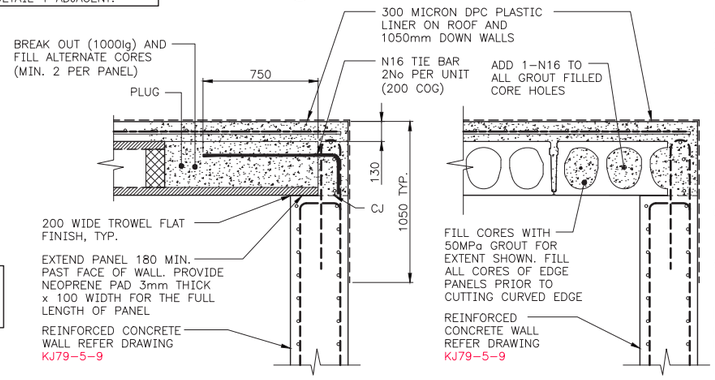


DETAIL 1 — SCALE (2)



HOLLOWCORE PANEL TO BEAM BEARING DETAIL

SCALE (4)



SECTION D — SCALE (3)

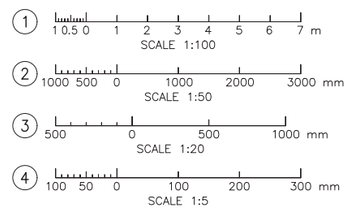
SECTION E — SCALE (3)

NOTES

1. FOR GENERAL NOTES REFER TO DRAWING KJ79–3–5.
2. INSTALL HOLLOWCORE PANELS IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS. PANELS TO BE INSTALLED IN ALTERNATE MANNER NOT TO ECCENTRICALLY LOAD THE CONCRETE BEAM.
3. CONTRACTOR TO ENSURE NOT TO ECCENTRICALLY LOAD THE HOLLOWCORE PANELS OR CONCRETE BEAMS DURING BACKFILLING.
4. ACCESS CHAMBER OPENING TO BE LOCATED EVENLY BETWEEN 2 PLANKS AS SHOWN. MAXIMUM 1200 WIDE. MINIMUM 11 BOTTOM AND 2 TOP STRAND TO REMAIN UNCUT ON EACH PANEL.
5. CONTRACTOR TO ENSURE STABILITY AND FLOATATION DOES NOT OCCUR DURING CONSTRUCTION.
6. LIFTING LUGS POSITIONS ON PRECAST HOLLOWCORE PANELS TO BE SPECIFIED BY THE MANUFACTURER.
7. FOR BEAM REINFORCEMENT REFER TO DRAWINGS KJ79–5–8 AND KJ79–5–9.
8. TOP OF HOLLOWCORE PANELS SHALL BE THOROUGHLY CLEANED OF ALL DUST AND GREASE PRIOR TO POURING TOPPING SLAB.

REFERENCE DRAWINGS

KJ79–3–1	PUMP STATION SITE PLAN
KJ79–3–5	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 GENERAL NOTES
KJ79–3–6	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 TANK BASE PLAN AND DETAILS
KJ79–3–8	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 TANK SECTIONS, ELEVATIONS AND DETAILS
KJ79–5–7	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 TANK BASE REINFORCEMENT
KJ79–5–8	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 TANK BEAM ELEVATIONS
KJ79–5–9	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 TANK BASE, WALL SECTION AND DETAILS



PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

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A2	22.12.20	ISSUED FOR CLIENT REVIEW
A1	17.12.20	ISSUED FOR INTERNAL REVIEW

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM AHD / COORDINATE SYS MGA94–50	DES CALC P. MOLONY / DES CHD M. O'CONNOR
ASCON SURVEY NONE	DES REF IW200060	DRN P. MOLONY / Q.C. CHD J. LU

NORTH POINT

Jacobs

RECOMMENDED

CONSULTANT PROJECT MANAGER

APPROVED

CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

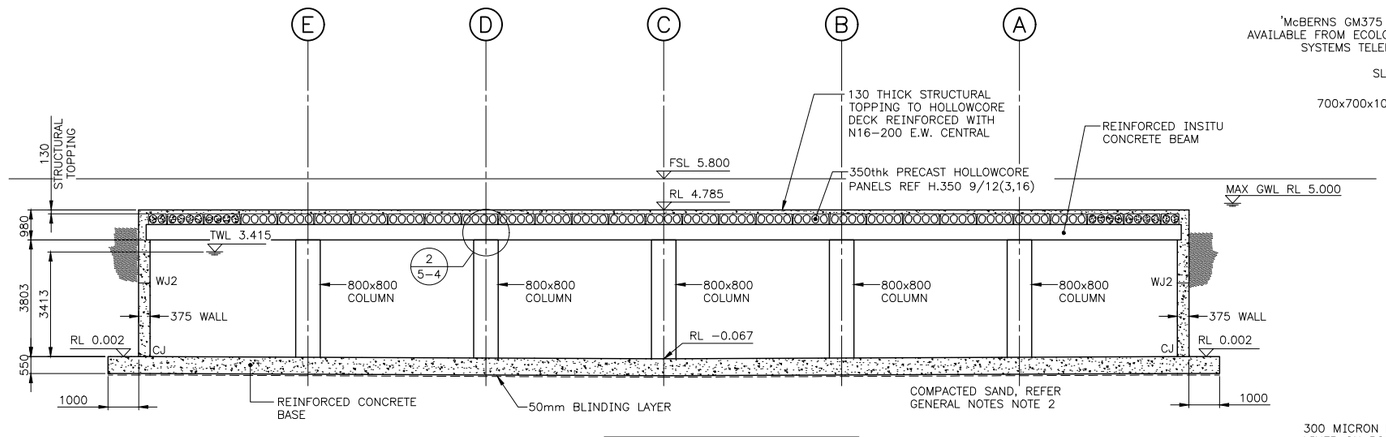
METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM
3000m3 EMERGENCY OVERFLOW STORAGE TANK NO.1
TANK ROOF PLAN AND DETAILS

FILE	PLAN	CAD	ISSUE
PROJECT C–S01648	KJ79–3–7		A2

ORIGINAL SHEET SIZE A1

MF

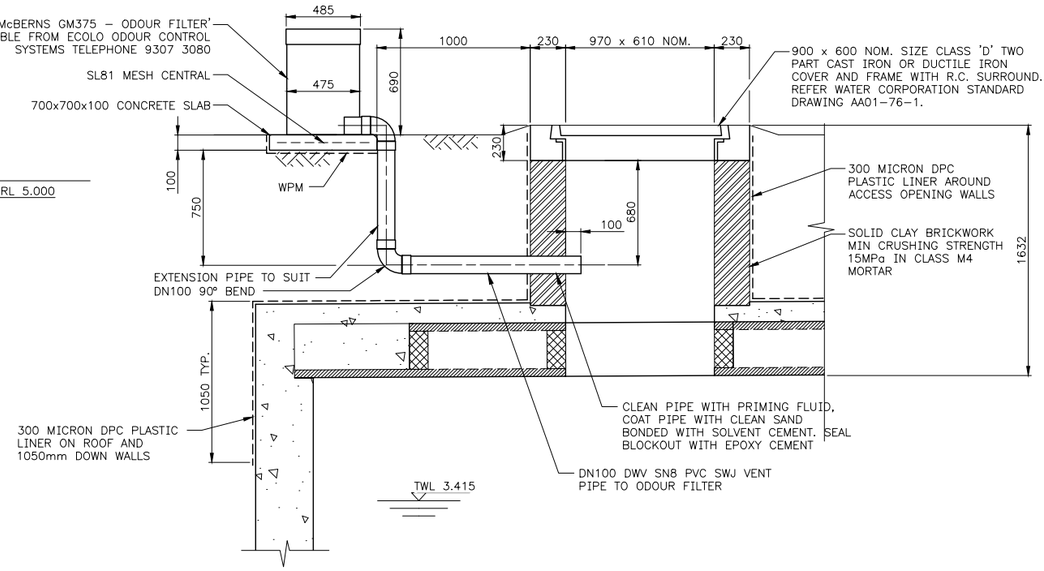
566
810



SOIL UNDER TANK BASE TO BE COMPACTED TO MINIMUM 95% MMDD

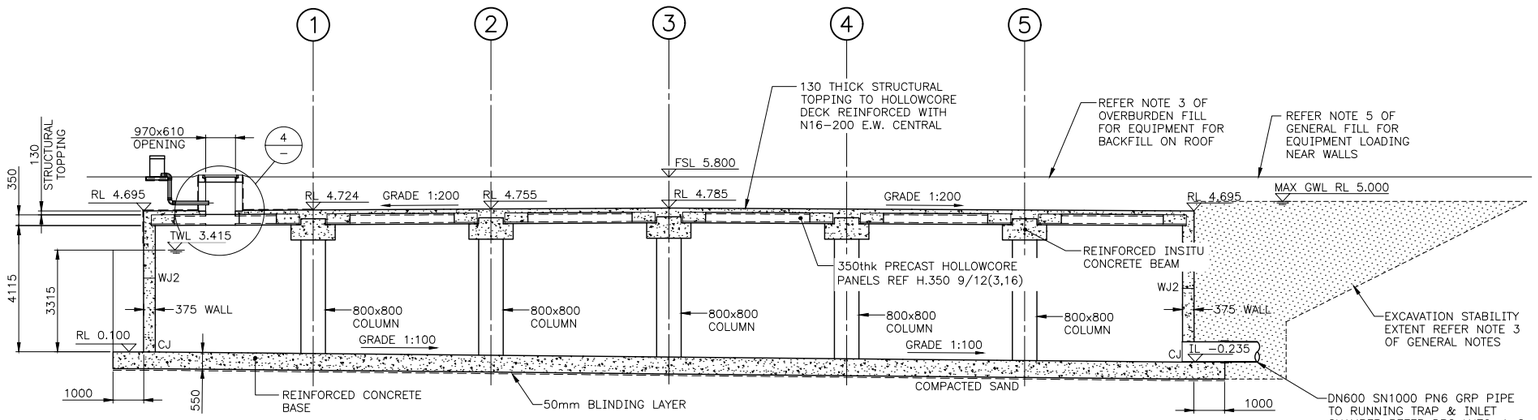
SECTIONAL ELEVATION A 3.12 / A 3.13

SCALE (1)



DETAIL 4 / –

SCALE (2)



SECTIONAL ELEVATION B 3.12 / B 3.13

SCALE (1)

NOTE

DEWATERING NOT TO BE TURNED OFF UNTILL ALL BACKFILL OPERATIONS, INCLUDING OVERBURDEN FILL, HAS BEEN COMPLETED

GENERAL FILL

1. WHERE GENERAL FILL IS TO BE PLACED DIRECTLY ON THE FOUNDATION SURFACE, THAT FOUNDATION SURFACE SHALL BE MOISTENED, SCARIFIED AND PROOF ROLLED TO 95% MMDD OR THE SATISFACTION OF THE SUPERINTENDENT BEFORE THE STRUCTURE OR NEW FILL IS PLACED UPON IT.
2. WHERE GENERAL FILL IS TO BE PLACED AROUND THE TANK OR OTHER STRUCTURES, THE FILL SHALL BE COMPACTED IN LAYERS OF A THICKNESS WHICH FULL COMPACTION CAN BE DETERMINED BY TESTING AND ACHIEVED.
3. FILL SHALL BE MOISTURE CONDITIONED TO THE OPTIMUM MOISTURE CONDITION (OMC) AND COMPACTED TO 95% MMDD OR THE SATISFACTION OF THE SUPERINTENDENT AROUND THE STRUCTURE.
4. BEFORE NEW FILL IS PLACED UPON IT THE SURFACE SHALL BE SCARIFIED TO PROVIDE ADEQUATE BOND BETWEEN LAYER WORKS.
5. COMPACTION EQUIPMENT SHALL BE SIZED SUCH A MAXIMUM SURCHARGE LOADING ON THE TANK WALLS OF 20 kPa IS NOT EXCEEDED.

OVERBURDEN FILL

1. OVERBURDEN FILL SHALL BE SIMILAR TO GENERAL FILL MATERIAL BUT IS TO BE PLACED DIRECTLY ON THE TANK ROOF.
2. OVERBURDEN FILL SHALL BE PLACED FROM THE EXCAVATION FACE OR WITH SMALL BOBCAT OR SIMILAR APPROVED, NO LARGE EARTH MOVING EQUIPMENT SHALL TRAVERSE THE TANK ROOF.
3. LIGHT COMPACTION EQUIPMENT WITH MAXIMUM WEIGHT OF 3T OR COMPACTIVE EFFORT OF 10kPa OR LESS SHALL BE USED.
4. OVERBURDEN FILL SHALL BE MOISTURE CONDITIONED TO THE OPTIMUM MOISTURE CONDITION (OMC) AND COMPACTED TO 90% MMDD OR THE SATISFACTION OF THE SUPERINTENDENT ABOVE THE STRUCTURE.
5. AN INITIAL MINIMUM LAYER THICKNESS OF 300mm SHALL BE LOOSELY PLACED ABOVE THE RESERVOIR ROOF BEFORE USE OF SMALL LIGHT WEIGHT EQUIPMENT IS USED

GENERAL NOTES

1. REFER TO DRAWING KJ79–3–1 FOR GENERAL NOTES.
2. FOR FOUNDATION TREATMENT REFER TO THE MODULAR SPEC 'BEW' 9.4.2.
3. FOR EXCAVATION STABILITY AND EXTENT REFER MODULAR SPEC 'BEW' 7.2 AND 'BEW' 7.7.
4. FOR NOTES ON HOLLOWCORE PANELS REFER TO DRAWING KJ79–3–9.

REFERENCE DRAWINGS

KJ79–3–1	PUMP STATION SITE PLAN
KJ79–3–5	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 GENERAL NOTES
KJ79–3–6	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 TANK BASE PLAN AND DETAILS
KJ79–3–7	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 TANK ROOF PLAN AND DETAILS
KJ79–4–2	PUMPING STATION GENERAL ARRANGEMENT AND DETAILS – SHEET 2 OF 2
KJ79–5–7	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 TANK BASE REINFORCEMENT
KJ79–5–8	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 TANK BEAM ELEVATIONS
KJ79–5–9	3000M3 EMERGENCY OVERFLOW STORAGE TANK NO.1 TANK BASE, WALL SECTION AND DETAILS
AA01–76–1	GRAVITY SEWERS DN150 TO DN600 ACCESS CHAMBER COVERS – REINFORCED CONCRETE SURROUNDS TO CAST IRON COVERS AND FRAMES

(1) 1 0.5 0 1 2 3 4 5 6 7 m
SCALE 1:100

(2) 500 0 500 1000 mm
SCALE 1:20

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A2	22.12.20	ISSUED FOR CLIENT REVIEW
A1	17.12.20	ISSUED FOR INTERNAL REVIEW

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM AHD	DES CALC J. LU
	COORDINATE SYS MGA94–50	DES CHD R. FOURIE
ASCON SURVEY NONE	DES REF	DRN J. LU
		Q.C. CHD C. CARNEVALI

NORTH POINT

Jacobs

RECOMMENDED

CONSULTANT PROJECT MANAGER

APPROVED

CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM
3000m3 EMERGENCY OVERFLOW STORAGE TANK NO.1
TANK SECTIONS, ELEVATIONS AND DETAILS

FILE	PLAN	CAD	ISSUE	ORIGINAL SHEET SIZE
PROJECT C–S01648	KJ79–3–8		A2	A1

MF

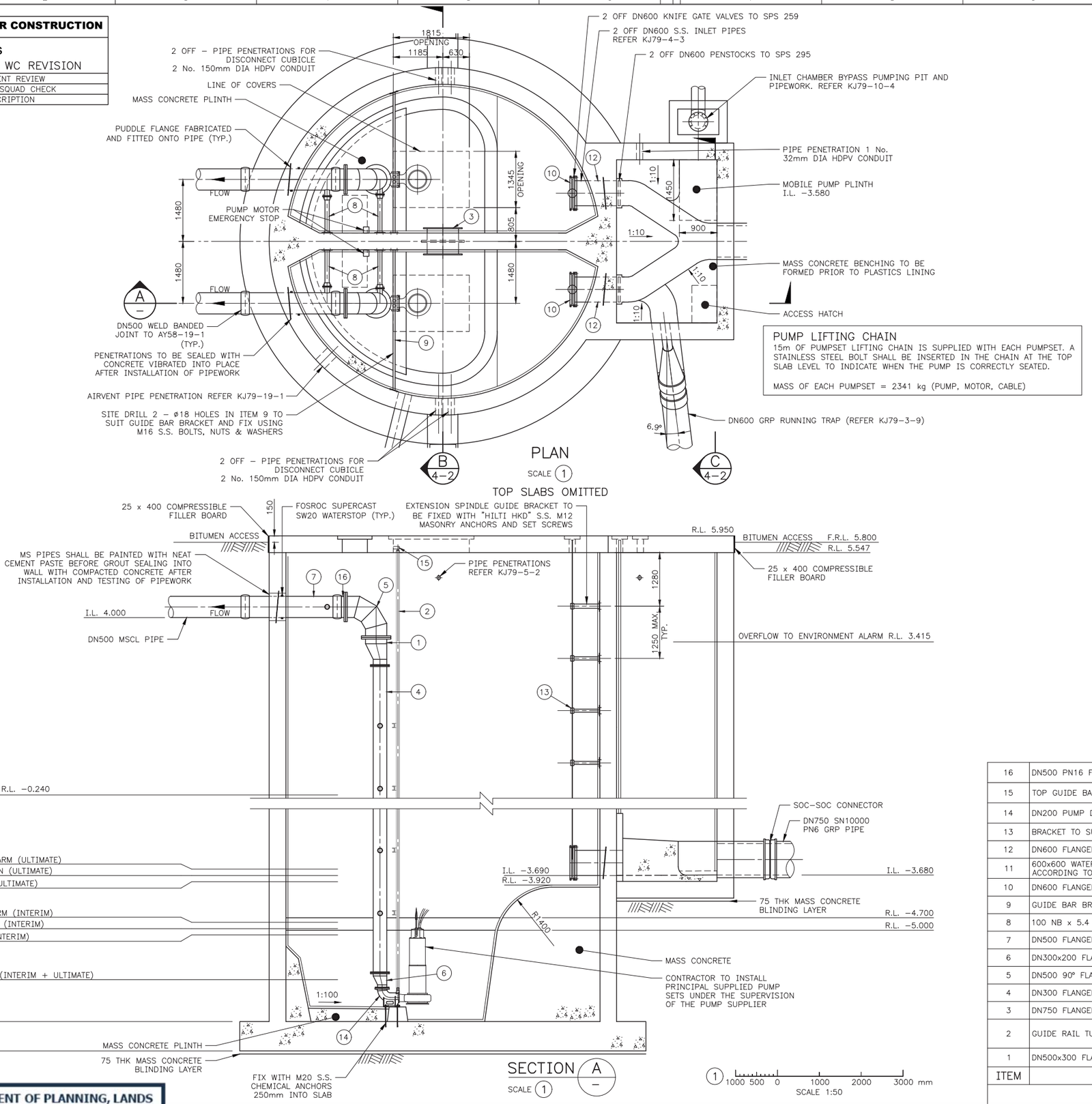
566
810

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A6	22.12.20	ISSUED FOR CLIENT REVIEW
A5	17.12.20	RE-ISSUED FOR SQUAD CHECK



PUMP LIFTING CHAIN

15m OF PUMPSET LIFTING CHAIN IS SUPPLIED WITH EACH PUMPSET. A STAINLESS STEEL BOLT SHALL BE INSERTED IN THE CHAIN AT THE TOP SLAB LEVEL TO INDICATE WHEN THE PUMP IS CORRECTLY SEATED.

MASS OF EACH PUMPSET = 2341 kg (PUMP, MOTOR, CABLE)

PLAN

SCALE 1

TOP SLABS OMITTED

SECTION A –

SCALE 1

1 1000 500 0 1000 2000 3000 mm

SCALE 1:50

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
2. PUMPING STATION TO BE CONNECTED TO ALARM SYSTEM.
3. METHOD OF DOUBLE ISOLATION SHOULD BE REVIEWED PRIOR TO CONSTRUCTION.
4. ALL PIPE SPECIALS SHALL BE FABRICATED FROM "SINTAKOTE" EXTERNAL COATED.
5. KNIFE GATE VALVE SHALL BE TYCO F952-180 STAINLESS STEEL, LUGGED BODY, RISING SPINDLE, EXTENSION TUBE AND STAINLESS STEEL SQUARE DRIVE, ANTI-CLOCKWISE CLOSING (ACC) SPS 259, OR APPROVED EQUIVALENT.

NUMBERING OF PUMPS

1. PRINT PUMP NUMBERS BOTH INTERNALLY AND EXTERNALLY ON THE WET WELL AS FOLLOWS:
   - 1.1. EXTERNAL NUMBERS SHALL BE 150 HIGH PRINTED ON THE CONCRETE SURROUND WITH YELLOW ROAD MARKING PAINT. THE NUMBERS SHALL BE ORIENTATED TO BE READABLE FROM THE LADDER.
   - 1.2. INTERNAL NUMBERS SHALL BE 100 HIGH RED PLASTIC GLUED TO THE CONCRETE SLAB ADJACENT TO THE SLIDE RAIL. NUMBERS ARE AVAILABLE FROM 'DESIGN PLASTIC' BAYSWATER.
2. ALL PUMPS TO BE TAGGED WITH A STAINLESS STEEL TAG ATTACHED TO THE PUMP LIFTING BRIDLE STATING PUMPING STATION NAME AND NUMBER.

PUMPS:	SUBMERSIBLE SEWAGE
MAKE:	KSB
MODEL:	KRTK 200-503/2004UNG1-S IE3 IMPELLER DIAMETER 453.0mm
DUTY:	INITIAL STAGE: 160L/s x 56.88m
MOTOR:	150kW/4POLE/400 V/KSB/ IP68 SUBMERSIBLE/SURFACE COOLED

REFERENCE DRAWINGS

KJ79-3-1	PUMP STATION SITE PLAN
KJ79-3-9	RUNNING TRAP
KJ79-4-2	PUMPING STATION – GENERAL ARRANGEMENT AND DETAILS – SHEET 2 OF 2
KJ79-4-3	PUMPING STATION – PENSTOCK ARRANGEMENT AND DETAILS
KJ79-5-1	PUMPING STATION – CONCRETE PLAN AND SECTIONS
KJ79-5-2	PUMPING STATION – REINFORCEMENT PLAN AND SECTIONS
KJ79-5-3	PUMPING STATION – TOP SLABS CONCRETE PLAN AND SECTIONS
KJ79-5-4	PUMPING STATION – TOP SLABS REINFORCEMENT PLAN AND DETAILS
KJ79-5-5	PUMPING STATION – COVER PLATE AND FRAME DETAILES – SHEET 1 OF 2
KJ79-5-6	PUMPING STATION – COVER PLATE AND FRAME DETAILS – SHEET 2 OF 2
KJ79-6-1	PUMP WELL – COVER/ALARM AND PENSTOCK/VALVE OPENING /COVER DETAIL
KJ79-8-1	PUMPING STATION – PIPE SPECIALS – SHEET 1 OF 2
KJ79-10-1	PUMPING STATION – VALVE PIT – GENERAL ARRANGEMENT
KJ79-10-2	PUMPING STATION – VALVE PIT – CONCRETE AND REINFORCING DETAILS
KJ79-10-3	EMERGENCY BYPASS PUMPING – BYPASS PUMPING PIT & PIPE FITTING DETAILS
KJ79-13-1	ULTRASONIC SUPPORT AND LANYARD DETAILS
KJ79-14-1	PUMPING STATION – PREVENTION OF FALLS – SHEET 1 OF 4
KJ79-14-2	PUMPING STATION – PREVENTION OF FALLS – SHEET 2 OF 4
KJ79-14-3	PUMPING STATION – PREVENTION OF FALLS – SHEET 3 OF 4
KJ79-14-4	PUMPING STATION – PREVENTION OF FALLS – SHEET 4 OF 4
KJ79-19-1	PUMPING STATION – AIR VENTILIATION DETAILS
KJ79-90-1	MECHANICAL DESIGN SUMMARY

MATERIAL LIST

ITEM	DESCRIPTION	MATERIAL	QTY	REMARKS
16	DN500 PN16 FLANGED MATCHING PIECE	M.S.	2	AY58-8-6
15	TOP GUIDE BAR BRACKET 50 NB	S.S.	2	REFER TO MANUFACTURER SPECIFIC DRAWINGS
14	DN200 PUMP DUCK FOOT BEND WITH MOUNTED GUIDE RAIL	S.S.	2	REFER TO MANUFACTURER SPECIFIC DRAWINGS
13	BRACKET TO SUPPORT VALVE SPINDLE	S.S.	12	REFER NOTE
12	DN600 FLANGED PIPE	S.S.	2	KJ79-4-3
11	600x600 WATERGATE 25S-T PENSTOCK OR EQUAL APPROVED ACCORDING TO SPS 295	S.S.	2	KJ79-4-3
10	DN600 FLANGED KNIFE GATE VALVE	S.S.	2	REFER NOTE 5
9	GUIDE BAR BRACKET SUPPORT	S.S.	12	KJ79-8-1
8	100 NB x 5.4 HEAVY STEEL TUBE	MS	14	KJ79-8-1
7	DN500 FLANGED PIPE W/ PUDDLE FLANGE & PIPE SUPPORT	MSCL	2	KJ79-8-1
6	DN300x200 FLANGED ECCENTRIC REDUCER	MSCL	2	KJ79-8-1
5	DN500 90° FLANGED MITRED BEND	MSCL	2	KJ79-8-1
4	DN300 FLANGED SPOOL PIPE	MSCL	2	KJ79-8-1
3	DN750 FLANGED SPOOL PIPE	S.S.	1	KJ79-8-1
2	GUIDE RAIL TUBE 50 NB	S.S.	2	REFER TO MANUFACTURER SPECIFIC DRAWINGS
1	DN500x300 FLANGED ECCENTRIC REDUCER	MSCL	2	KJ79-8-1

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE | VERTICAL DATUM AHD | COORDINATE SYS MGA94-50 | ASCON SURVEY NONE | DES REF IW200060 | DES CALC J.LU | DES CHD R.FOURIE | DRN J.LU | Q.C. CHD C.CARNEVALI

NORTH POINT

Jacobs

RECOMMENDED CONSULTANT PROJECT MANAGER

APPROVED CONSULTANT PROJECT DIRECTOR

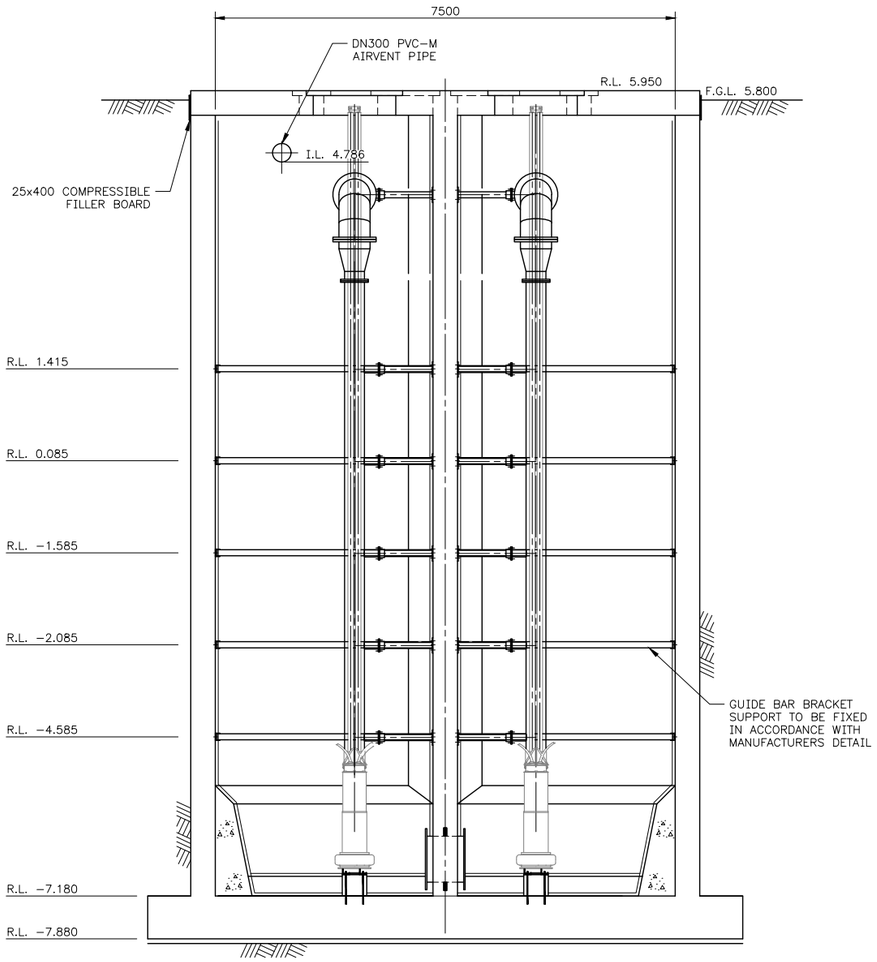
WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700-35- STILLWATER DR & PM PUMPING STATION
GENERAL ARRANGEMENT AND DETAILS – SHEET 1 OF 2

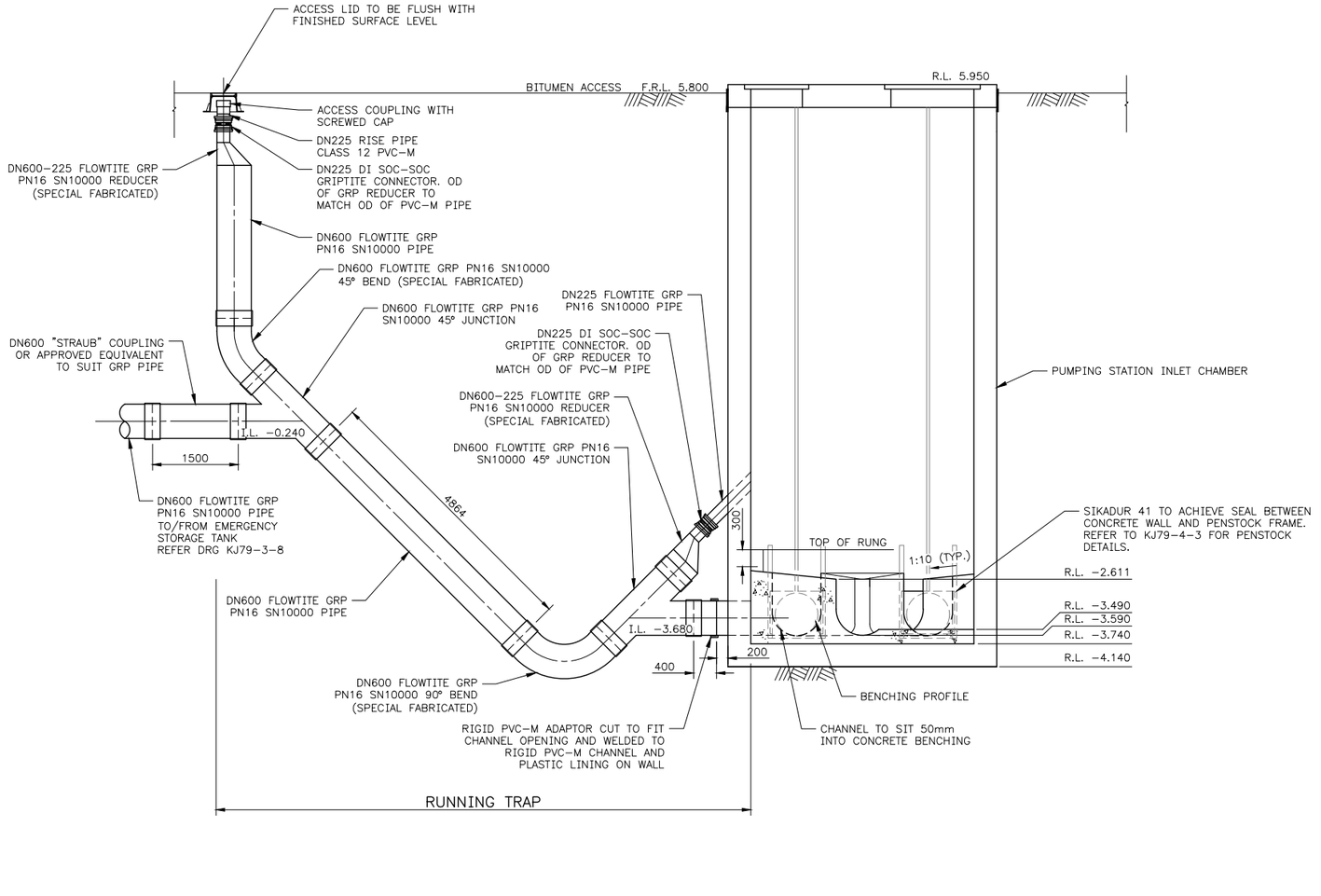
FILE PROJECT C-S01648 | PLAN KJ79-4-1 | CAD | ISSUE A4

ORIGINAL SHEET SIZE A1 | MF

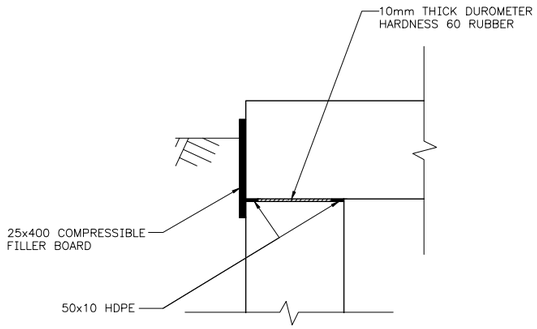
566
810



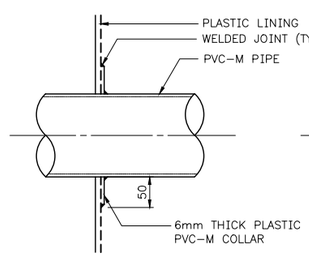
SECTION B 4–1
SCALE 1



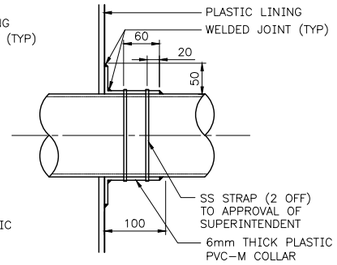
SECTION C 4–1
SCALE 1



DETAIL 1
SCALE: NTS



DETAIL – PVC PIPE INTRUDING
INTO PLASTIC LINED CHAMBER



DETAIL – NON PVC PIPE INTRUDING
INTO PLASTIC LINED CHAMBER

DETAIL 2
SCALE: NTS

PRELIMINARY - NOT FOR CONSTRUCTION

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REV	DATE	DESCRIPTION
A4	22.10.20	ISSUED FOR CLIENT REVIEW
A3	20.10.20	ISSUED FOR SQUAD CHECK

REFERENCE DRAWINGS

KJ79–3–8	3000m3 EMERGENCY OVERFLOW STORAGE TANK NO.1 TANK SECTIONS, ELEVATIONS AND DETAILS
KJ79–4–1	PUMPING STATION – GENERAL ARRANGEMENT AND DETAILS – SHEET 1 OF 2
KJ79–4–3	PUMPING STATION – PENSTOCK ARRANGEMENT AND DETAILS

1 1000 500 0 1000 2000 3000 mm
SCALE 1:50

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE | VERTICAL DATUM AHD | COORDINATE SYS MGA94–50 | ASCON SURVEY NONE | DES REF IW200060 | DES CALC J.LU | DES CHD R.FOURIE | DRN J.LU | Q.C. CHD C.CARNEVALI

NORTH POINT

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM PUMPING STATION
GENERAL ARRANGEMENT AND DETAILS – SHEET 2 OF 2

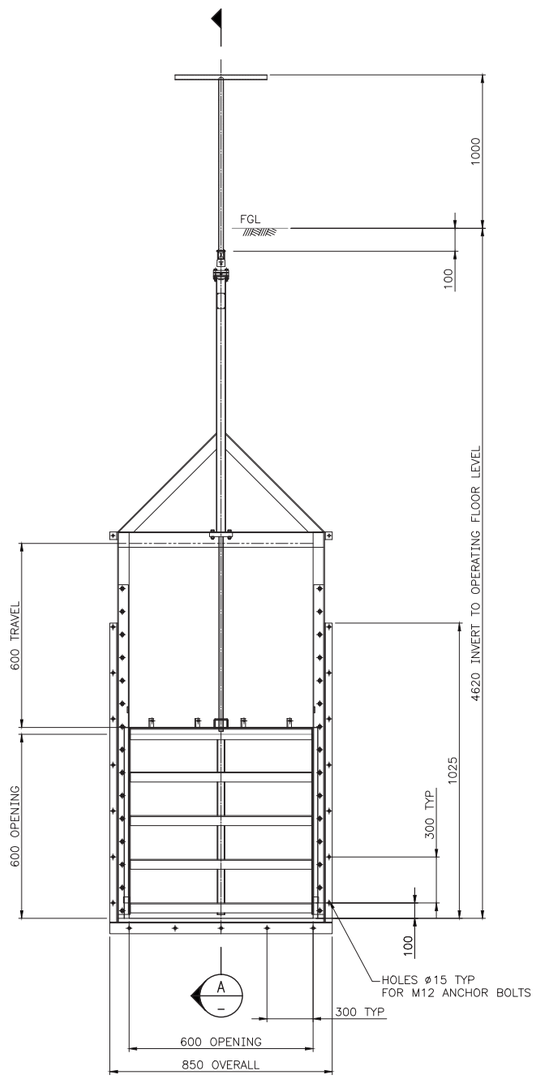
FILE PROJECT C–S01648 | PLAN KJ79–4–2 | CAD | ISSUE A4

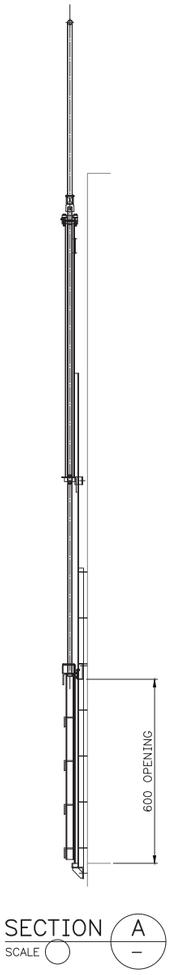
ORIGINAL SHEET SIZE A1 | MF

566
810

GENERAL NOTES

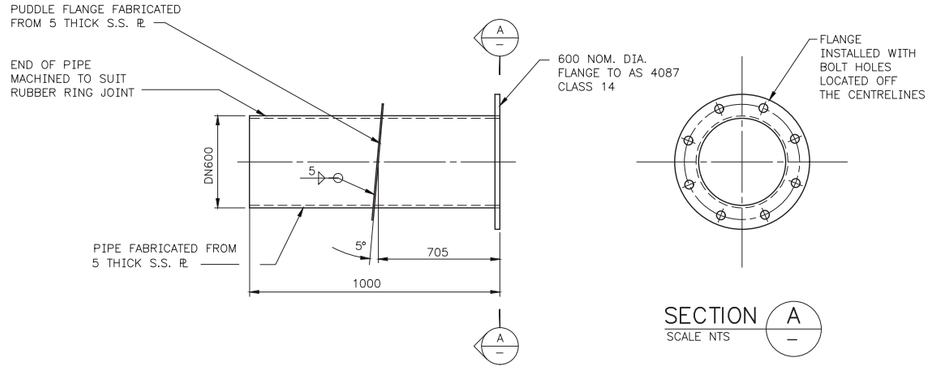
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
2. ALL STEELWORK FABRICATION AND ERECTION COMPLY WITH AS 4100.
3. ALL STAINLESS STEEL (SS) IS A.I.S.I. GRADE T316L, ALL SS PLATE, SHEET AND STRIP COMPLY WITH ASTM A240M GRADE 316. STAINLESS STEEL CONSUMABLES SHALL BE AISI 316L Si. AFTER WELDING ALL WELD SPLATTER AND OXIDE ARE REMOVED AND ALL WELDS PICKLED.
4. ALTERNATIVE PROPRIETARY PRODUCTS OR BRANDS MAY BE USED IF ACCEPTED BY THE SUPERINTENDENT.
5. THE PENSTOCK DRAWING SHOWS THE GENERIC DETAIL OF THE PENSTOCK MODEL ONLY. THE DETAIL OF MODEL AND FIXING DETAIL CONFIRMED WITH THE SUPPLIER.





SECTION A
SCALE 1

GENERIC DETAIL OF PENSTOCK
MARK (11)
SCALE (1)
DN600 PENSTOCK TO SPS 295



TYPICAL DN600 S.S. PIPE FLANGED ONE END
ITEM (12)
SCALE NTS
2–OFF

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A2	22.10.20	ISSUED FOR CLIENT REVIEW
A1	20.10.20	ISSUED FOR SQUAD CHECK

REFERENCE DRAWINGS

KJ79–4–1	PUMPING STATION – GENERAL ARRANGEMENT AND DETAILS – SHEET 1 OF 2
KJ79–4–2	PUMPING STATION – GENERAL ARRANGEMENT AND DETAILS – SHEET 2 OF 2

(1) 500 0 500 1000 mm
SCALE 1:20

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM AHD	DES CALC J.LU	NORTH POINT
	COORDINATE SYS MGA94–50	DES CHD R.FOURIE	
ASCON SURVEY NONE	DES REF	DRN J.LU	
		Q.C. CHD C.CARNEVALI	

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WATER CORPORATION

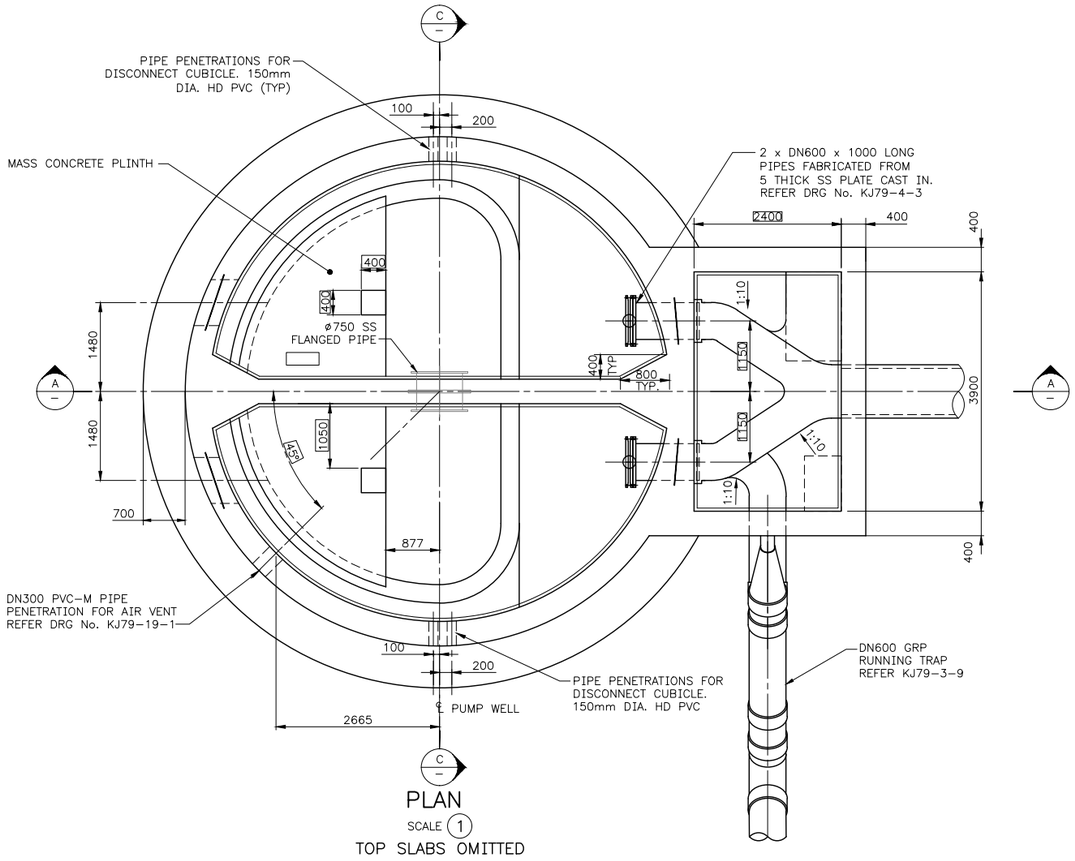
METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM PUMPING STATION
PENSTOCK ARRANGEMENT AND DETAILS

FILE	PLAN	CAD	ISSUE
PROJECT C–S01648	KJ79–4–3		A2

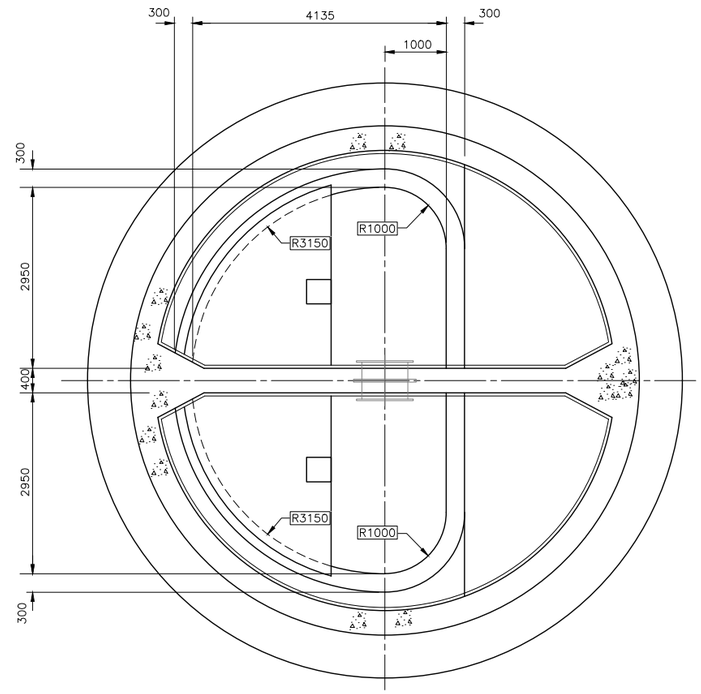
ORIGINAL SHEET SIZE A1

MF

566
810



PLAN
SCALE (1)
TOP SLABS OMITTED



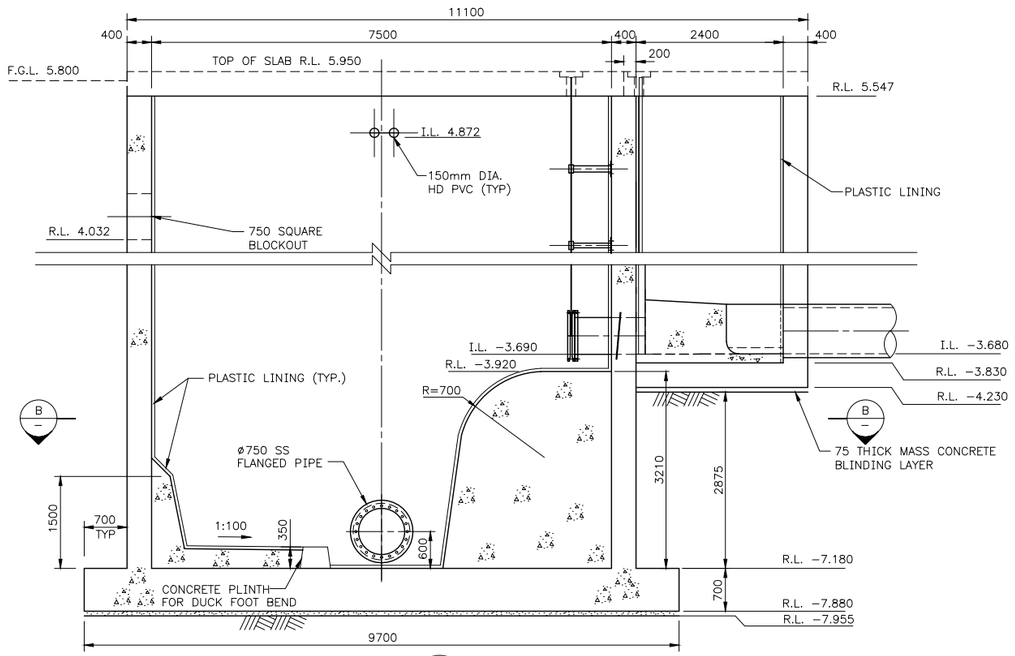
SECTION B
SCALE (1)

PRELIMINARY - NOT FOR CONSTRUCTION		
Jacobs NOT AN APPROVED WC REVISION		
A2	22.10.20	ISSUED FOR CLIENT REVIEW
A1	20.10.20	ISSUED FOR SQUAD CHECK
REV	DATE	DESCRIPTION

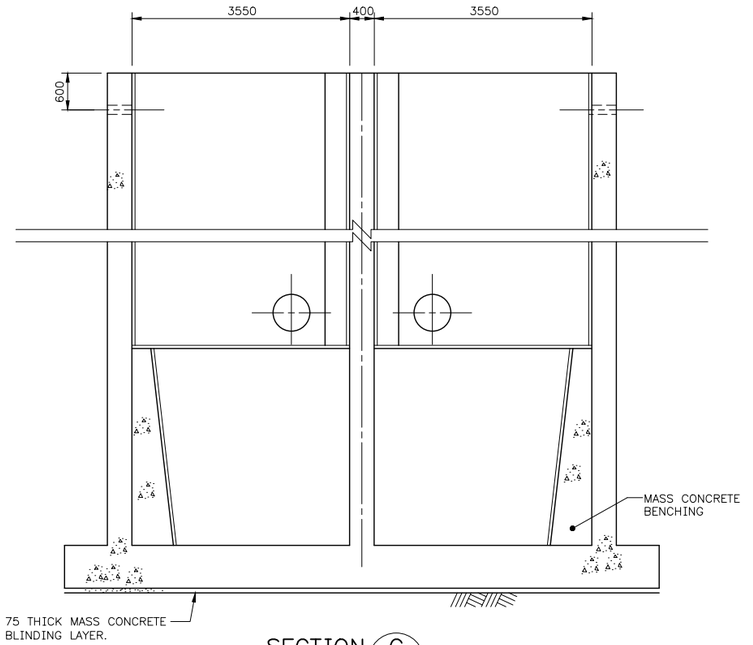
NOTE:
PRIOR TO PLACING TOP SLABS, LEVEL CONCRETE AND TAKE UP TOLERANCES USING THE FOLLOWING MORTAR MIX :

1 PART PORTLAND CEMENT
1.5 PART QUARRY FINES
SUPERPLASTICISER
0.3 : 1 WATER/CEMENT RATIO

WHEN PLACING TOP SLABS, JOINTS TO BE SEALED WITH EXPANDITE 'PLASTISEAL' MASTIC OR EQUIVALENT APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.



SECTION A
SCALE (1)



SECTION C
SCALE (1)

GENERAL NOTES

1. STRUCTURAL CONCRETE TO BE GRADE N40 TO A.S. 3600.
2. BLINDING LAYER CONCRETE TO BE GRADE N20 TO A.S. 3600
3. FOUNDATION TO BE IN ACCORDANCE WITH THE SPECIFICATION.
4. PLASTICS LINE ALL EXPOSED SURFACES IN WET WELL AND INLET MANHOLE, EXCEPT FLOORS. CARRY PLASTICS LINING 150 INTO MASS CONCRETE BENCHING.
5. CONTRACTOR TO ENSURE STABILITY OF STRUCTURE AT ALL TIMES, PARTICULARLY WHEN BACKFILL IS NOT IN PLACE.

REFERENCE DRAWINGS

KJ79-3-1	PUMPING STATION SITE PLAN
KJ79-4-1	PUMPING STATION – GENERAL ARRANGEMENT AND DETAILS – SHEET 1 OF 2
KJ79-4-2	PUMPING STATION – GENERAL ARRANGEMENT AND DETAILS – SHEET 1 OF 2
KJ79-5-2	PUMPING STATION – REINFORCEMENT PLAN AND SECTIONS
KJ79-5-3	PUMPING STATION – TOP SLABS CONCRETE PLAN AND DETAILS
KJ79-5-4	PUMPING STATION – TOP SLABS REINFORCEMENT PLAN AND DETAILS
KJ79-5-5	PUMPING STATION – COVER PLATE AND FRAME DETAILS – SHEET 1 OF 2
KJ79-5-6	PUMPING STATION – COVER PLATE AND FRAME DETAILS – SHEET 2 OF 2
KJ79-19-1	PUMPING STATION & 3000m3 EMERGENCY OVERFLOW STORAGE TANK NO.1 – AIR VENT DETAILS

(1) 1000 500 0 1000 2000 3000 mm
SCALE 1:50

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM AHD	DES CALC J.LU
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ASCON SURVEY NONE	DES REF IW200060	DRN J.LU
		Q.C. CHD C.CARNEVALI

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CONSULTANT PROJECT DIRECTOR

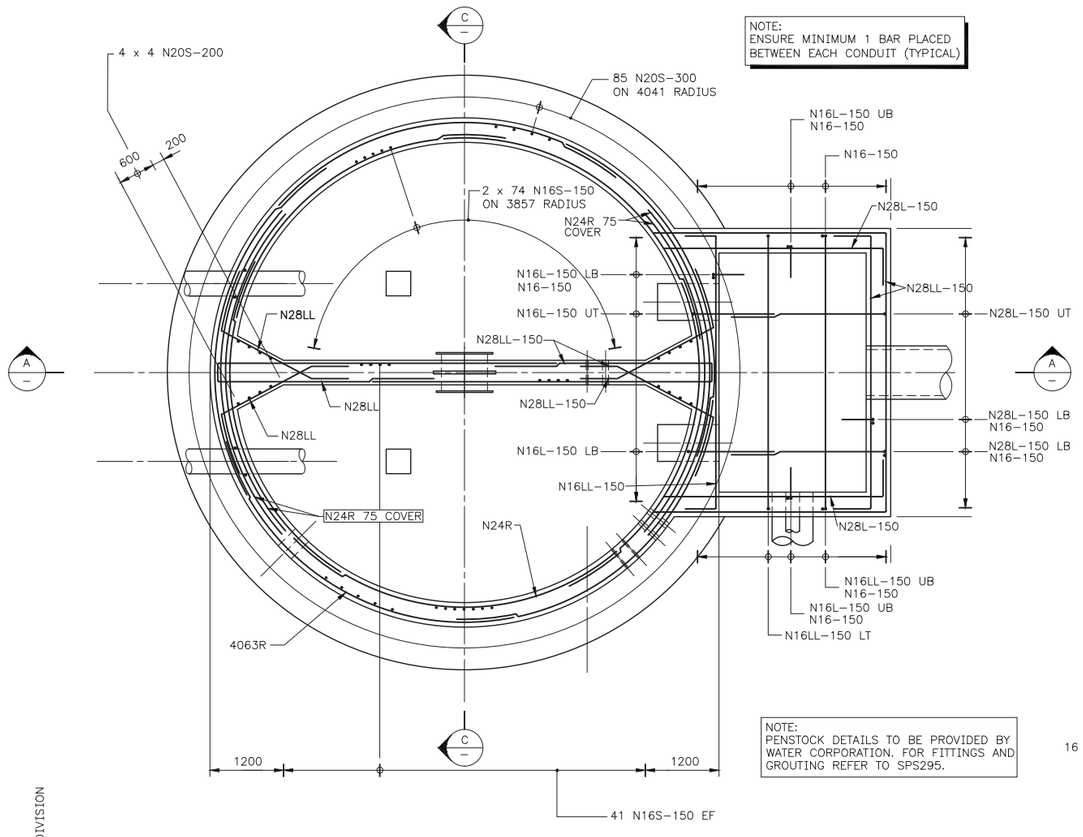
WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700-35- STILLWATER DR & PM PUMPING STATION
CONCRETE PLAN AND SECTIONS

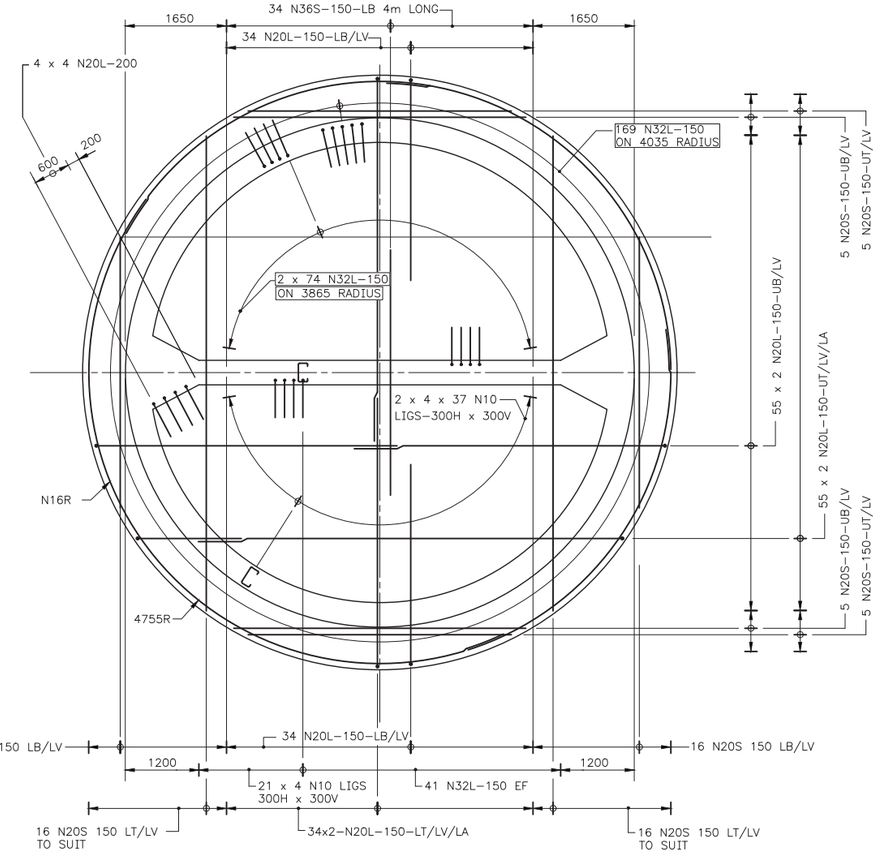
FILE	PLAN	CAD	ISSUE
PROJECT C-S01648	KJ79-5-1		A2

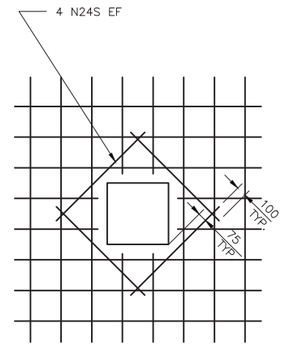
ORIGINAL SHEET SIZE A1
MF

566
810

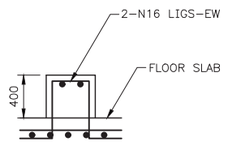


SECTIONAL PLAN
SCALE (1)
TOP SLABS OMITTED



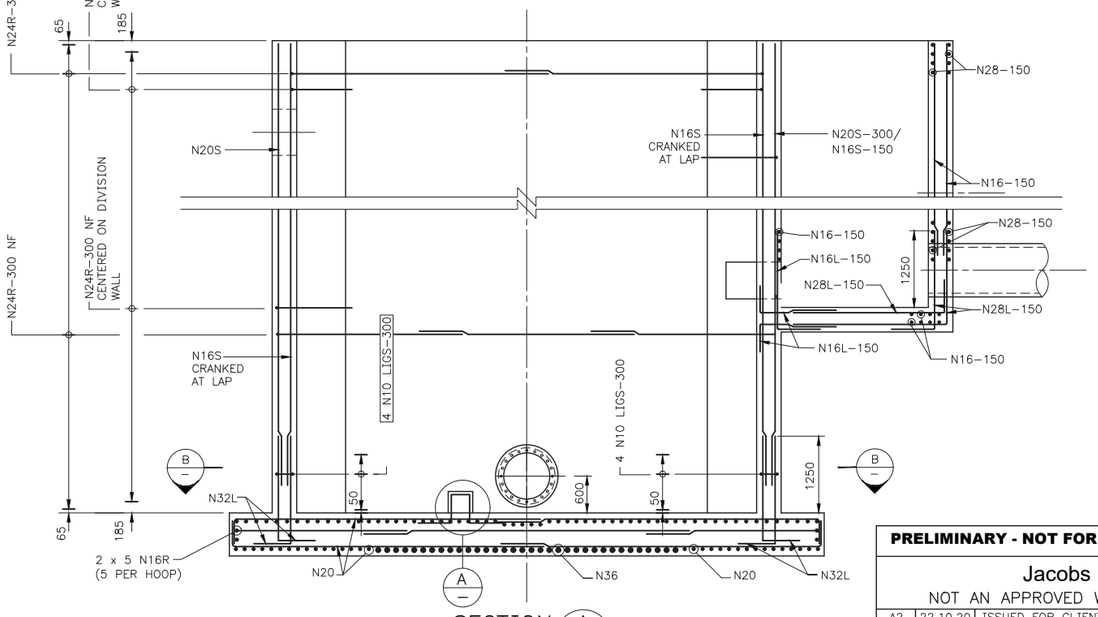


TYPICAL HOLE DETAIL
SCALE: NTS



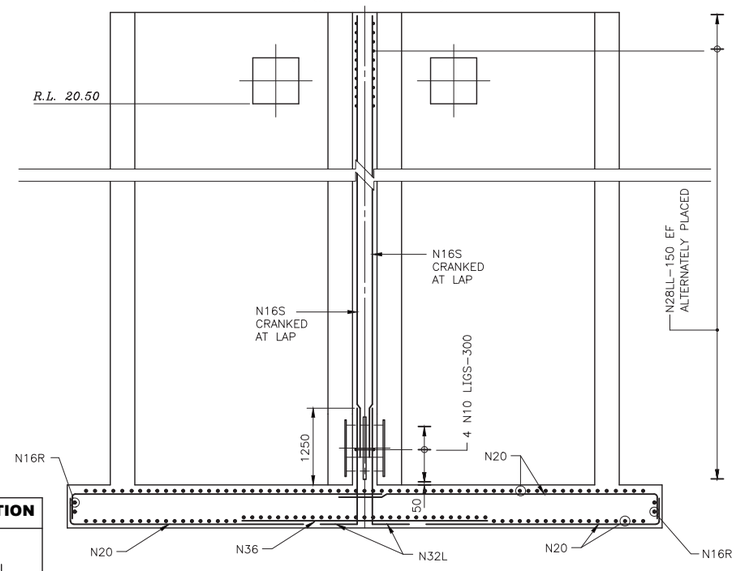
DETAIL (A)
SCALE: NTS

SECTION (B)
SCALE (1)



SECTION (A)
SCALE (1)

PLINTHS OMITTED FOR CLARITY



SECTION (C)
SCALE (1)

GENERAL NOTES

1. REINFORCING STEEL TO BE STRUCTURAL GRADE D500N TO AS/NZS 4671.
2. COVER TO BE 75 UNLESS OTHERWISE SHOWN. END COVER TO BE 50.
3. BARS TO BE CUT OR BENT AROUND OPENINGS TO MAINTAIN COVER.
4. ALL MEASURMENTS IN MILLIMETRES.

BAR NOTATION

NO. OF SETS x NO. OFF GRADE SIZE SHAPE – SPACING LOCATION (SEE LEGEND)

LEGEND

FF = FAR FACE	UT = UPPER TOP
NF = NEAR FACE	LT = LOWER TOP
EF = EACH FACE	UB = UPPER BOTTOM
LV = LENGTH VARIES	LB = LOWER BOTTOM
LA = LAPS ALTERNATING	

REFERENCE DRAWINGS

KJ79–3–1	PUMPING STATION SITE PLAN
KJ79–4–1	PUMPING STATION – GENERAL ARRANGEMENT AND DETAILS – SHEET 1 OF 2
KJ79–4–2	PUMPING STATION – GENERAL ARRANGEMENT AND DETAILS – SHEET 1 OF 2
KJ79–5–1	PUMPING STATION – CONCRETE PLAN AND SECTIONS
KJ79–5–3	PUMPING STATION – TOP SLABS CONCRETE PLAN AND DETAILS
KJ79–5–4	PUMPING STATION – TOP SLABS REINFORCEMENT PLAN AND DETAILS
KJ79–5–5	PUMPING STATION – COVER PLATE AND FRAME DETAILS – SHEET 1 OF 2
KJ79–5–6	PUMPING STATION – COVER PLATE AND FRAME DETAILS – SHEET 2 OF 2

(1) 1000 500 0 1000 2000 3000 mm
SCALE 1:50

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A2	22.10.20	ISSUED FOR CLIENT REVIEW
A1	20.10.20	ISSUED FOR SQUAD CHECK

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM AHD	DES CALC J.LU
	COORDINATE SYS MGA94–50	DES CHD R.FOURIE
ASCON SURVEY NONE	DES REF	DRN J.LU
		Q.C. CHD C.CARNEVALI

NORTH POINT

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

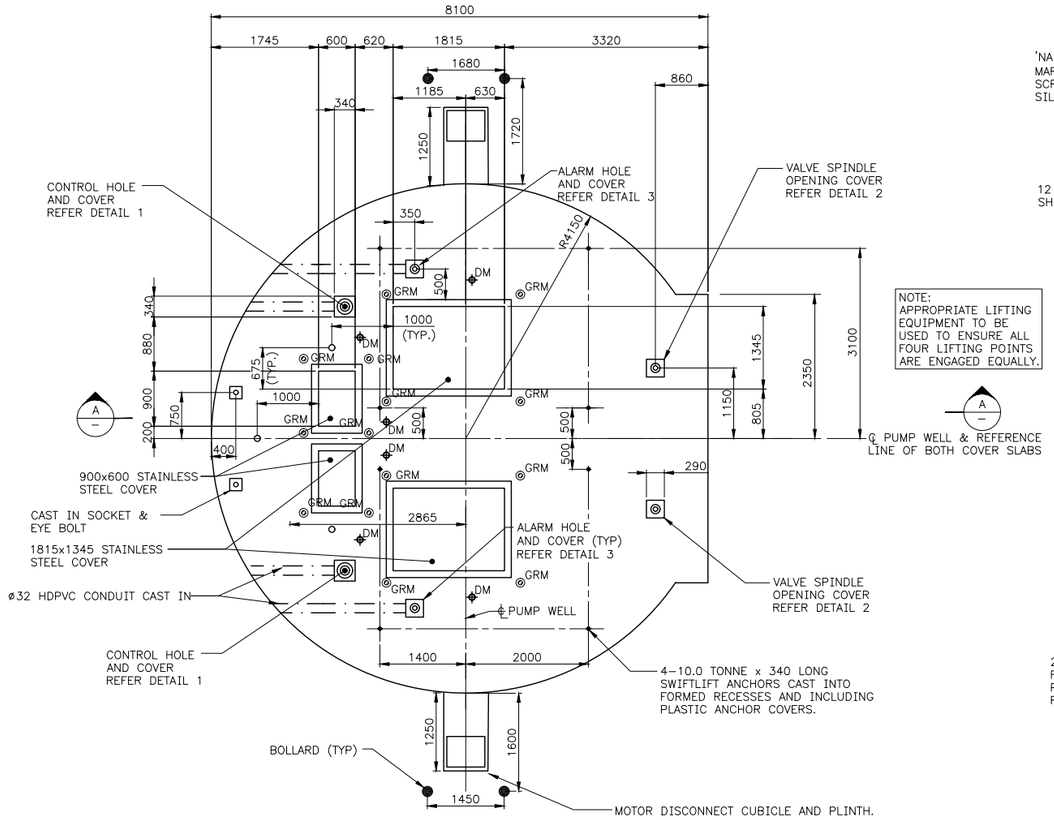
WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM PUMPING STATION
REINFORCEMENT PLAN AND SECTIONS

FILE	PLAN	CAD	ISSUE
PROJECT C–S01648	KJ79–5–2	A2	MF

ORIGINAL SHEET SIZE A1

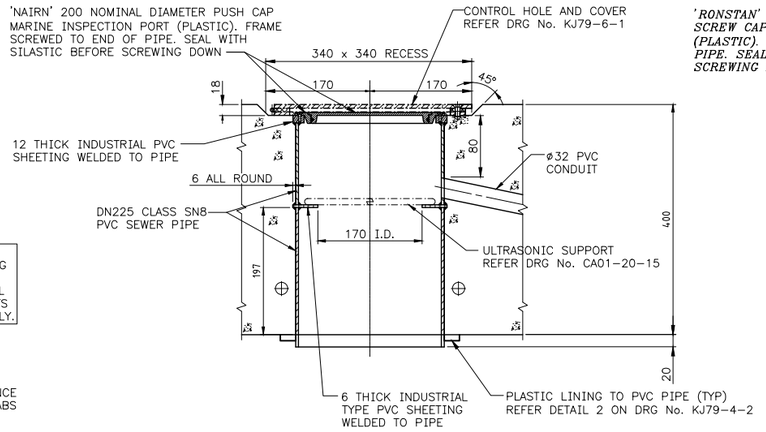
566
810



PLAN
SCALE (1)

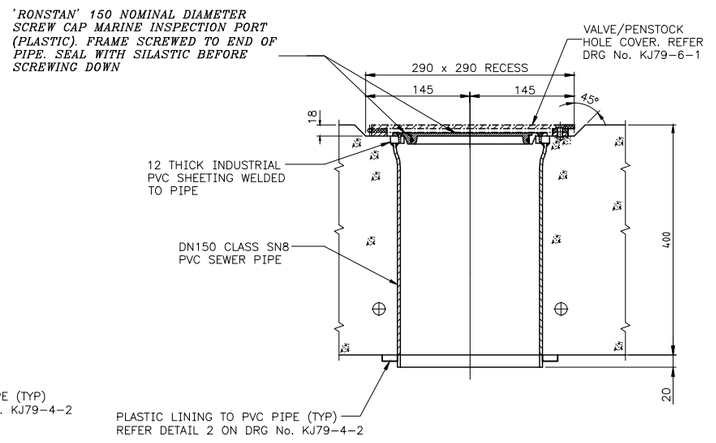
FOLLOWING MOUNTS ARE CAST IN SITU:
GRM = GUARD RAIL MOUNT AND
DM = DAVIT MOUNT
(REFER DRG. KJ79–5–4 AND KJ79–14–1)

PUMPWELL



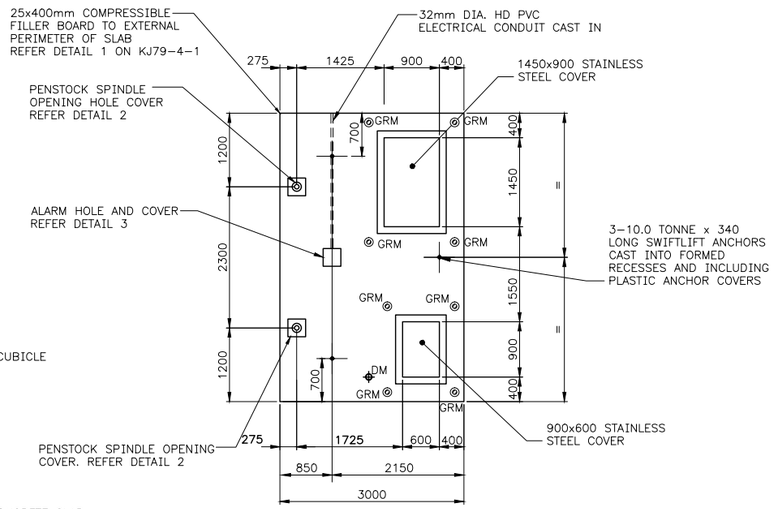
DETAIL (1)
SCALE: NTS

CONTROL HOLE
2–OFF



DETAIL (2)
SCALE: NTS

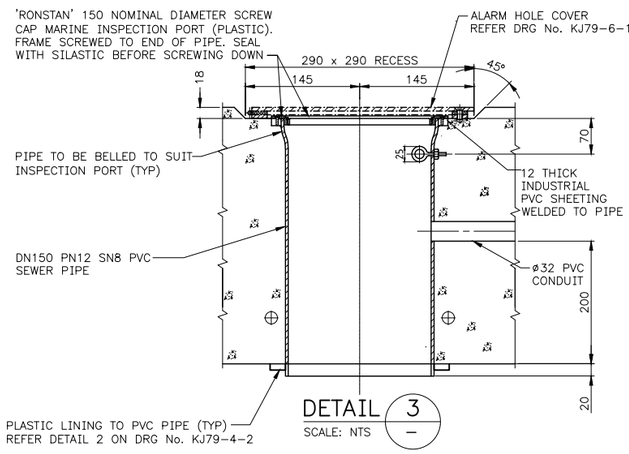
VALVE / PENSTOCK HOLE
4–OFF



PLAN
SCALE (1)

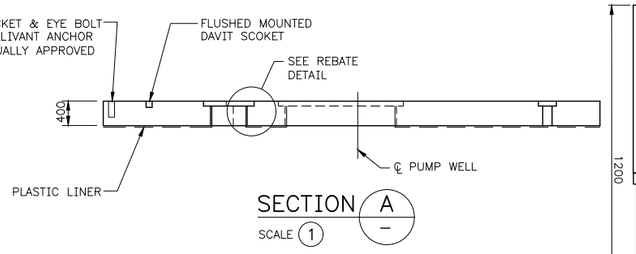
FOLLOWING MOUNTS ARE CAST IN SITU:
GRM = GUARD RAIL MOUNT AND
DM = DAVIT MOUNT
(REFER DRG. KJ79–5–4 AND KJ79–14–2)

Y SPLIT INLET ACCESS CHAMBER

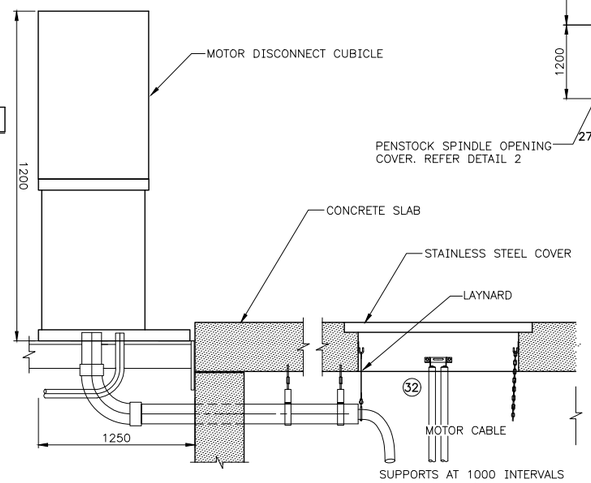


DETAIL (3)
SCALE: NTS

ALARM HOLE
3–OFF

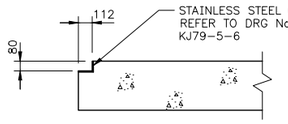


SECTION (A)
SCALE (1)



MOTOR DISCONNECT CUBICLE NOT SHOWN

GENERAL ARRANGEMENT OF
MOTOR DISCONNECT CUBICLE
SCALE: NTS



TYPICAL REBATE TO OPENING
SCALE: NTS

GENERAL NOTES

1. STRUCTURAL CONCRETE TO BE GRADE N40 TO A.S. 3600.
2. CONCRETE CURING TO CONTINUE FOR NOT LESS THAN 7 DAYS FROM TIME OF CASTING.
3. PLASTICS LINE UNDERSIDE OF TOP SLAB THAT IS EXPOSED IN WET WELL AND WELD TO PVC AT PENETRATIONS.
4. ALL MEASUREMENTS IN MILLIMETRES UNLESS NOTED OTHERWISE.
5. SLABS NOT TO BE LIFTED FOR 14 DAYS FOLLOWING POURING WITHOUT SUPERINTENDENT'S APPROVAL.
6. LOCATIONS OF MOTOR DISCONNECT CUBICLES ARE APPROXIMATE ONLY AND THE
7. ELECTRICAL CONTRACTOR SHALL DETERMINE FINAL LOCATIONS.
8. REMOVABLE SAFETY GRATES TO BE FITTED TO ALL ACCESS COVERS GREATER THAN 200mm x 200mm.

REFERENCE DRAWINGS

KJ79–3–1	PUMPING STATION SITE PLAN
KJ79–4–1	PUMPING STATION – GENERAL ARRANGEMENT AND DETAILS – SHEET 1 OF 2
KJ79–4–2	PUMPING STATION – GENERAL ARRANGEMENT AND DETAILS – SHEET 1 OF 2
KJ79–5–1	PUMPING STATION – CONCRETE PLAN AND SECTIONS
KJ79–5–2	PUMPING STATION – REINFORCEMENT PLAN AND SECTIONS
KJ79–5–4	PUMPING STATION – TOP SLABS REINFORCEMENT PLAN AND DETAILS
KJ79–5–5	PUMPING STATION – COVER PLATE AND FRAME DETAILS – SHEET 1 OF 2
KJ79–5–6	PUMPING STATION – COVER PLATE AND FRAME DETAILS – SHEET 2 OF 2
KJ79–6–1	PUMPING STATION – COVER/ALARM AND PENSTOCK/VALVE OPENING/COVER DETAIL
KJ79–14–1	PUMPING STATION – PREVENTION OF FALLS (SHEET 1 OF 4) – PART 1 OF 2
KJ79–14–2	PUMPING STATION – PREVENTION OF FALLS (SHEET 2 OF 4) – PART 2 OF 2
KJ79–14–3	PUMPING STATION – PREVENTION OF FALLS (SHEET 3 OF 4)
KJ79–14–4	PUMPING STATION – PREVENTION OF FALLS (SHEET 4 OF 4) – GRATING
KJ79–41–1	ELECTRICAL PRIMARY DESIGN – SITE PLAN
CA01–20–15	INLET PIPE, INLET TEE, VALVE PIT DRAIN, ULTRASONIC SUPPORT & LANYARD DETAILS

(1) 1000 500 0 1000 2000 3000 mm
SCALE 1:50

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs
NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A2	22.10.20	ISSUED FOR CLIENT REVIEW
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DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM AHD	DES CALC J.LU
	COORDINATE SYS MGA94–50	DES CHD R.FOURIE
ASCON SURVEY NONE	DES REF IW200060	DRN J.LU
		Q.C. CHD C.CARNEVALI

NORTH POINT

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM PUMPING STATION
TOP SLAB CONCRETE PLAN AND DETAILS

FILE	PLAN	CAD	ISSUE	ORIGINAL SHEET SIZE
PROJECT C–S01648	KJ79–5–3		A2	A1 MF

566
810

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

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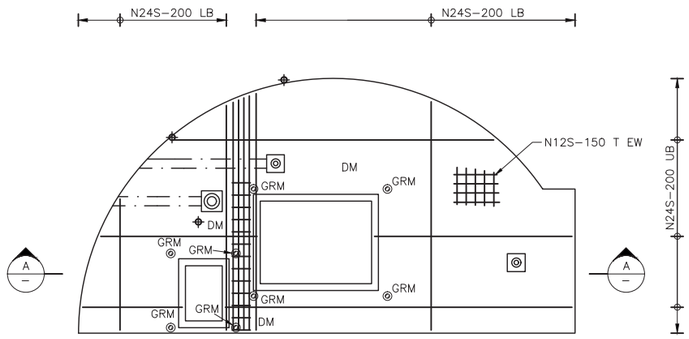
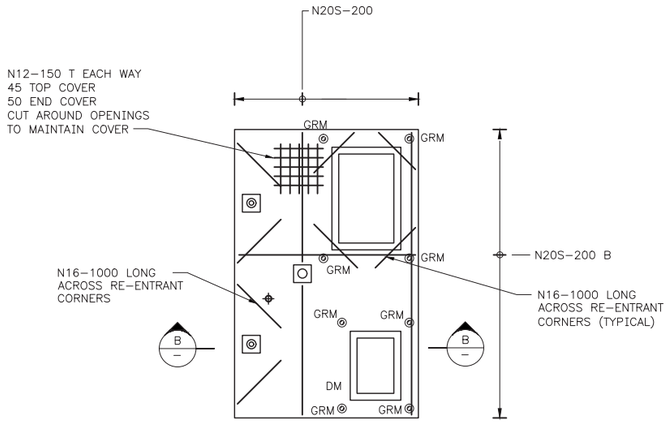
A2	22.10.20	ISSUED FOR CLIENT REVIEW
A1	20.10.20	ISSUED FOR SQUAD CHECK



PLAN – SLAB 'A'

SCALE (1)

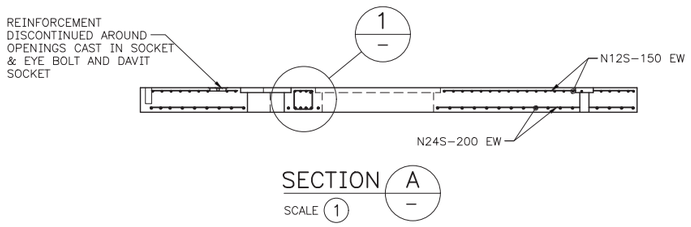
FOLLOWING MOUNTS ARE CAST IN SITU:
GRM = GUARD RAIL MOUNT AND
DM = DAVIT MOUNT
(REFER NOTE 5 THIS DRG. AND DRG. KJ79–14–1)



PLAN – SLAB 'C'

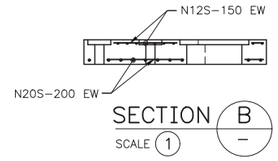
SCALE (1)

FOLLOWING MOUNTS ARE CAST IN SITU:
GRM = GUARD RAIL MOUNT AND
DM = DAVIT MOUNT
(REFER NOTE 5 THIS DRG. AND REFER DRG. KJ79–14–2)



SECTION A

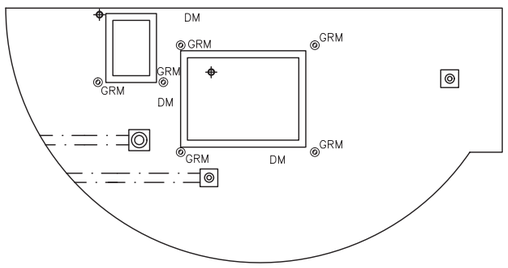
SCALE (1)



SECTION B

SCALE (1)

SIMILAR FOR SLAB 'B'

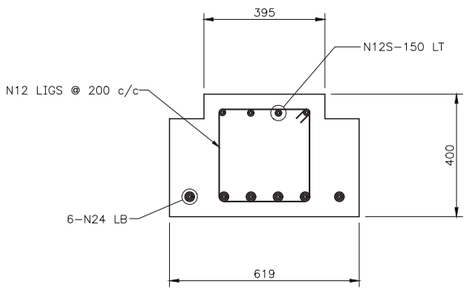


PLAN – SLAB 'B'

SCALE (1)

REINFORCEMENT AS FOR SLAB 'A'

MOTOR DISCONNECT CUBICLE NOT SHOWN



DETAIL 1

SCALE (2)

GENERAL NOTES

1. REINFORCING STEEL TO BE STRUCTURAL GRADE D500N TO AS/NZ 4671
2. COVER TO BE 75 UNLESS OTHERWISE SHOWN. END COVER TO BE 50.
3. BARS TO BE CUT OR BENT AROUND OPENINGS TO MAINTAIN COVER.
4. TOP SLAB DESIGNED FOR A160 LOADS IN ACCORDANCE WITH AS 5100.2
5. REINFORCING TO BE ADUSTED LOCALLY AROUND AND TO CLEAR FLUSH MOUNT SLEEVES FOR DAVITS AND GUARDRAILS (DO NOT CUT REINFORCEMENT) (REFER DRG. KJ79–14–1 TO 14–4).

BAR NOTATION

NO. OF SETS GRADE SIZE SHAPE – SPACING LOCATION (SEE LEGEND)

LEGEND

T	TOP
B	BOTTOM
UT	UPPER TOP
LT	LOWER TOP
UB	UPPER BOTTOM
LB	LOWER BOTTOM
EF	EACH FACE
S	STRAIGHT

REFERENCE DRAWINGS

KJ79–3–1	PUMPING STATION SITE PLAN
KJ79–4–1	PUMPING STATION – GENERAL ARRANGEMENT AND DETAILS – SHEET 1 OF 2
KJ79–4–2	PUMPING STATION – GENERAL ARRANGEMENT AND DETAILS – SHEET 1 OF 2
KJ79–5–3	PUMPING STATION – TOP SLABS CONCRETE PLAN AND SECTIONS
KJ79–14–1	PUMPING STATION – PREVENTION OF FALLS (SHEET 1 OF 4) – PART 1 OF 2
KJ79–14–2	PUMPING STATION – PREVENTION OF FALLS (SHEET 2 OF 4) – PART 2 OF 2
KJ79–14–3	PUMPING STATION – PREVENTION OF FALLS (SHEET 3 OF 4)
KJ79–14–4	PUMPING STATION – PREVENTION OF FALLS (SHEET 4 OF 4) – GRATING

(1) 1000 500 0 1000 2000 3000 mm
SCALE 1:50

(2) 100 50 0 100 200 300 400 500 600 700 mm
SCALE 1:10

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE
ASCON SURVEY NONE
VERTICAL DATUM AHD
COORDINATE SYS MGA94–50
DES REF IW200060
DES CALC J. LU
DES CHD R. FOURIE
DRN J. LU
Q.C. CHD C. CARNEVALI

NORTH POINT

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

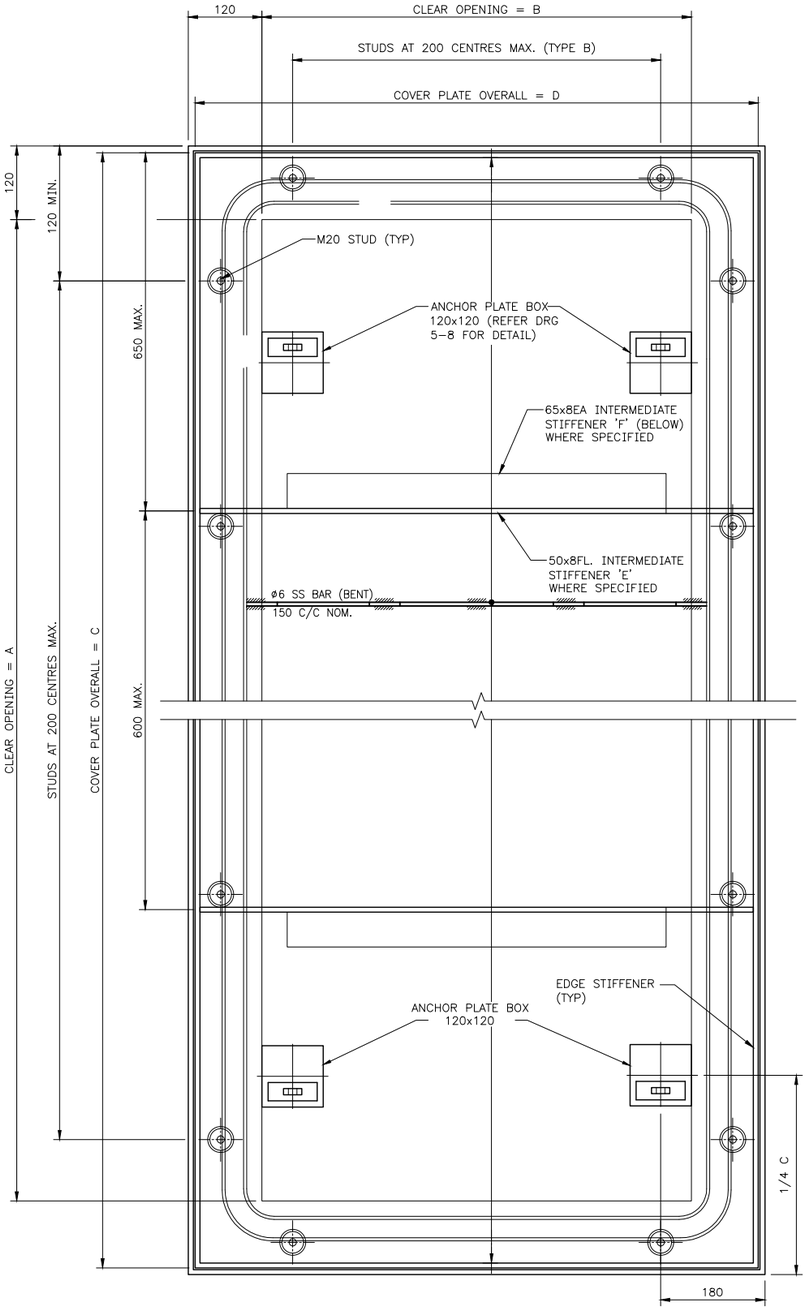
WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM PUMPING STATION
TOP SLAB REINFORCEMENT PLAN AND DETAILS

FILE PROJECT C–S01648
PLAN KJ79–5–4
CAD
ISSUE A2

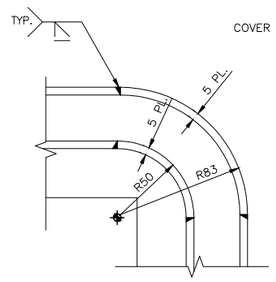
ORIGINAL SHEET SIZE A1
MF

566
810



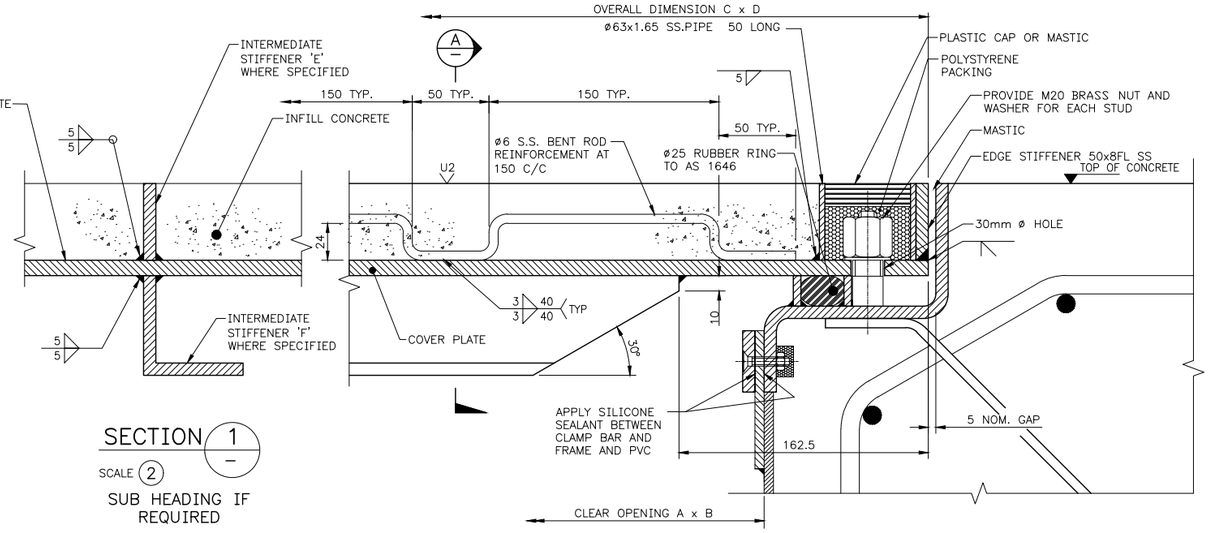
GENERAL ARRANGEMENT (TYP)

SCALE (1)



TYPICAL CORNER DETAIL

SCALE (2)



SECTION 1 –

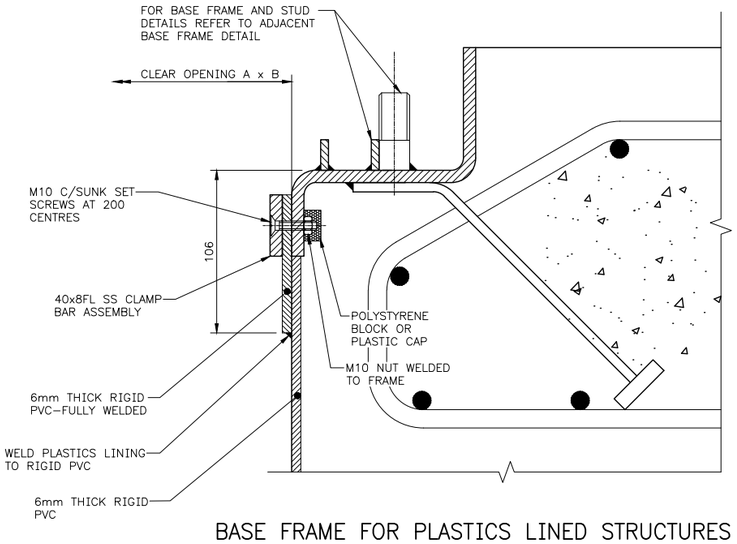
SCALE (2)

SUB HEADING IF REQUIRED

ASSEMBLED DETAIL

SCALE: NTS

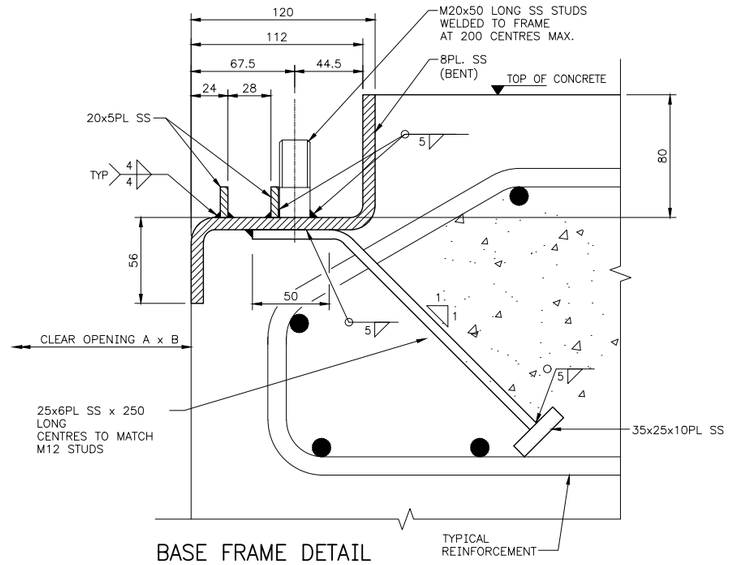
SECTIONAL ELEVATION



BASE FRAME FOR PLASTICS LINED STRUCTURES

SCALE (2)

SECTIONAL ELEVATION



BASE FRAME DETAIL
FOR NON PLASTICS LINER STRUCTURES

SCALE (2)

SECTIONAL ELEVATION

BASE FRAME AND COVER PLATE									
TYPE	CLEAR OPENING A x B	COVER PLATE OVERALL DIM. C x D	No. OFF REQ'D.	PLASTICS LINING REQ'D.	INTERMEDIATE STIFFENER 'E' No. OFF	INTERMEDIATE STIFFENER 'F' No. OFF	ACCESS CHAMBER NO.	KEYHOLES NO. OFF	REINFORCING BARS REQ'D.
A	900x600	1118x818	3	YES	1	1	–	4	YES

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A2	22.10.20	ISSUED FOR CLIENT REVIEW
A1	20.10.20	ISSUED FOR SQUAD CHECK

NOTES

1. ALL PLATE, PIPE, ROUND BARS, SCREWS AND BOLTS SHALL BE GRADE 316L STAINLESS STEEL.
2. INFILL CONCRETE TO BE GRADE N32
3. ALL WELDING TO BE IN ACCORDANCE WITH AS/NZ 1554.6 AND SHALL BE CLASS 2B GRADE (a) FINISH
4. 'O' RINGS SHALL BE NATURAL RUBBER 55–60 (SHORE A) TO AS 1646 WITH HOT VULCANISED JOINT.
5. RUBBER 'O' RING SHALL BE SUPPLIED BY MAIN CONTRACTOR.

REFERENCE DRAWINGS

KJ79–5–3 PUMPING STATION – TOP SLABS CONCRETE PLAN AND SECTIONS
KJ79–5–6 COVER PLATE AND FRAME DETAILS – SHEET 2 OF 2

(1) 100 50 0 100 200 300 mm SCALE 1:5

(2) 50 40 30 20 10 0 50 100 mm SCALE 1:2

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE | VERTICAL DATUM AHD | COORDINATE SYS MGA94–50 | ASCON SURVEY NONE | DES REF | DES CALC J. LU | DES CHD R. FOURIE | DRN J. LU | Q.C. CHD C. CARNEVALI

NORTH POINT

Jacobs

RECOMMENDED CONSULTANT PROJECT MANAGER

APPROVED CONSULTANT PROJECT DIRECTOR

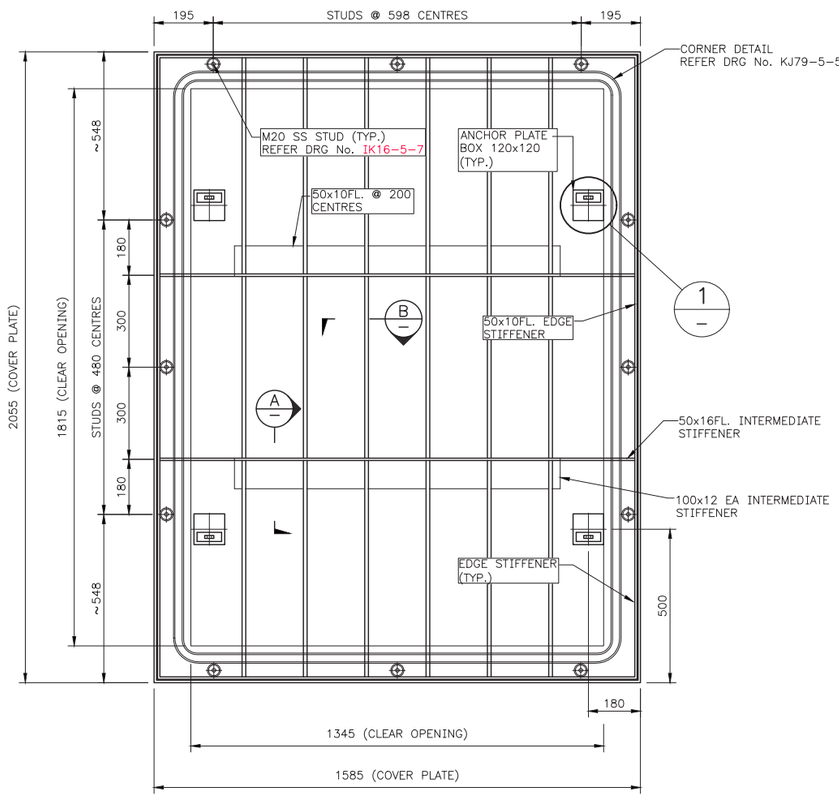
WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM PUMPING STATION
COVER PLATE AND FRAME DETAILS – SHEET 1 OF 2

FILE | PLAN KJ79–5–5 | CAD | ISSUE A2 | PROJECT C–S01648

ORIGINAL SHEET SIZE A1 MF

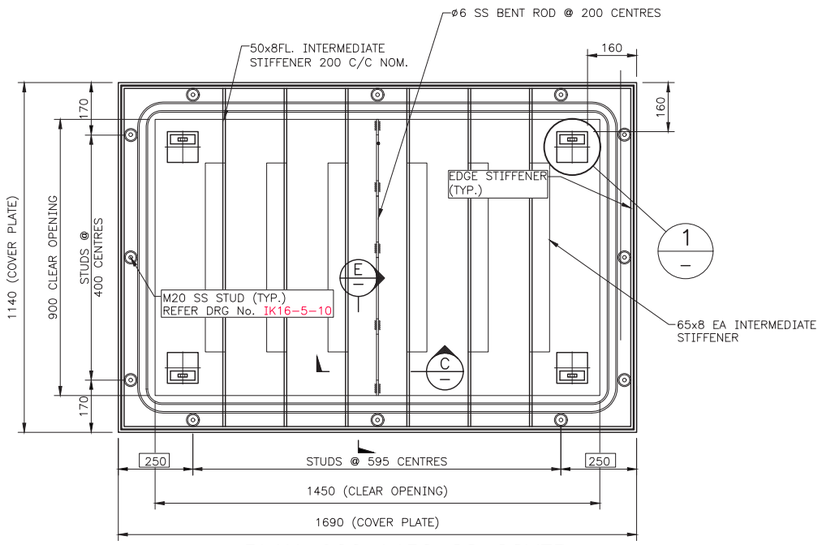
566
810



PLAN–1345x1815 SS COVER

SCALE (2)

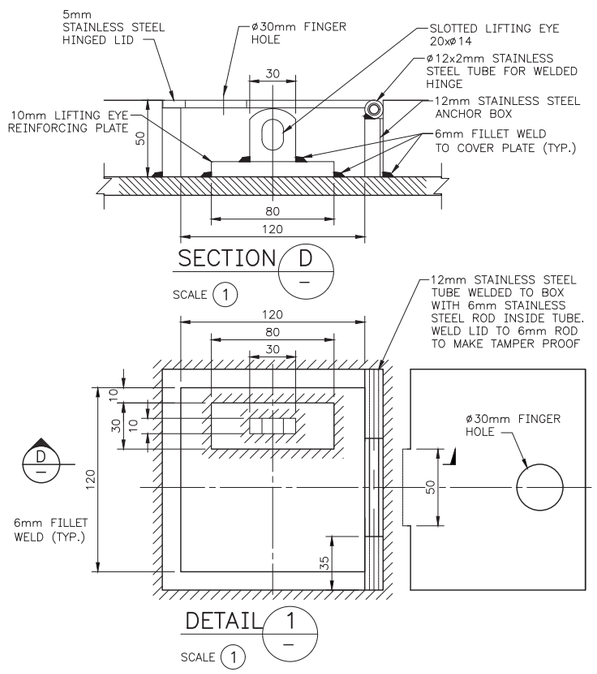
2 OFF PLASTIC LINED



PLAN–900x1450 SS COVER

SCALE (2)

2 OFF PLASTIC LINED

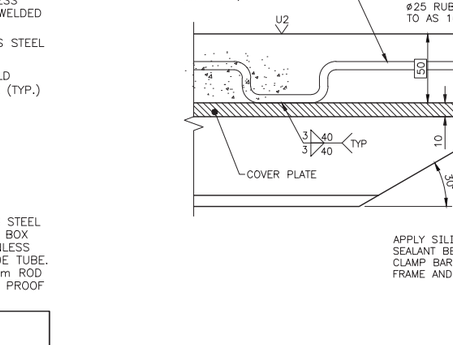


NOTES

1. ALL STEEL TO BE STAINLESS STEEL GRADE 316L.
2. SHACKLE AND HOOK TO HAVE A MINIMUM WORKING LOAD LIMIT OF 0.5 Ton.
3. SHACKLE TO BE PLACED THROUGH SLOTTED HOLE IN ANCHOR PLATE.
4. HOOK CLIP TO SHACKLE, NOT TO LIFTING PLATE.

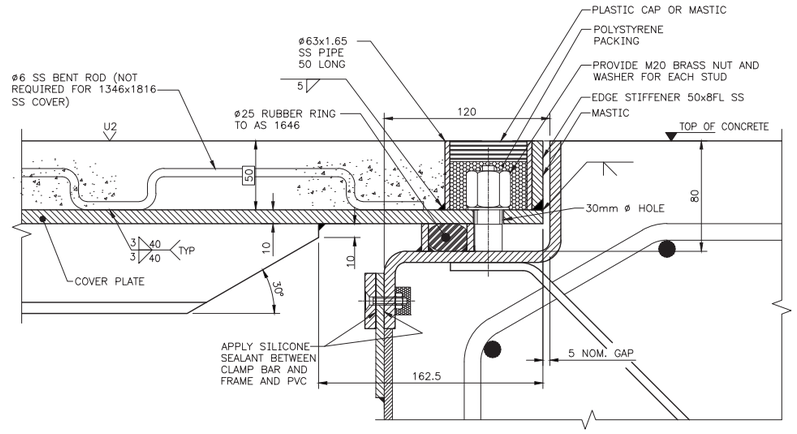
SECTION A

SCALE (1)



SECTION B

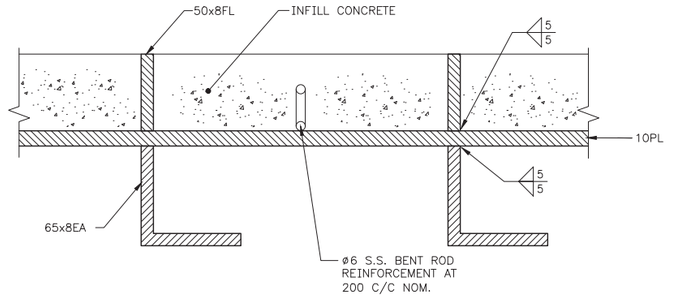
SCALE (1)



SECTION E

SCALE

ASSEMBLED DETAIL



SECTION C

SCALE (1)

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

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REV	DATE	DESCRIPTION
A2	22.10.20	ISSUED FOR CLIENT REVIEW
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NOTES:

FOR BASE FRAME DETAIL AND NOTES, REFER TO DRG No. KJ79-5-5

REFERENCE DRAWINGS

KJ79-5-3 PUMPING STATION – TOP SLABS CONCRETE PLAN AND SECTIONS
KJ79-5-5 PUMPING STATION – COVER PLATE AND FRAME DETAILS – SHEET 1 OF 2

(1) 50 40 30 20 10 0 50 100 mm SCALE 1:2

(2) 100 50 0 100 200 300 400 500 600 700 mm SCALE 1:10

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM AHD	DES CALC J. LU	NORTH POINT	RECOMMENDED CONSULTANT PROJECT MANAGER
	COORDINATE SYS MGA94–50	DES CHD R. FOURIE		
ASCON SURVEY NONE	DES REF	DRN J. LU		APPROVED CONSULTANT PROJECT DIRECTOR
		Q.C. CHD C. LEGERSTEE		

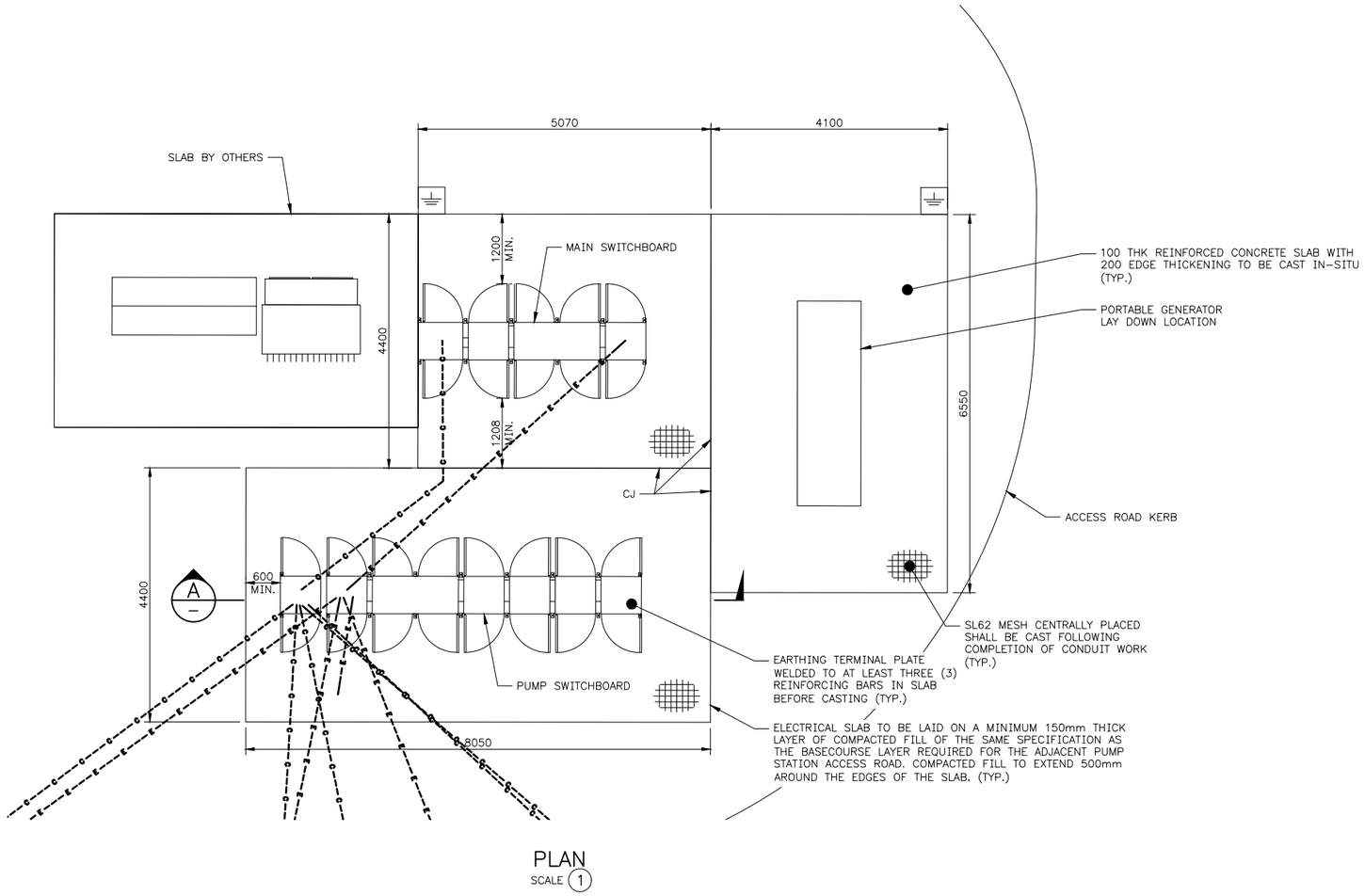
Jacobs

WATER CORPORATION

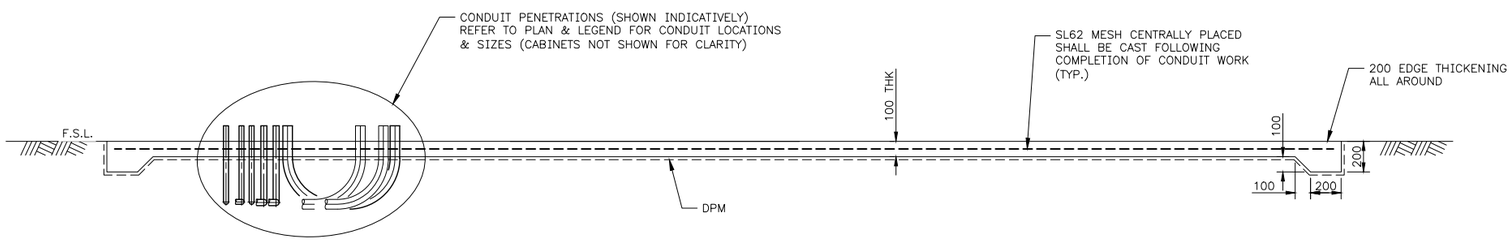
METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM PUMPING STATION
COVER PLATE AND FRAME DETAILS – SHEET 2 OF 2

FILE	PLAN	CAD	ISSUE	ORIGINAL SHEET SIZE
PROJECT C–S01648	KJ79–5–6		A2	A1
				MF

566
810



PLAN
SCALE (1)



SECTION A–A
SCALE (2)

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs
NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A2	22.12.20	ISSUED FOR CLIENT REVIEW
A1	20.10.20	ISSUED FOR SQUAD CHECK

LEGEND

—E—E—E—E— NEW UNDERGROUND LV POWER CONDUIT BURIED 500MM BELOW FGL TO TOP 1x32mm DIAMETER ORANGE HD PVC UOI

—C—C—C—C— NEW UNDERGROUND CONTROLS CONDUIT BURIED 500MM BELOW FGL TO TOP 1x32mm DIAMETER WHITE PVC UOI

CJ = CONSTRUCTION JOINT
DPM = DAMP PROOF MEMBRANE

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. CONCRETE GRADE TO BE 32MPa.
3. CONCRETE COVER 50mm UNO.
4. STEEL REINFORCEMENT GRADE TO BE 500MPa.
5. EARTHING CONNECTION TO REINFORCING TO BE PROVIDED.
6. ELECTRICAL SWITCHBOARD HOLD DOWN BOLTS (6 OFF).
7. GALVANISED CHEQUER PLATE COVERS OVER TRENCH.
8. NOMINAL FALL TO ALLOW FOR RAIN FALL RUN OFF.

REFERENCE DRAWINGS

KJ79-41-1 ELECTRICAL PRIMARY DESIGN – SITE PLAN

(1) 1000 500 0 1000 2000 3000 mm
SCALE 1:50

(2) 500 0 500 1000 mm
SCALE 1:20

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM AHD	DES CALC J. LU
	COORDINATE SYS MGA94–50	DES CHD R. FOURIE
ASCON SURVEY NONE	DES REF IW200060	DRN J. LU
		Q.C. CHD C. CARNEVALI

NORTH POINT

Jacobs

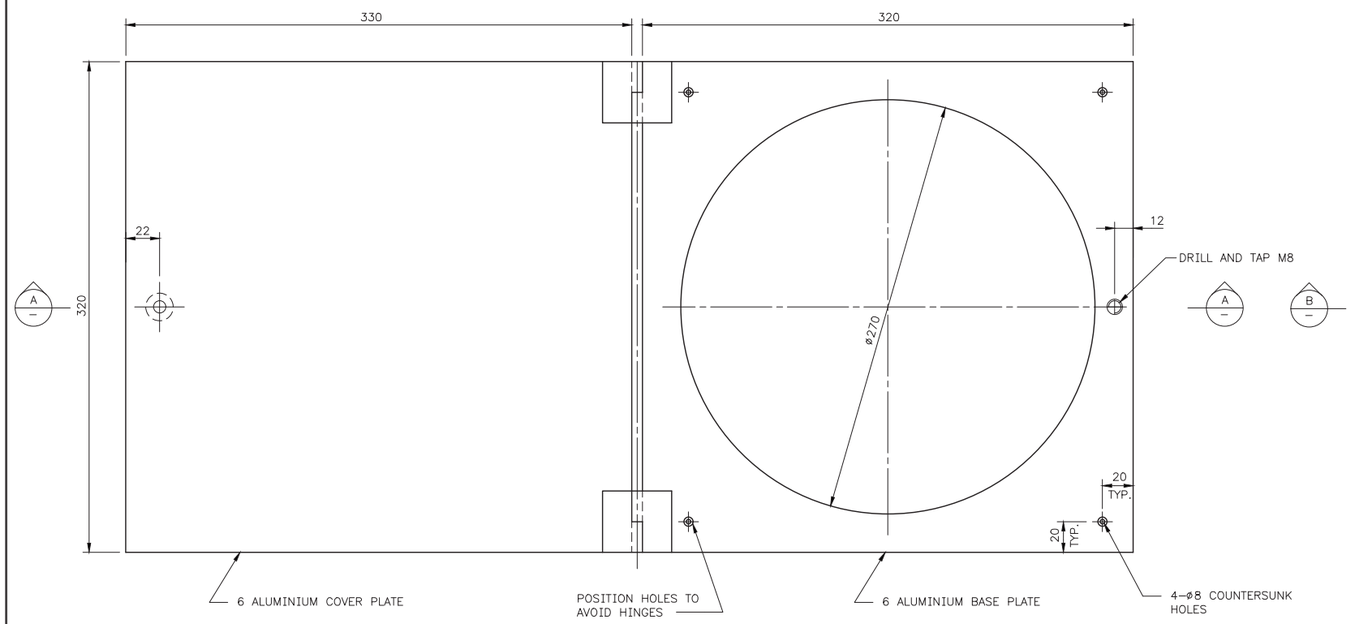
RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

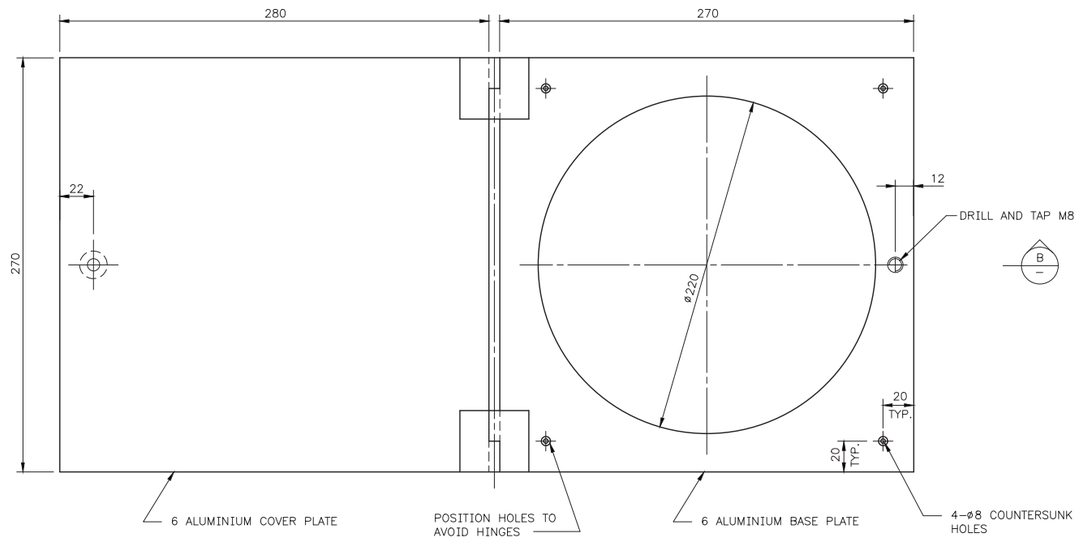
METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM
ELECTRICAL CABINET
CONCRETE SLAB AND REINFORCEMENT DETAILS

FILE PROJECT C–S01648
PLAN KJ79–5–10
CAD
ISSUE A1
ORIGINAL SHEET SIZE A1
MF

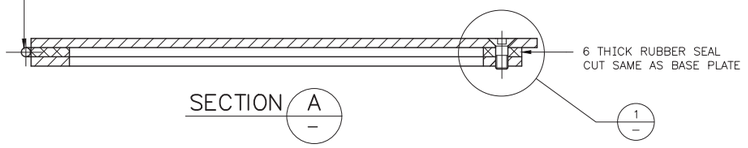
566
810



PLAN
SCALE NTS

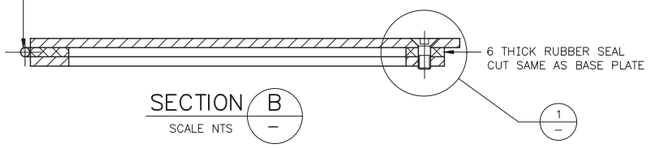


PLAN
SCALE NTS



SECTION A

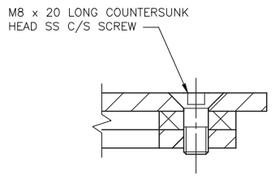
(COVER PLATE CLOSED)



SECTION B
SCALE NTS

(COVER PLATE CLOSED)

ALARM/PENSTOCK/VALVE HOLE COVER
7–OFF



DETAIL 1
SCALE NTS

CONTROL HOLE COVER
2–OFF

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

A2	22.10.20	ISSUED FOR CLIENT REVIEW
A1	20.10.20	ISSUED FOR SQUAD CHECK
REV	DATE	DESCRIPTION

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
2. SS FASTENERS SHALL COMPLY WITH ASTM A276 GRADE 316.

REFERENCE DRAWINGS

KJ79–4–1 PUMPING STATION – GENERAL ARRANGEMENT AND DETAILS – SHEET 1 OF 2
KJ79–5–3 PUMPING STATION – TOP SLABS CONCRETE PLAN AND SECTIONS

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM AHD	DES CALC J. LU	NORTH POINT
	COORDINATE SYS MGA94–50	DES CHD R. FOURIE	
ASCON SURVEY NONE	DES REF IW200060	DRN J. LU	
		Q.C. CHD C. CARNEVALI	

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

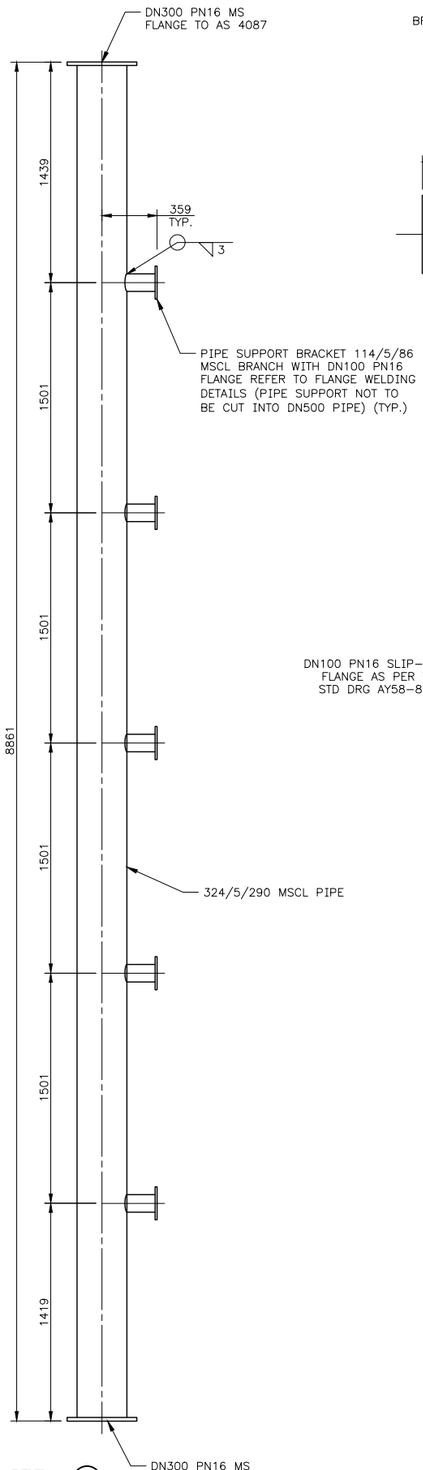
WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM PUMPING STATION
COVER /ALARM AND PENSTOCK/VALVE OPENING/COVER DETAIL

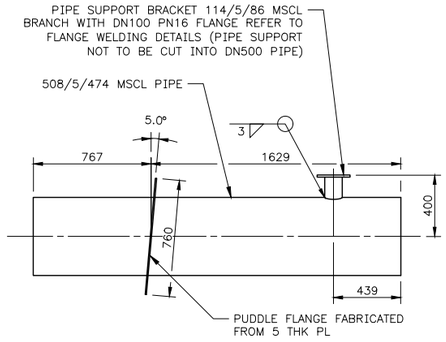
FILE	PLAN	CAD	ISSUE
PROJECT C–S01648	KJ79–6–1		A2

ORIGINAL SHEET SIZE A1
MF

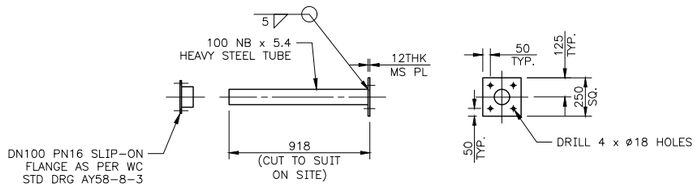
566
810



ITEM (4)
SCALE (1)
QTY: 2 OFF

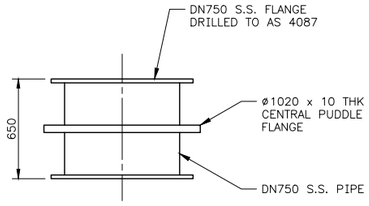


ITEM (7)
SCALE (1)
QTY: 2 OFF

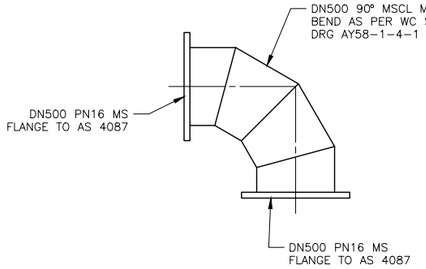


ELEVATION END VIEW

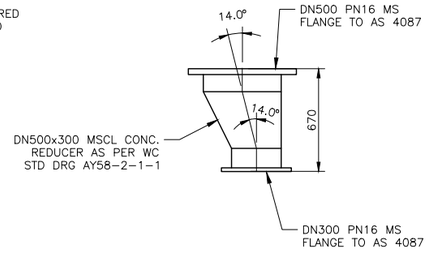
ITEM (8)
SCALE (1)
QTY: 12 OFF



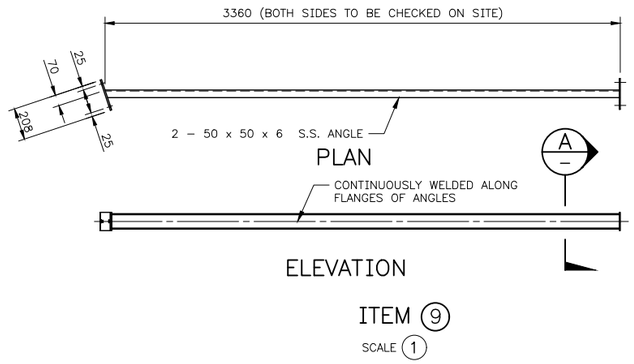
ITEM (3)
SCALE (1)
QTY: 1 OFF



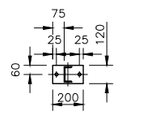
ITEM (5)
SCALE (1)
QTY: 2 OFF



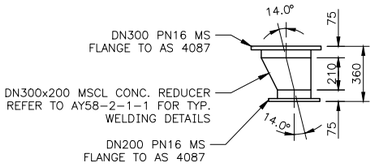
ITEM (1)
SCALE (1)
QTY: 2 OFF



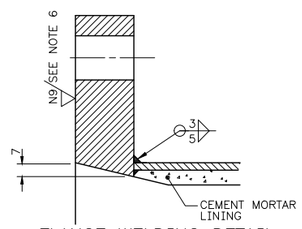
ITEM (9)
SCALE (1)
QTY: 10 OFF



SECTION (A)
SCALE (1)



ITEM (6)
SCALE (1)
QTY: 2 OFF



FLANGE WELDING DETAIL
SCALE: NTS

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs
NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A2	23.12.20	ISSUED FOR SQUAD CHECK
A1	19.12.20	ISSUED FOR INTERNAL REVIEW

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
2. REFER TO KJ79–1–1 FOR GENERAL NOTES.
3. ALL SPOOLS TO BE SITE MEASURED BY THE CONTRACTOR PRIOR TO FABRICATION.

REFERENCE DRAWINGS

KJ79–4–1	GENERAL ARRANGEMENT AND DETAILS – SHEET 1 OF 2
AY58–1–4–1	FOUR SEGMENT BEND TO AS 4041
AY58–8–3	FLANGED MATCHING PIECE – DN100 TO DN400 SO

(1) 500 0 500 1000 mm
SCALE 1:20

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM NONE	DES CALC J. LU
	COORDINATE SYS NONE	DES CHD R. FOURIE
ASCON SURVEY NONE	DES REF IW200060	DRN K. BHATT
		Q.C. CHD J. LU

NORTH POINT

Jacobs

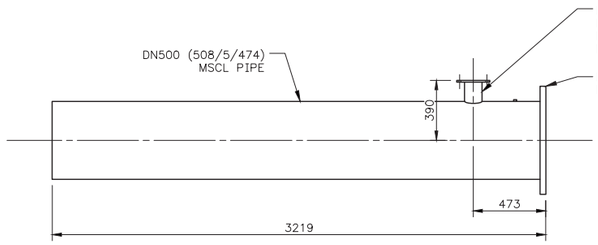
RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

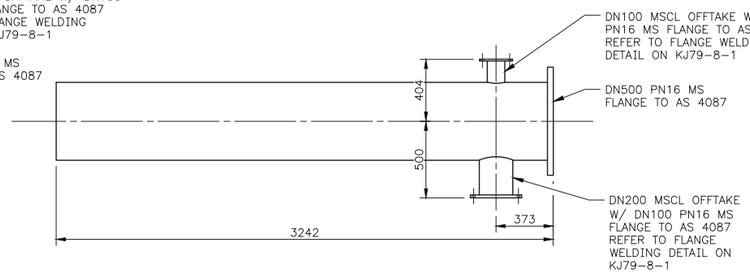
METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM PUMPING STATION
PIPE SPECIAL DETAILS – SHEET 1 OF 2

FILE
PROJECT C–S01648
PLAN KJ79–8–1
CAD
ISSUE A2
ORIGINAL SHEET SIZE A1
MF

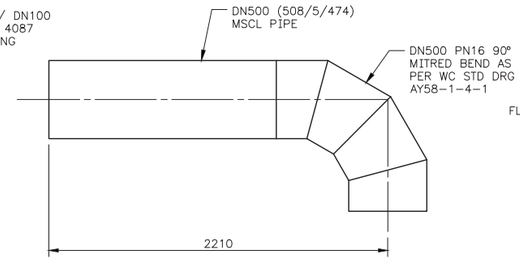
566
810



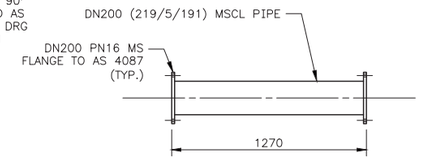
ITEM 25
SCALE 1
QTY: 1 OFF



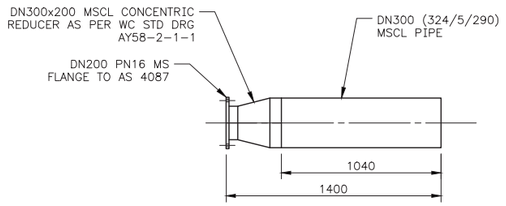
ITEM 27
SCALE 1
QTY: 1 OFF



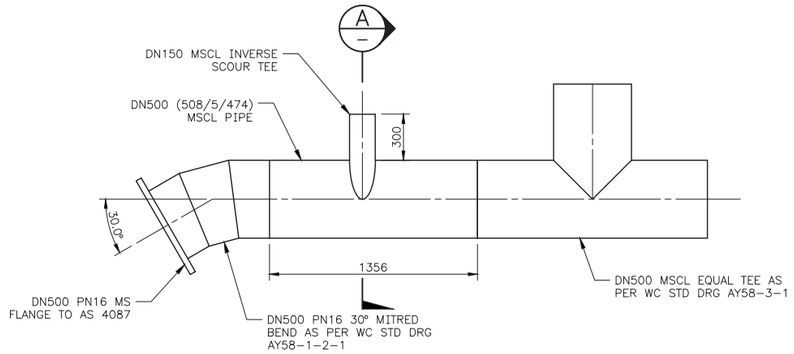
ITEM 29
SCALE 1
QTY: 1 OFF



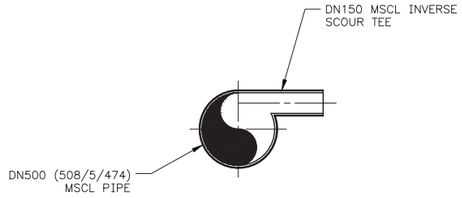
ITEM 30
SCALE 1
QTY: 1 OFF



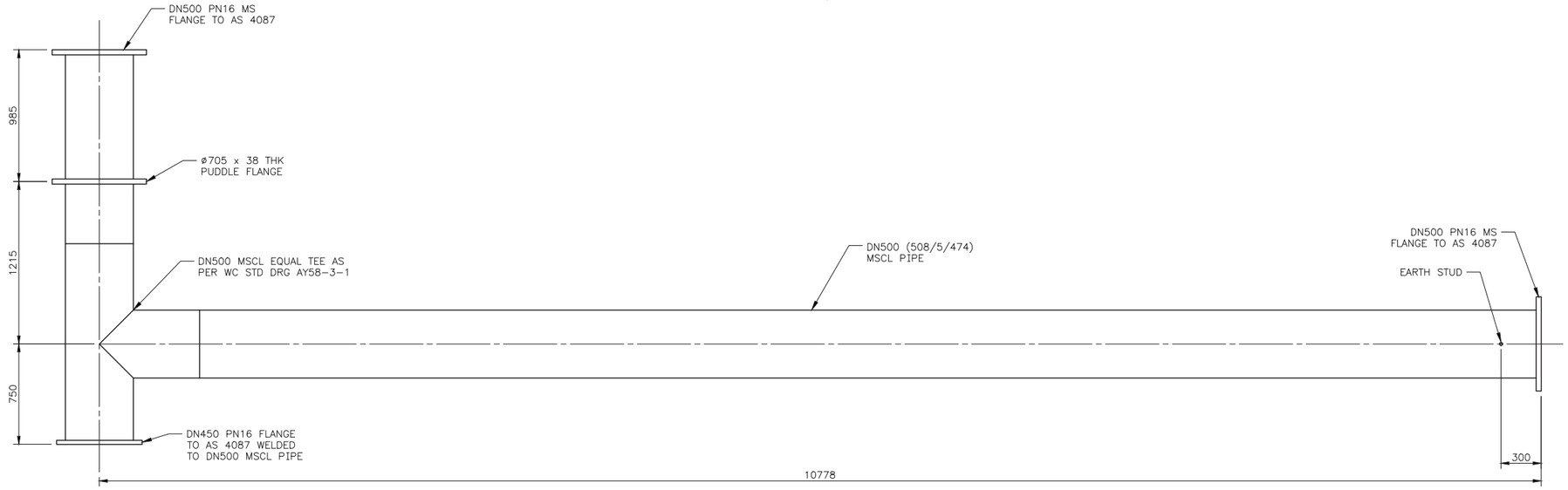
ITEM 32
SCALE 1
QTY: 1 OFF



ITEM 34
SCALE 1
QTY: 1 OFF



SECTION A
SCALE 1



ITEM 35
SCALE 1
QTY: 1 OFF

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A2	23.12.20	ISSUED FOR SQUAD CHECK
A1	19.12.20	ISSUED FOR INTERNAL REVIEW

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
2. REFER TO KJ79-1-1 FOR GENERAL NOTES.
3. ALL SPOOLS TO BE SITE MEASURED BY THE CONTRACTOR PRIOR TO FABRICATION.

REFERENCE DRAWINGS

KJ79-10-1 PUMPING STATION - VALVE PIT - GENERAL ARRANGEMENT

1 500 0 500 1000 mm
SCALE 1:20

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM NONE	DES CALC J. LU
	COORDINATE SYS NONE	DES CHD R. FOURIE
ASCON SURVEY NONE	DES REF IW200060	DRN K. BHATT
		Q.C. CHD J. LU

NORTH POINT

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

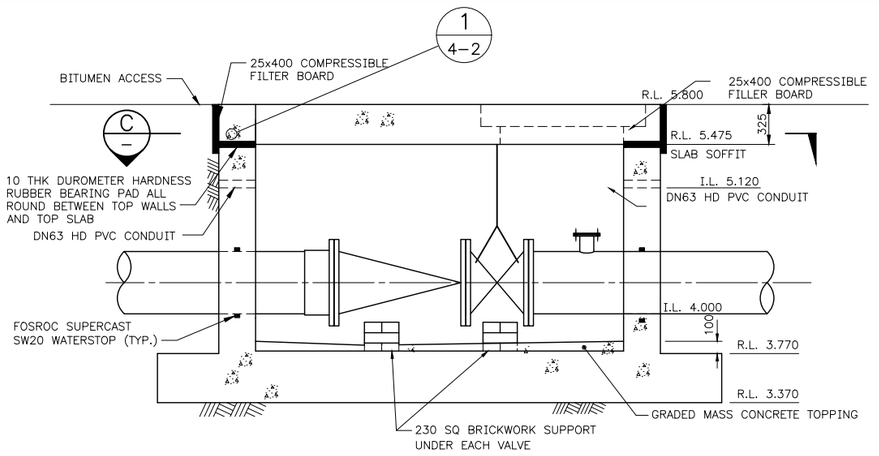
WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700-35- STILLWATER DR & PM PUMPING STATION
PIPE SPECIAL DETAILS - SHEET 2 OF 2

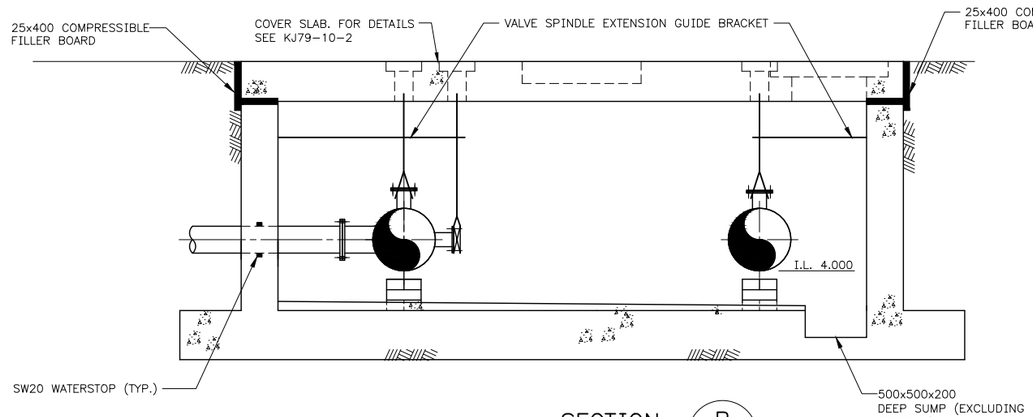
FILE
PROJECT C-S01648
PLAN KJ79-8-2
CAD
ISSUE A2

ORIGINAL SHEET SIZE A1
MF

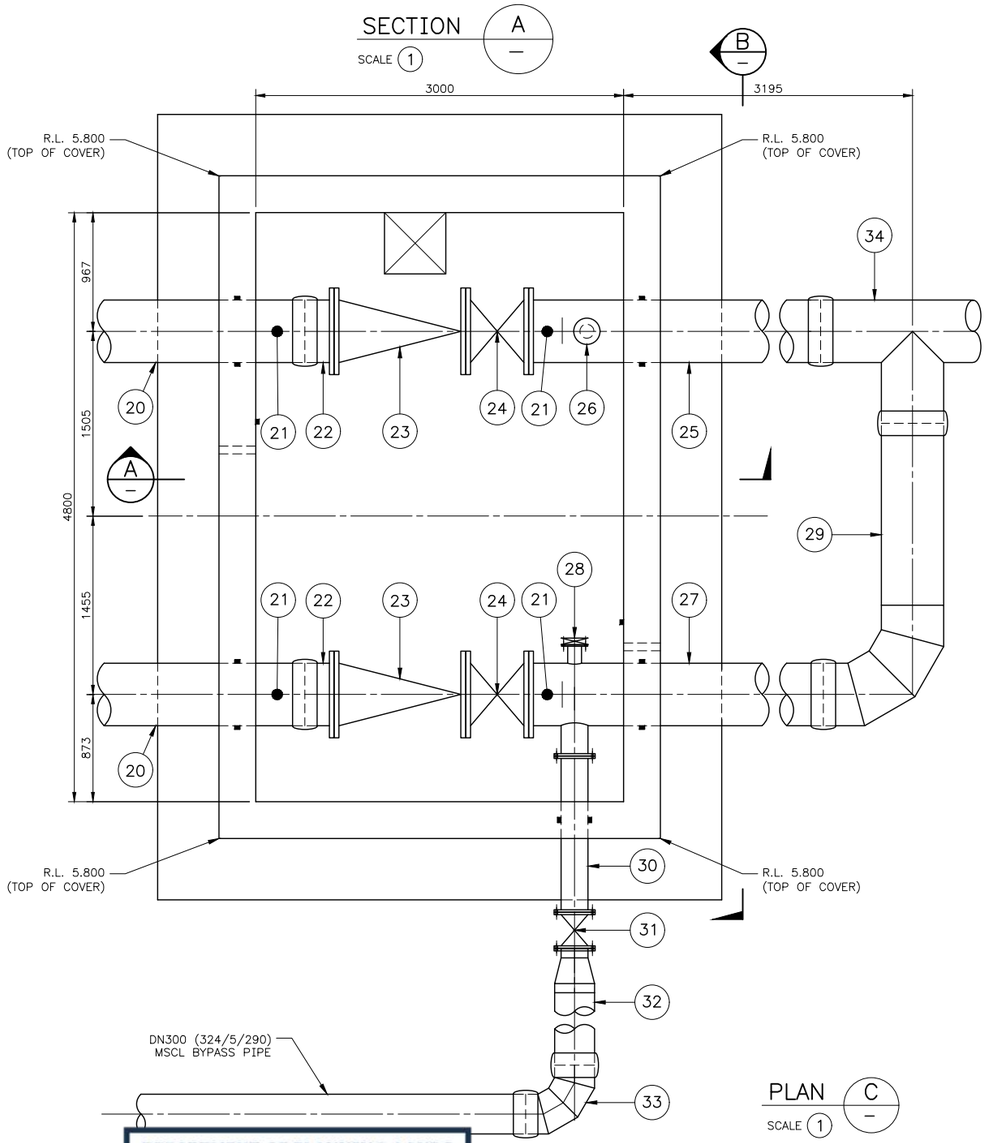
566
810



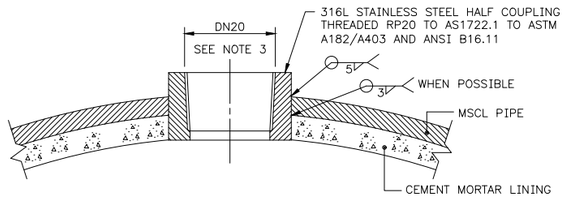
SECTION A
SCALE 1



SECTION B
SCALE 1



PLAN C
SCALE 1



*REFERS TO THE AMERICAN SOCIETY FOR TESTING AND MATERIALS SPECIFICATION

DETAIL 1
SCALE: NTS

GENERAL NOTES

1. FLANGES TO AS 4087 PN16. UNLESS OTHERWISE NOTED.
2. FABRICATION TO BE TO AS 4041 PIPEWORK CLASS 2P.
3. FIX ø10 BRONZE GATE VALVES AND BRASS HEXAGONAL NIPPLES TO ITEMS 20, 25 AND 27.
4. EXTERNAL COATINGS OF MILD STEEL PIPEWORK ARE IN ACCORDANCE WITH THE SPECIFICATION.
5. CEMENT LINING WAS MADE GOOD AFTER FABRICATION.
6. FLANGE MACHINE FINISH TO N9 WITH A SPIRAL GROOVE IN ACCORDANCE WITH AS 2129.
7. GATE VALVES COMPLY WITH THE REQUIREMENTS OF AS 2638.2 AND THE WATER CORPORATIONS SPS 272.
8. SWING CHECK VALVES COMPLY WITH THE REQUIREMENTS OF AS 4794 AND THE WATER CORPORATIONS SPS 223.
9. MSCL PIPEWORK WHERE SITE WELDED USING WATER CORPORATION STANDARD WELDING BANDS REFER DRG AY58–13–1.
10. REFER TO KJ79–8–2 FOR PIPE SPECIAL DETAILS.

REFERENCE DRAWINGS

KJ79–3–1	PUMPING STATION SITE PLAN
KJ79–4–2	PUMPING STATION GENERAL ARRANGEMENT AND DETAILS – SHEET 2 OF 2
KJ79–10–2	PUMPING STATION – VALVE PIT – CONCRETE AND REINFORCING DETAILS
KJ79–10–3	PUMPING STATION – VALVE PIT – BYPASS PUMPING PIT & PIPE FITTING DETAILS
KJ79–8–2	PIPE SPECIAL DETAILS – SHEET 2 OF 2

1 500 0 500 1000 1500 mm
SCALE 1:25

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A6	22.12.20	ISSUED FOR CLIENT REVIEW
A5	17.12.20	RE–ISSUED FOR SQUAD CHECK

ITEM	DESCRIPTION	MATERIAL	QTY	REMARKS
34	DN500 MSCL PIPE SPECIAL	MSCL	1	KJ79–8–2
33	DN300 90° MITRED BEND	MSCL	1	AY58–1–4–1
32	DN300x200 REDUCER PIPE SPECIAL	MSCL	1	KJ79–8–2
31	DN200 PN16 GATE VALVE	DI	1	TO AS2638.2 AND SPS 272
30	DN200 MSCL SPOOL	MSCL	1	KJ79–8–2
29	DN500 MSCL 'J–PIECE' PIPE SPECIAL	MSCL	1	KJ79–8–2
28	DN100 PN16 GATE VALVE	DI	1	TO AS2638.2 AND SPS 272
27	DN500 PIPE W/ FLANGE ONE END & OFFTAKES PIPE SPECIAL	MSCL	1	KJ79–8–2
26	DN100 PN16 BLANK FLANGE WITH FULL FACED GASKET	MS	1	TO AS 4087
25	DN500 PIPE W/ FLANGE ONE END & OFFTAKE PIPE SPECIAL	MSCL	1	KJ79–8–2
24	DN500 PN16 GATE VALVE	DI	2	TO AS2638.2 AND SPS 272
23	DN500 PN16 SWING CHECK NON–RETURN VALVE	DI	2	TO AS4794 AND SPS 223
22	DN500 FLANGED MATCHING PIECE – PN16	MSCL	2	AY58–8–6
21	DN20 TAPPING POINT	–	4	REFER DETAIL 1
20	DN500 MSCL PIPE (508/5/474)	MSCL	2	LENGTH TO SUIT

MATERIAL LIST

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE | VERTICAL DATUM AHD | COORDINATE SYS MGA94–50 | ASCON SURVEY NONE | DES REF IW200060 | DES CALC J. LU | DES CHD R. FOURIE | DRN J. LU | Q.C. CHD C. CARNEVALI | NORTH POINT

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM
PUMPING STATION – VALVE PIT
GENERAL ARRANGEMENT

FILE | PLAN KJ79–10–1 | CAD | ISSUE A2 | PROJECT C–S01648 | MF

ORIGINAL SHEET SIZE A1

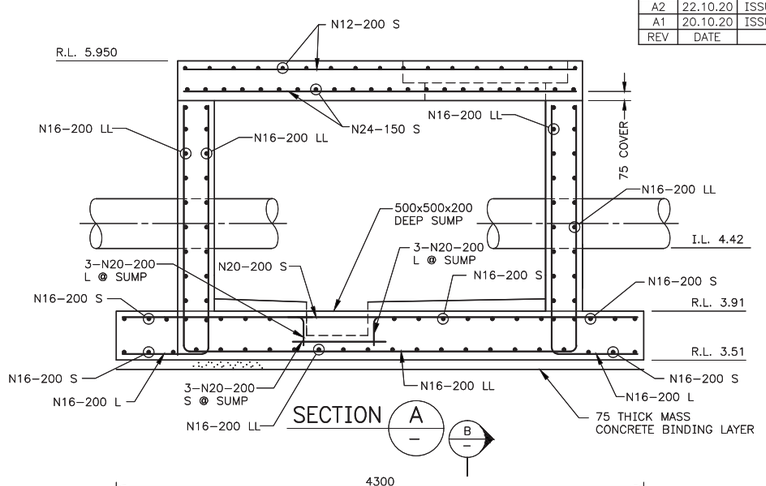
566
810

PRELIMINARY - NOT FOR CONSTRUCTION

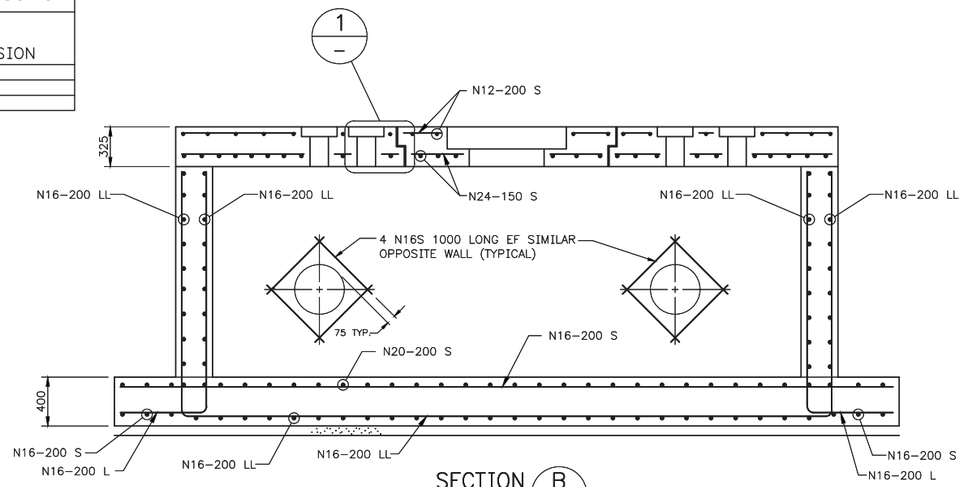
Jacobs

NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A2	22.10.20	ISSUED FOR CLIENT REVIEW
A1	20.10.20	ISSUED FOR SQUAD CHECK



SECTION A — B



SECTION B

SCALE 1

GENERAL NOTES

1. REINFORCING STEEL TO BE STRUCTURAL GRADE D500N TO AS/NZ 4671
2. COVER TO BE 75 UNLESS OTHERWISE SHOWN. END COVER TO BE 50.
3. BARS TO BE CUT OR BENT AROUND OPENINGS TO MAINTAIN COVER.
4. ALL MEASUREMENTS ARE IN MILLIMETRES.
5. CONCRETE GRADE N40

BAR NOTATION

NO. OF SETS GRADE SIZE – SPACING SHAPE LOCATION (SEE LEGEND)

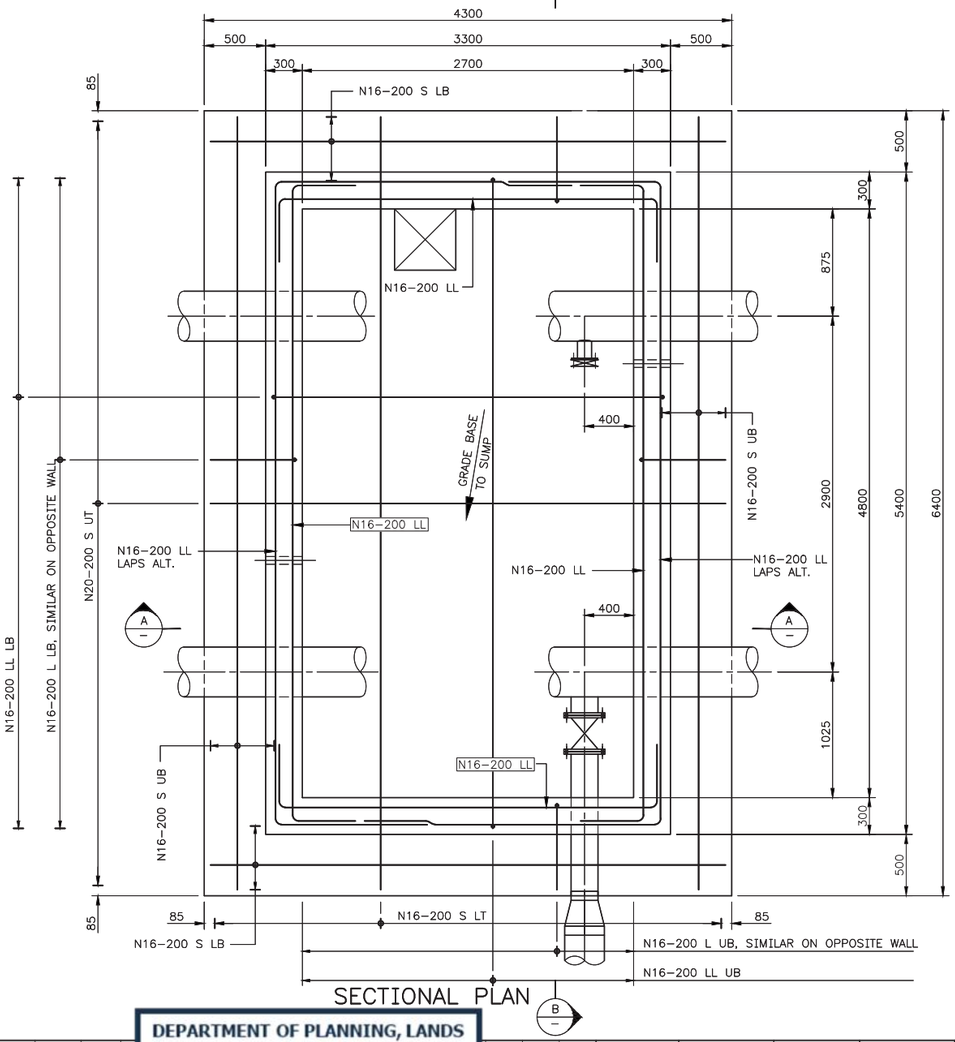
LEGEND

T	TOP
B	BOTTOM
UT	UPPER TOP
LT	LOWER TOP
UB	UPPER BOTTOM
LB	LOWER BOTTOM
EF	EACH FACE
S	STRAIGHT

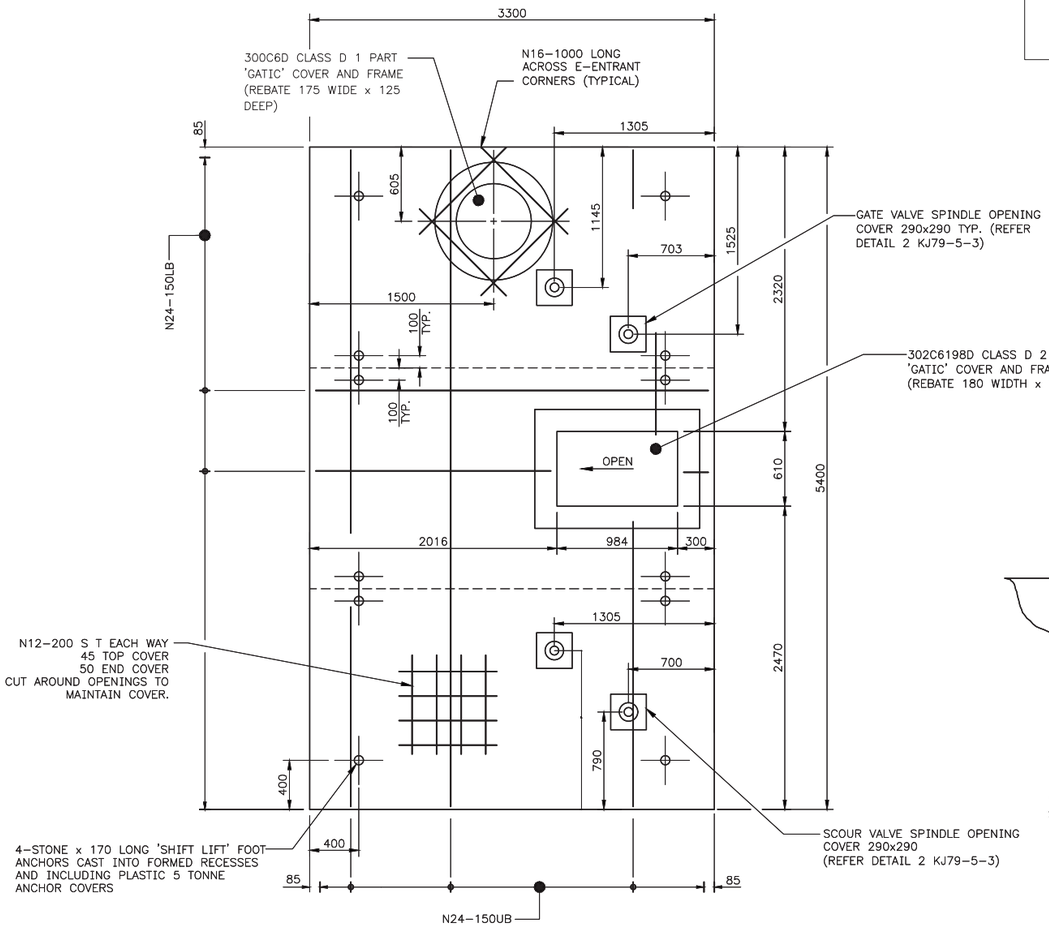
NOTE:
IN ORDER TO TAKE UP TOLERANCES AND ACHIEVE FALLS CORRESPONDING TO THE SURROUNDING PAVEMENT, PLACE THE FOLLOWING MORTAR MIX WITH A MINIMUM THICKNESS OF 10mm PRIOR TO PLACING THE TOP SLAB:

1 PART PORTLAND CEMENT
1.5 PART QUARRY FINES
SUPERPLASTICISER
0.3 : 1 WATER/CEMENT RATIO

WHEN PLACING TOP SLABS, JOINTS TO BE SEALED WITH EXPANDITE 'PLASTISEAL' MASTIC OR EQUIVALENT APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

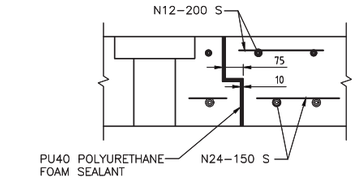


SECTIONAL PLAN — B



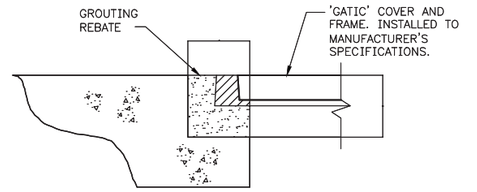
COVER SLAB

SCALE 1



DETAIL 1

SCALE: NTS



TYPICAL DETAIL AT 'GATIC' OPENING

SCALE: NTS

REFERENCE DRAWINGS

KJ79–3–1	PUMPING STATION SITE PLAN
KJ79–10–1	PUMPING STATION – VALVE PIT – GENERAL ARRANGEMENT
KJ79–5–3	PUMPING STATION – TOP SLABS CONCRETE PLAN AND SECTIONS

1 500 0 500 1000 1500 mm
SCALE 1:25

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM AHD	DES CALC J. LU	NORTH POINT	RECOMMENDED
	COORDINATE SYS MGA94–50	DES CHD R. FOURIE		CONSULTANT PROJECT MANAGER
ASCON SURVEY NONE	DES REF	DRN J. LU		APPROVED
		Q.C. CHD C.CARNEVALI		CONSULTANT PROJECT DIRECTOR

Jacobs

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM
PUMPING STATION – VALVE PIT
CONCRETE AND REINFORCING DETAILS

FILE	PLAN	CAD	ISSUE	ORIGINAL SHEET SIZE
PROJECT C–S01648	KJ79–10–2		A2	A1
			MF	

566
810

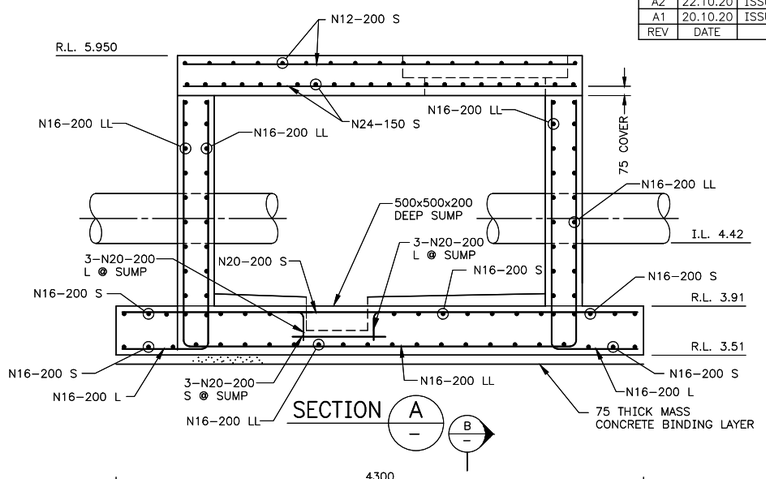
USERS\JLU\APPDATA\LOCAL\PROJECTWISE\JACOBS_ANZ_IE\D0359317\KJ79–010–002 01:26 22/10/2020 JLu/AUPER3LGWS0PH2

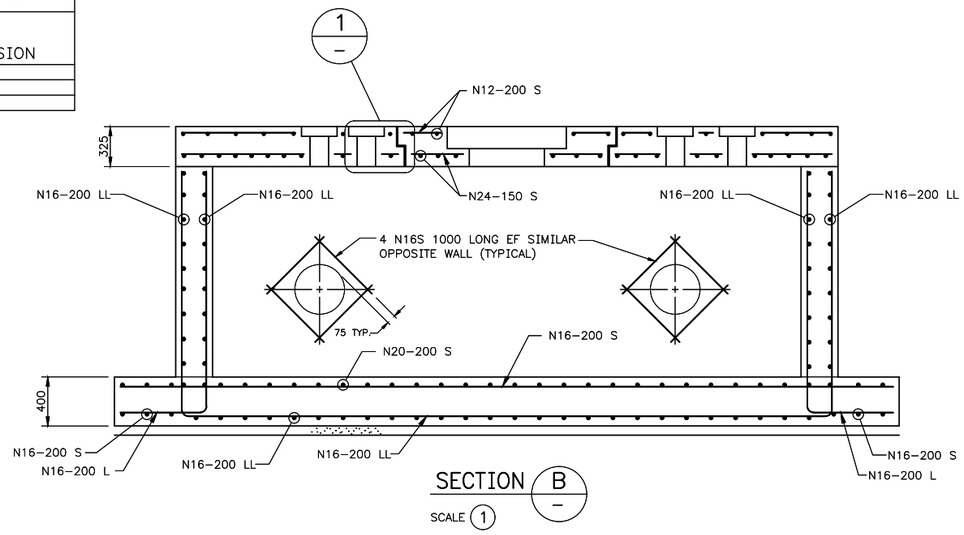
PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A2	22.10.20	ISSUED FOR CLIENT REVIEW
A1	20.10.20	ISSUED FOR SQUAD CHECK





GENERAL NOTES

1. REINFORCING STEEL TO BE STRUCTURAL GRADE D500N TO AS/NZ 4671
2. COVER TO BE 75 UNLESS OTHERWISE SHOWN. END COVER TO BE 50.
3. BARS TO BE CUT OR BENT AROUND OPENINGS TO MAINTAIN COVER.
4. ALL MEASUREMENTS ARE IN MILLIMETRES.
5. CONCRETE GRADE N40

BAR NOTATION

NO. OF SETS GRADE SIZE – SPACING SHAPE LOCATION (SEE LEGEND)

LEGEND

T	TOP
B	BOTTOM
UT	UPPER TOP
LT	LOWER TOP
UB	UPPER BOTTOM
LB	LOWER BOTTOM
EF	EACH FACE
S	STRAIGHT

NOTE:

IN ORDER TO TAKE UP TOLERANCES AND ACHIEVE FALLS CORRESPONDING TO THE SURROUNDING PAVEMENT, PLACE THE FOLLOWING MORTAR MIX WITH A MINIMUM THICKNESS OF 10mm PRIOR TO PLACING THE TOP SLAB:

1 PART PORTLAND CEMENT
1.5 PART QUARRY FINES
SUPERPLASTICISER
0.3 : 1 WATER/CEMENT RATIO

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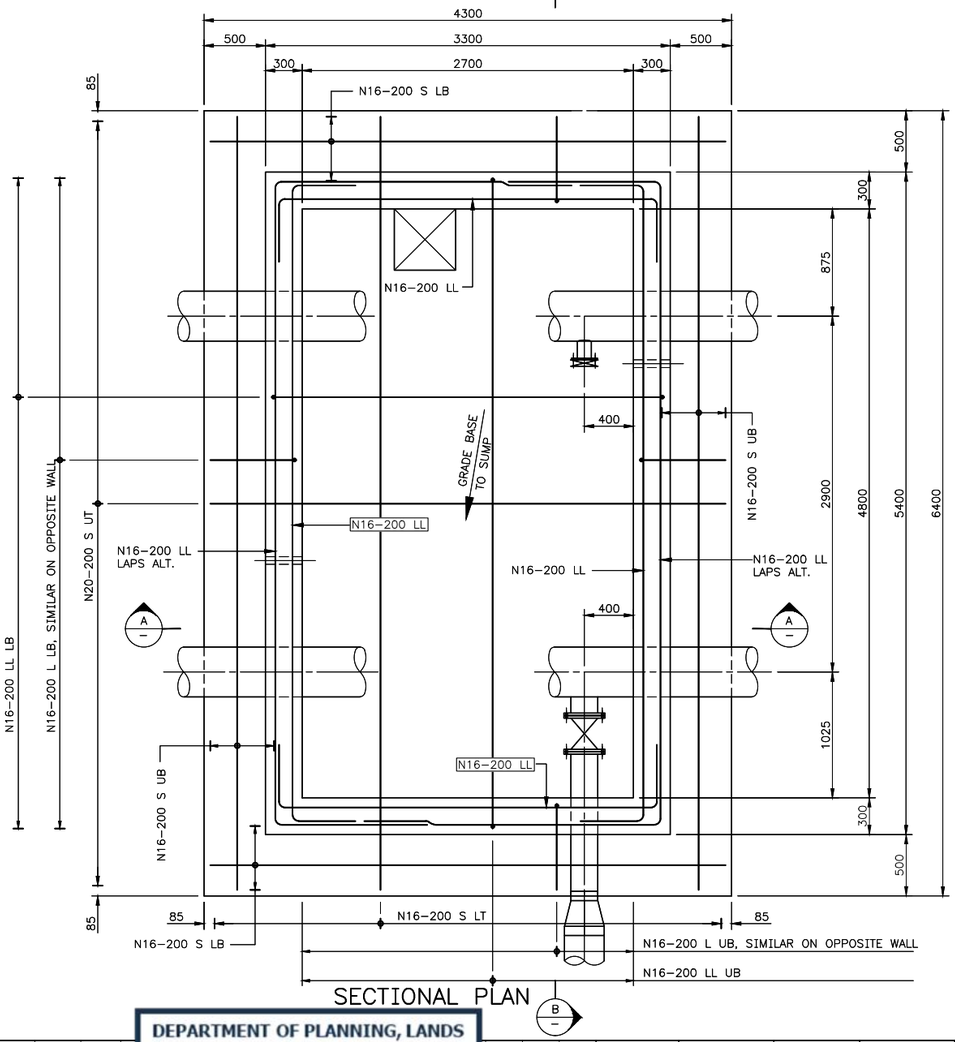
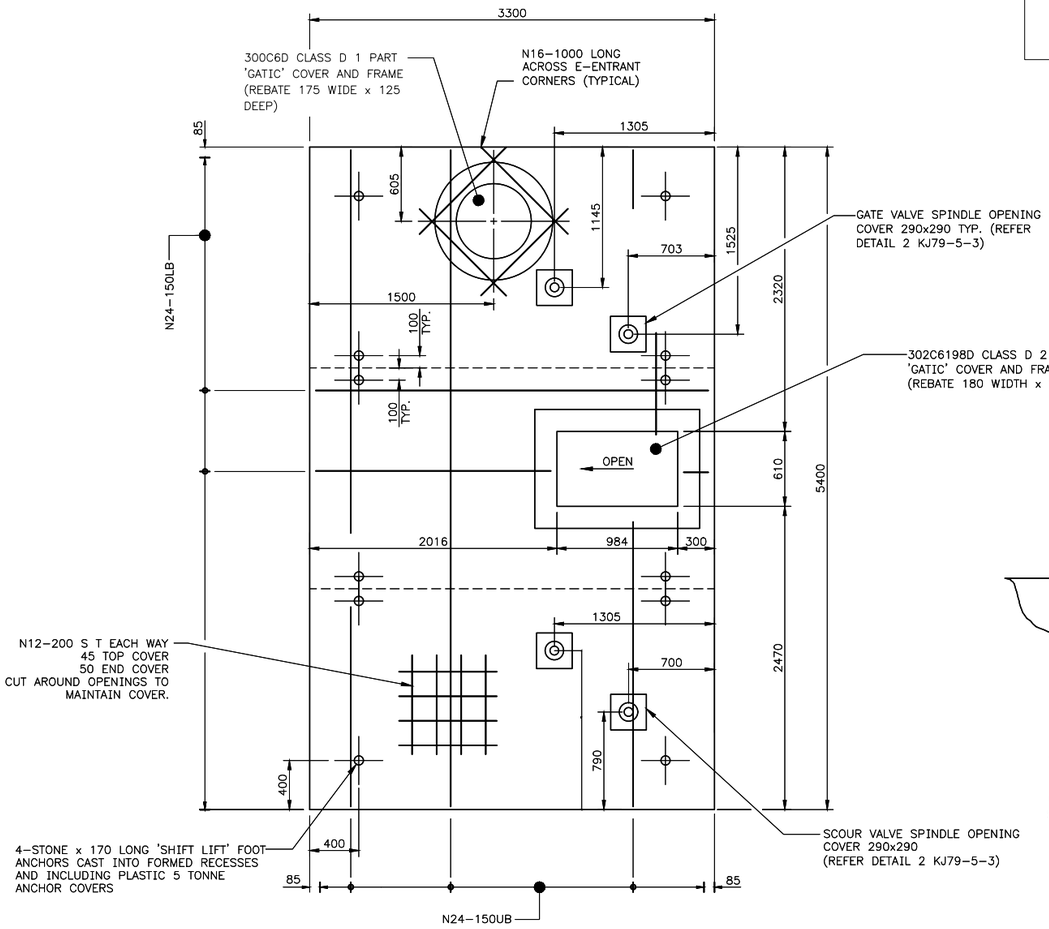
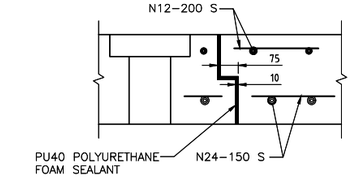
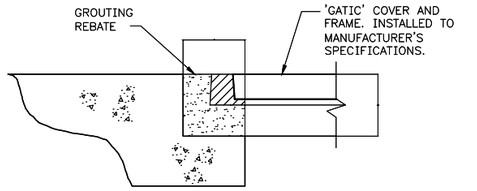








TYPICAL DETAIL AT 'GATIC' OPENING

SCALE: NTS

REFERENCE DRAWINGS

KJ79–3–1	PUMPING STATION SITE PLAN
KJ79–10–1	PUMPING STATION – VALVE PIT – GENERAL ARRANGEMENT
KJ79–5–3	PUMPING STATION – TOP SLABS CONCRETE PLAN AND SECTIONS

1 500 0 500 1000 1500 mm
SCALE 1:25

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM AHD	DES CALC J. LU	NORTH POINT	RECOMMENDED
	COORDINATE SYS MGA94–50	DES CHD R. FOURIE		CONSULTANT PROJECT MANAGER
ASCON SURVEY NONE	DES REF	DRN J. LU		APPROVED
		Q.C. CHD C.CARNEVALI		CONSULTANT PROJECT DIRECTOR

Jacobs

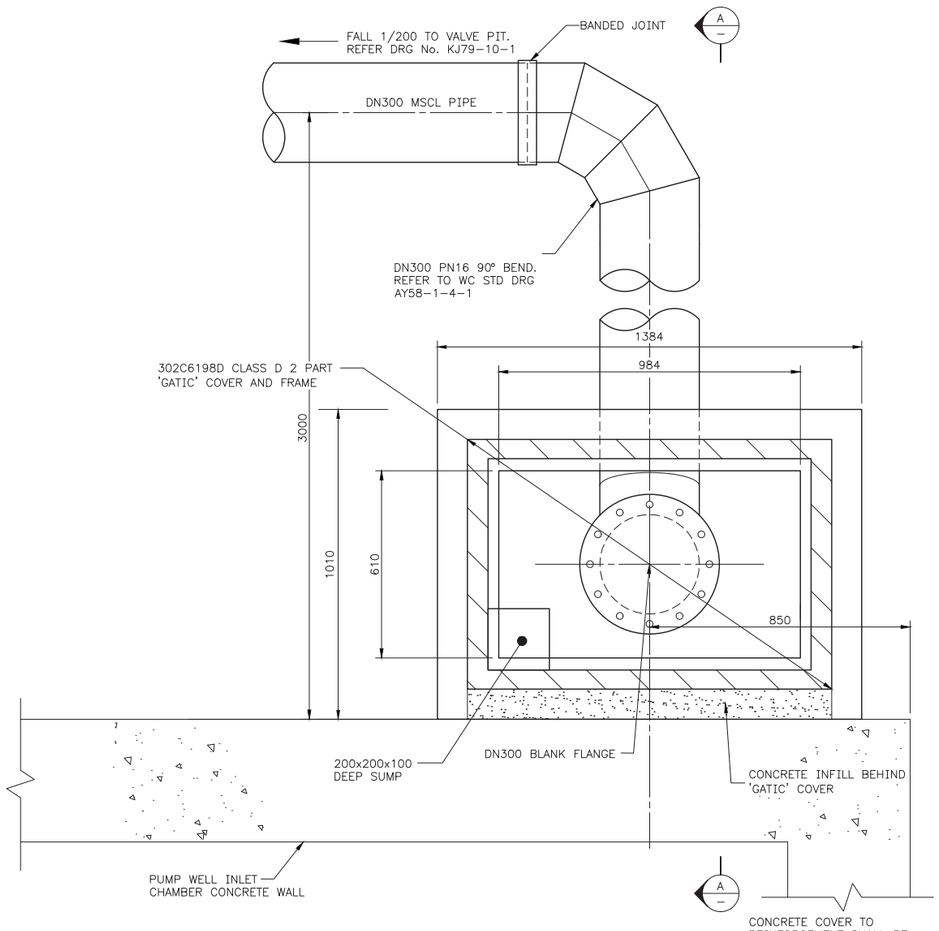
WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM
PUMPING STATION – VALVE PIT
CONCRETE AND REINFORCING DETAILS

FILE	PLAN	CAD	ISSUE	ORIGINAL SHEET SIZE
PROJECT C–S01648	KJ79–10–2		A2	A1
			MF	

566
810

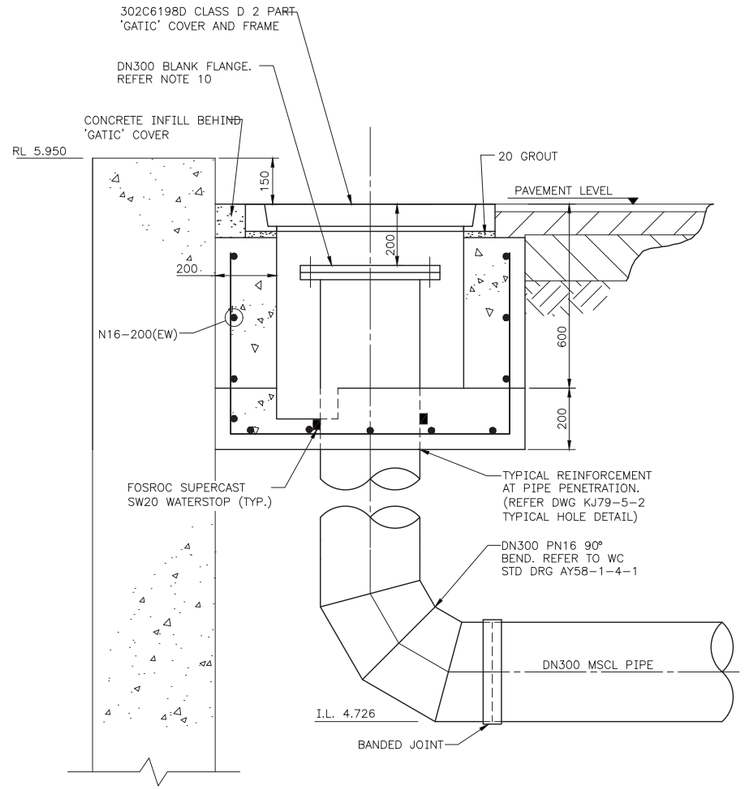
USERS\JLU\APPDATA\LOCAL\PROJECTWISE\JACOBS_ANZ_IE\D0359317\KJ79-010-002 01:26 22/10/2020 JLu/AUPER3LGWS0PH2



PLAN–INLET CHAMBER SCOUR PIT

SCALE (1)

NOTE: GATIC COVER
REMOVED FOR CLARITY



SECTION A–A

SCALE (1)

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL FLANGES SHALL COMPLY WITH AS 4087.

REFERENCE DRAWINGS

KJ79–3–1	PUMPING STATION SITE PLAN
KJ79–5–2	PUMPING STATION – REINFORCEMENT PLAN AND SECTIONS
KJ79–10–1	PUMPING STATION – VALVE PIT – GENERAL ARRANGEMENT
KJ79–10–2	PUMPING STATION – VALVE PIT – CONCRETE AND REINFORCING DETAILS
AY58–1–4–1	FOUR SEGMENT BEND TO AS 4041

(1) 100 50 0 100 200 300 400 500 600 700 mm
SCALE 1:10

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A2	22.10.20	ISSUED FOR CLIENT REVIEW
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DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

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	COORDINATE SYS MGA94–50	DES CHD R. FOURIE	
ASCON SURVEY NONE	DES REF IW200060	DRN J. LU	
		Q.C. CHD C. CARNEVALI	

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM
EMERGENCY BYPASS PUMPING
BYPASS PUMPING PIT & PIPE FITTING DETAILS

FILE	PLAN	CAD	ISSUE	ORIGINAL SHEET SIZE
PROJECT C–S01648	KJ79–10–3		A2	A1 MF

566
810

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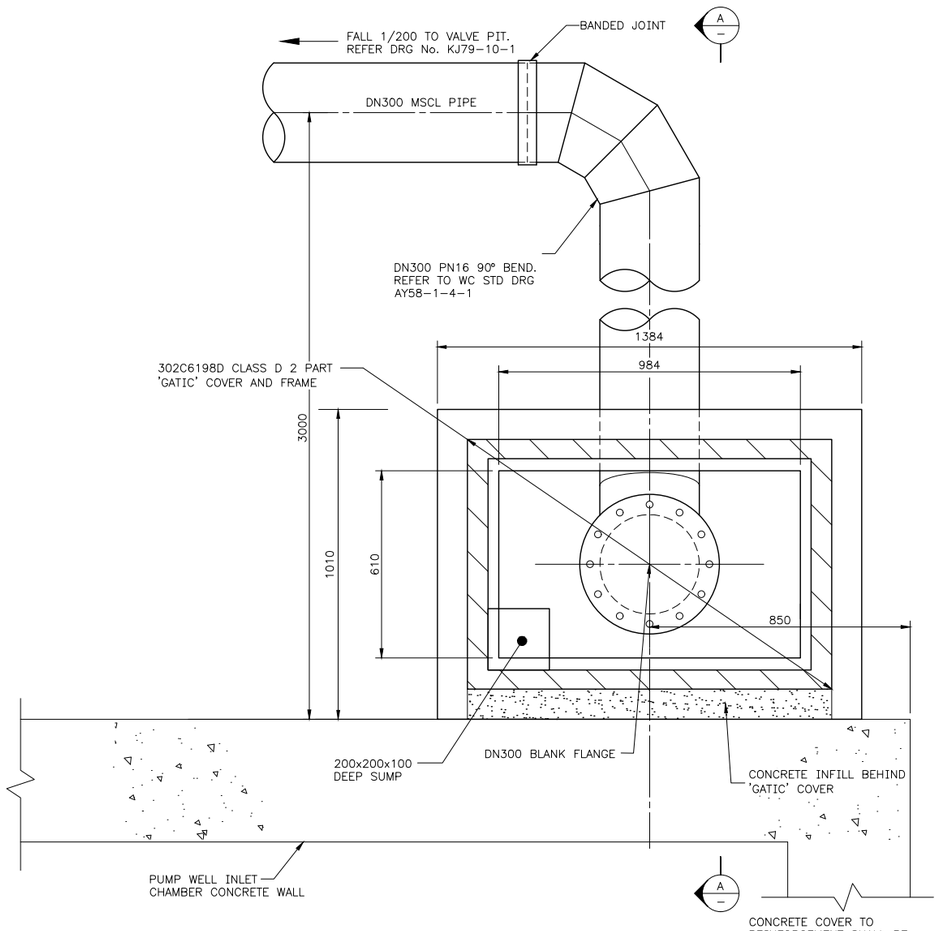
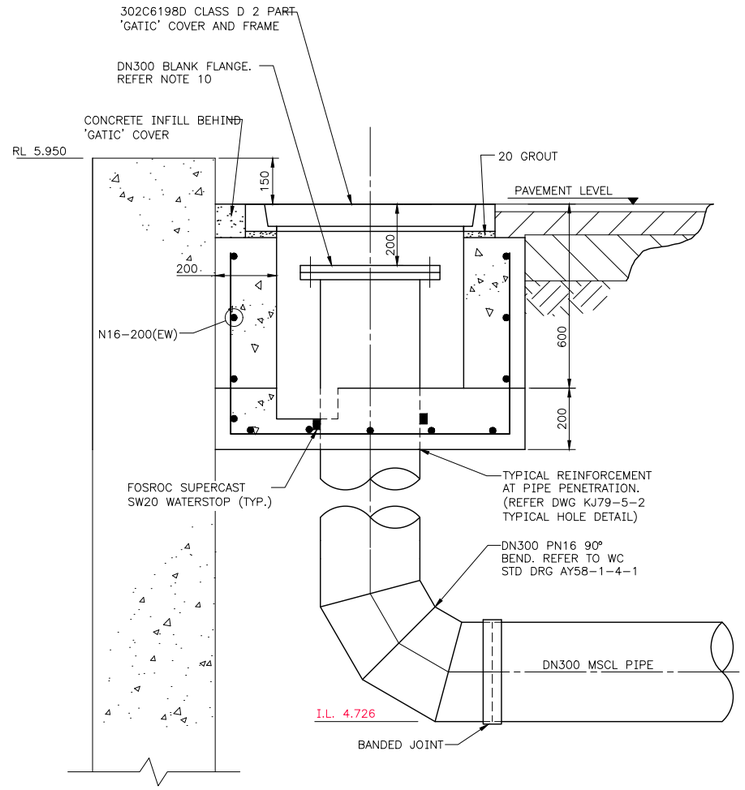


PLAN–INLET CHAMBER SCOUR PIT

SCALE (1)

NOTE: GATIC COVER
REMOVED FOR CLARITY



SECTION A–A

SCALE (1)

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL FLANGES SHALL COMPLY WITH AS 4087.

REFERENCE DRAWINGS

KJ79–3–1	PUMPING STATION SITE PLAN
KJ79–5–2	PUMPING STATION – REINFORCEMENT PLAN AND SECTIONS
KJ79–10–1	PUMPING STATION – VALVE PIT – GENERAL ARRANGEMENT
KJ79–10–2	PUMPING STATION – VALVE PIT – CONCRETE AND REINFORCING DETAILS
AY58–1–4–1	FOUR SEGMENT BEND TO AS 4041

(1) 100 50 0 100 200 300 400 500 600 700 mm
SCALE 1:10

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

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DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE | VERTICAL DATUM AHD | COORDINATE SYS MGA94–50 | ASCON SURVEY NONE | DES REF IW200060 | DES CALC J. LU | DES CHD R. FOURIE | DRN J. LU | Q.C. CHD C. CARNEVALI | NORTH POINT

Jacobs

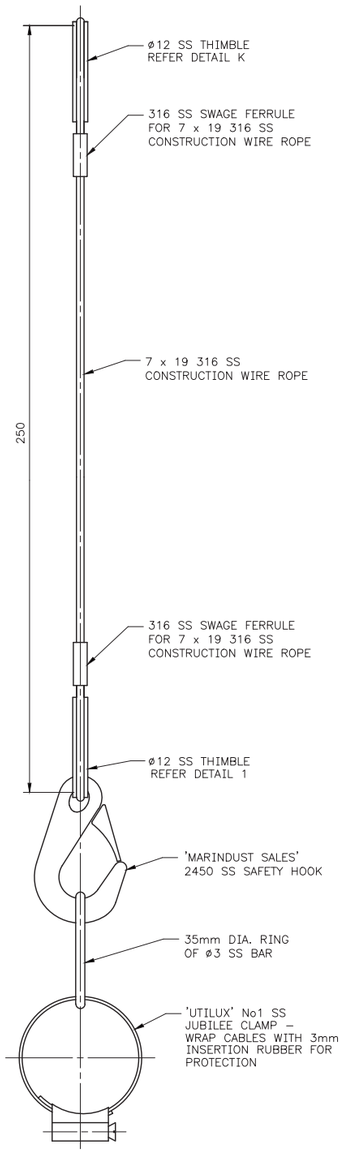
RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM
EMERGENCY BYPASS PUMPING
BYPASS PUMPING PIT & PIPE FITTING DETAILS

FILE PROJECT C–S01648 | PLAN KJ79–10–3 | CAD | ISSUE A2 | ORIGINAL SHEET SIZE A1 | MF

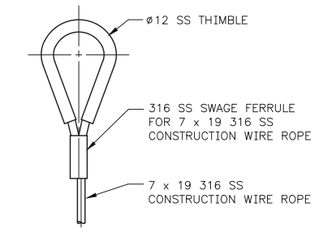
566
810



PUMP POWER CABLE LANYARD ASSEMBLY
MARK 20

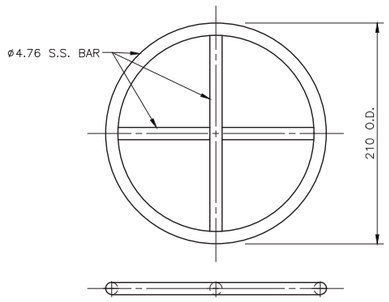
2–OFF

SCALE : DIAGRAMMATIC



DETAIL 1

SCALE : DIAGRAMMATIC



ULTRASONIC SUPPORT DETAILS

1–OFF

SCALE : DIAGRAMMATIC

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A2	22.10.20	ISSUED FOR CLIENT REVIEW
A1	20.10.20	ISSUED FOR SQUAD CHECK

REFERENCE DRAWINGS

KJ79–4–1	GENERAL ARRANGEMENT AND DETAILS – SHEET 1 OF 2
KJ79–4–2	GENERAL ARRANGEMENT AND DETAILS – SHEET 2 OF 2
KJ79–5–1	PUMPING STATION – CONCRETE PLAN AND SECTIONS
KJ79–5–2	PUMPING STATION – REINFORCEMENT PLAN AND DETAILS
KJ79–5–3	PUMPING STATION – TOP SLAB CONCRETE PLAN AND SECTIONS
KJ79–5–4	PUMPING STATION – TOP SLAB REINFORCEMENT PLAN AND DETAILS

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM AHD	DES CALC J. LU	NORTH POINT
	COORDINATE SYS MGA94–50	DES CHD R. FOURIE	
ASCON SURVEY NONE	DES REF IW200060	DRN J. LU	
		Q.C. CHD C. CARNEVALI	

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER

APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

THIS DRAWING IS DERIVED FROM CA01–20–15F

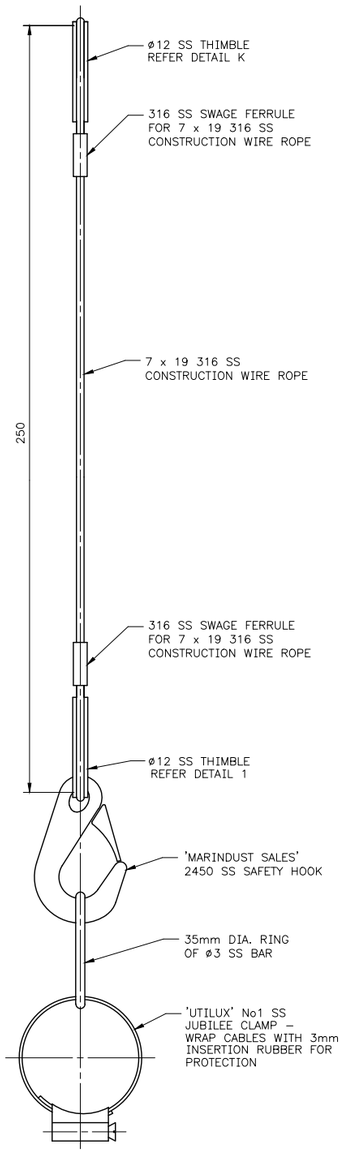
METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM
ULTRASONIC SUPPORT AND LANYARD DETAILS

ORIGINAL SHEET SIZE A1

FILE	PLAN	CAD	ISSUE	MF
PROJECT C–S01648	KJ79–13–1		A2	

566
810

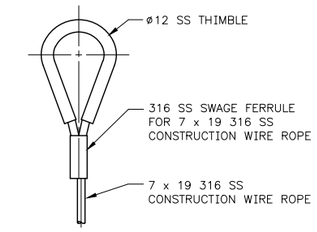
USERS\JLU\APPDATA\LOCAL\PROJECTWISE\JACOBS_ANZ_IE\D0359317\KJ79-013-001 01:25 22/10/2020 JLu/AUPER3LGWS0PH2



PUMP POWER CABLE LANYARD ASSEMBLY
MARK 20

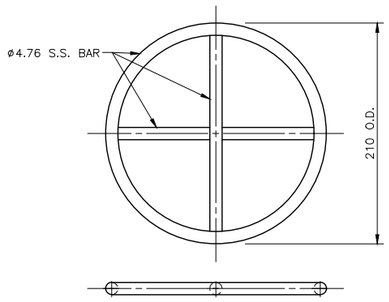
2–OFF

SCALE : DIAGRAMMATIC



DETAIL 1

SCALE : DIAGRAMMATIC



ULTRASONIC SUPPORT DETAILS

1–OFF

SCALE : DIAGRAMMATIC

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
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A1	20.10.20	ISSUED FOR SQUAD CHECK

REFERENCE DRAWINGS

KJ79–4–1	GENERAL ARRANGEMENT AND DETAILS – SHEET 1 OF 2
KJ79–4–2	GENERAL ARRANGEMENT AND DETAILS – SHEET 2 OF 2
KJ79–5–1	PUMPING STATION – CONCRETE PLAN AND SECTIONS
KJ79–5–2	PUMPING STATION – REINFORCEMENT PLAN AND DETAILS
KJ79–5–3	PUMPING STATION – TOP SLAB CONCRETE PLAN AND SECTIONS
KJ79–5–4	PUMPING STATION – TOP SLAB REINFORCEMENT PLAN AND DETAILS

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE | VERTICAL DATUM AHD | COORDINATE SYS MGA94–50 | ASCON SURVEY NONE | DES REF IW200060

DES CALC J. LU | DES CHD R. FOURIE | DRN J. LU | Q.C. CHD C. CARNEVALI

NORTH POINT

Jacobs

RECOMMENDED

CONSULTANT PROJECT MANAGER

APPROVED

CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

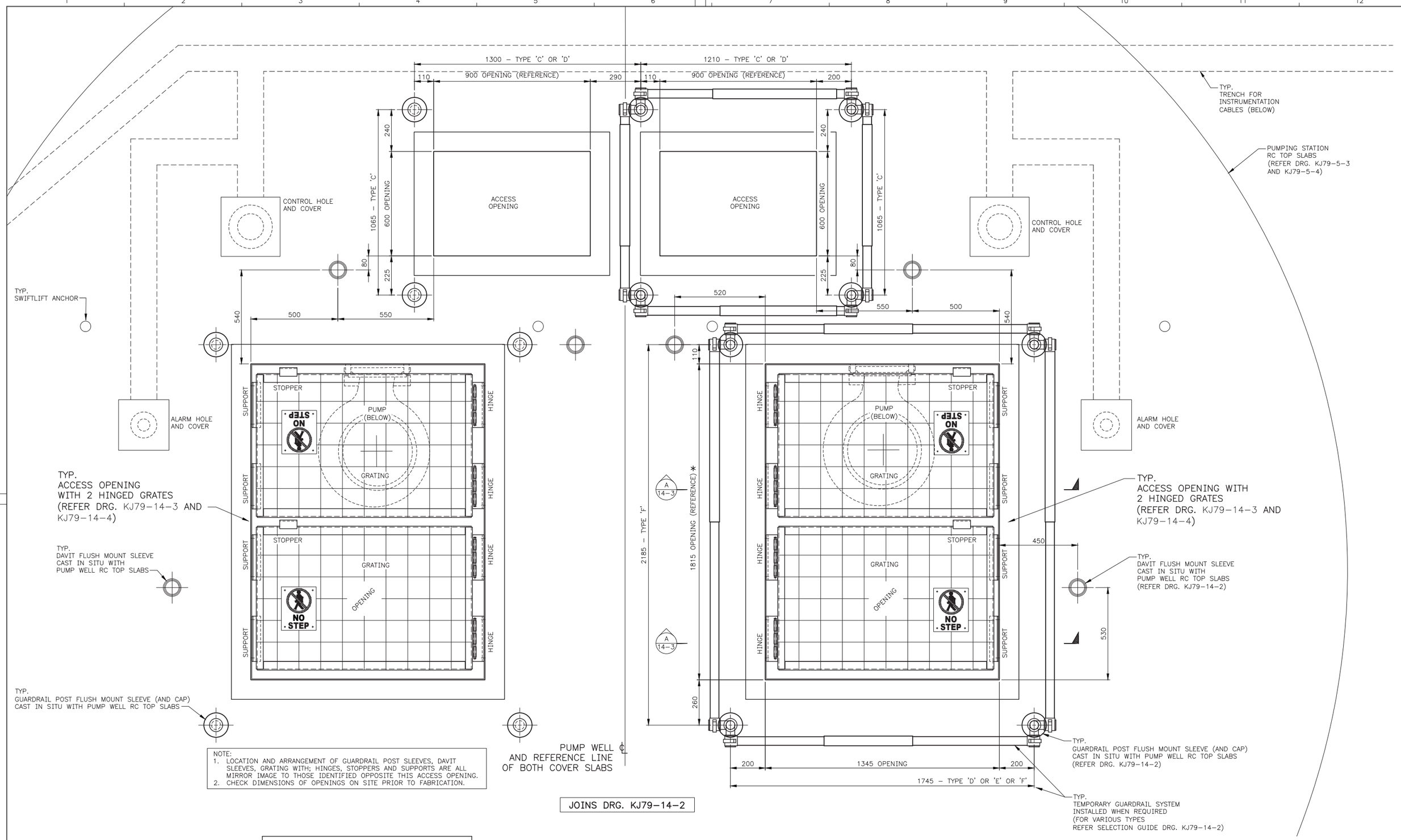
THIS DRAWING IS DERIVED FROM CA01–20–15F

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM
ULTRASONIC SUPPORT AND LANYARD DETAILS

ORIGINAL SHEET SIZE A1

FILE PROJECT C–S01648 | PLAN KJ79–13–1 | CAD | ISSUE A2 | MF

566
810



NOTE:
1. LOCATION AND ARRANGEMENT OF GUARDRAIL POST SLEEVES, DAVIT SLEEVES, GRATING WITH; HINGES, STOPPERS AND SUPPORTS ARE ALL MIRROR IMAGE TO THOSE IDENTIFIED OPPOSITE THIS ACCESS OPENING.
2. CHECK DIMENSIONS OF OPENINGS ON SITE PRIOR TO FABRICATION.

JOINS DRG. KJ79–14–2

PART PLAN
(OVER WET WELL OF PUMPING STATION)

NOTE:
1. FOR LOCATION OF ACCESS OPENINGS REFER DRG. KJ79–5–3.
2. PERSONNEL ACCESS COVERS NOT SHOWN.

GENERAL NOTES:
1. FOR DETAILED NOTES REFER DRG KJ79–14–2.

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

A2	22.10.20	ISSUED FOR CLIENT REVIEW
A1	20.10.20	ISSUED FOR SQUAD CHECK
DATE		DESCRIPTION

REFERENCE DRAWINGS

KJ79–5–3	PUMPING STATION – TOP SLABS CONCRETE PLAN AND DETAILS
KJ79–5–4	PUMPING STATION – TOP SLABS REINFORCEMENT PLAN AND DETAILS
KJ79–14–2	PUMPING STATION – PREVENTION OF FALLS (SHEET 2 OF 4) – PART 2 OF 2
KJ79–14–3	PUMPING STATION – PREVENTION OF FALLS (SHEET 3 OF 4)
KJ79–14–4	PUMPING STATION – PREVENTION OF FALLS (SHEET 4 OF 4) – GRATING

(1) 100 50 0 100 200 300 400 500 600 700 mm (1:10 AT A1)

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM NONE	DES CALC J. LU
	COORDINATE SYS MGA94–50	DES CHD R. FOURIE
ASCON SURVEY NONE	DES REF IW200060	DRN J. LU
		Q.C. CHD C.CARNEVALI

NORTH POINT

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM PUMPING STATION
PREVENTION OF FALLS (SHEET 1 OF 4) – PART 1 OF 2

FILE	PLAN	CAD	ISSUE
PROJECT C–S01648	KJ79–14–4		A2

ORIGINAL SHEET SIZE A1

MF

566
810

JOINS DRG. KJ79–14–1

℄ PUMP WELL AND REFERENCE LINE OF BOTH COVER SLABS

PENSTOCK SPINDLE HOLE AND COVER

PENSTOCK SPINDLE HOLE AND COVER

TYP. SWIFTLIFT ANCHOR

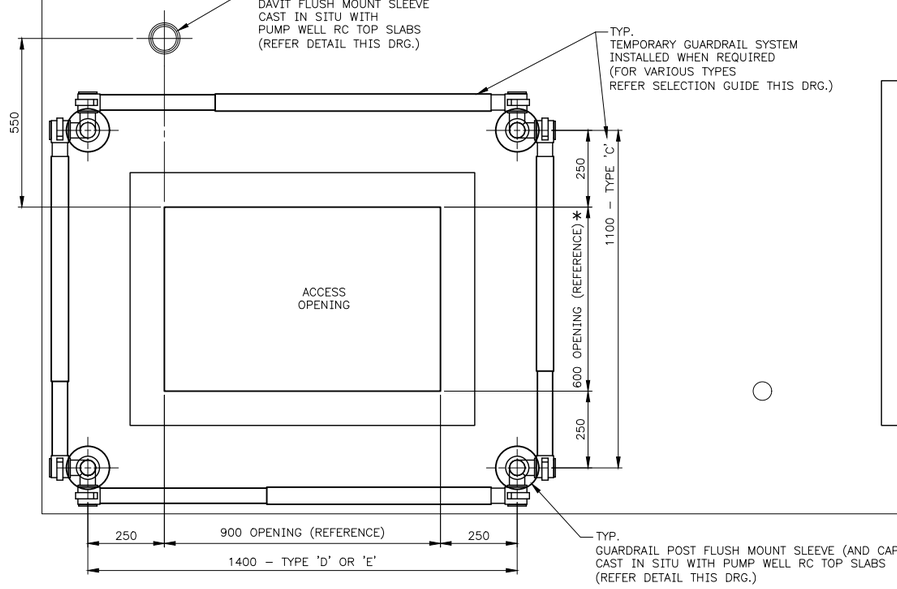
ALARM HOLE AND COVER

PUMPING STATION Y–SPLIT INLET ACCESS CHAMBER RC TOP SLAB (REFER DRG. KJ79–5–3 AND KJ79–5–4)

PVC CONDUIT FOR ELECTRICAL (BELOW)

TYP. DAVIT FLUSH MOUNT SLEEVE CAST IN SITU WITH PUMP WELL RC TOP SLABS (REFER DETAIL THIS DRG.)

TYP. TEMPORARY GUARDRAIL SYSTEM INSTALLED WHEN REQUIRED (FOR VARIOUS TYPES REFER SELECTION GUIDE THIS DRG.)



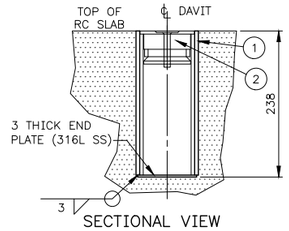
TYP. GUARDRAIL POST FLUSH MOUNT SLEEVE (AND CAP) CAST IN SITU WITH PUMP WELL RC TOP SLABS (REFER DETAIL THIS DRG.)

EMERGENCY BYPASS OPENING

PART PLAN
(OVER Y–SPLIT INLET ACCESS CHAMBER OF PUMPING STATION)

SCALE (1)

NOTE:
1. PERSONNEL ACCESS COVERS NOT SHOWN.

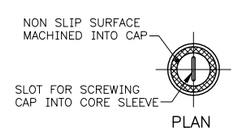


SECTIONAL VIEW
TYPICAL DETAIL OF DAVIT FLUSH MOUNT SLEEVE
SCALE (2)

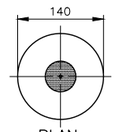
NOTE:
1. REINFORCEMENT TO BE ADUSTED LOCALLY TO CLEAR FLUSH MOUNT SLEEVE (DO NOT CUT REINFORCEMENT).

DAVIT MOUNT COMPONENTS

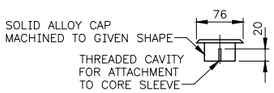
MARK	DESCRIPTION	PART No.	DETAILS/MATERIAL	QTY	MMR
1	STAINLESS STEEL FLUSH MOUNT SLEEVE	N.A.	101.6 x 5.74 CHS (316L SS) 235 LONG. SUPPLY SLEEVE WITH 88.9 x 5.5 CHS PVC PIPE–ASTM–D–1785 LINER	7	21019
2	STAINLESS STEEL SLEEVE CAP	DA WSG WC 804SS	(316L SS)	7	21033
DAVIT MOUNT COMPONENTS PURCHASED THROUGH THE WATER CORPORATION INVENTORY SYSTEM					



PLAN

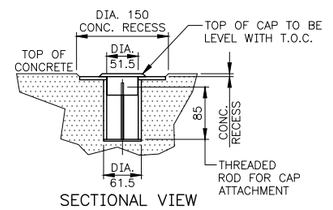


PLAN



SIDE VIEW
CAP FOR GUARDRAIL POST FLUSH MOUNT SLEEVE
(CAP MMR 21046)

SCALE (2)



SECTIONAL VIEW
TYPICAL ARRANGEMENT OF GUARDRAIL POST FLUSH MOUNT SLEEVE WITH CAP
(18 REQUIRED)
(SLEEVE MMR 21034)

SCALE (2)

NOTE:
1. COMPONENTS AVAILABLE FROM 'KENNEDY'S ALUMNIUM' (REFER GENERAL NOTE 10 THIS DRG.).
2. IF NECESSARY REINFORCEMENT TO BE ADUSTED LOCALLY TO CLEAR FLUSH MOUNT SLEEVE (DO NOT CUT REINFORCEMENT)

GENERAL NOTES:

1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS, THE DURABILITY REPORT AND THE SPECIFICATION.
2. MATERIALS AND WORKMANSHIP ARE IN ACCORDANCE WITH THE RELEVANT S.A.A. CODES AND THE BY–LAWS AND ORDINANCES OF RELEVANT AUTHORITIES.
3. ALL TRADES VERIFIED ON SITE LEVELS AND DIMENSIONS BEFORE COMMENCING WORK.
4. DIMENSIONS MARKED * TO BE CHECKED ON SITE PRIOR TO FABRICATION.
5. ALL PROPRIETARY PRODUCTS INSTALLED IN ACCORDANCE WITH MANUFACTURERS' SPECIFICATIONS.
6. DRILLING OR CORING OF CONCRETE NEAR ELECTRICAL CONDUITS SHALL NOT BE PERMITTED.
7. THE DETAILS SHOWN ON THE DRAWINGS ARE BASED ON A MAXIMUM 1219mm AND A MINIMUM 762mm RADIAL MOVEMENT ACHIEVABLE BY THE DAVIT SYSTEM USED.
8. GUARD RAIL SUPPORT POST INSTALLED ACCORDING TO MANUFACTURERS INSTRUCTIONS.
9. HANDRAILS ARE ADJUSTED TO DESIRED LENGTH AND LOCKED INTO PLACE ONTO POST LUGS WITH SPRING LOADED PINS.
10. HANDRAILS, POSTS AND GUARDRAIL POST SLEEVES AVAILABLE FROM "KENNEDY'S ALUMINIUM" 103–109 HOLLOWAY ST, BAIRNSDALE, VICTORIA 3875. TEL: (03) 5152 3633, FAX: (03) 5152 1488.
11. GUARDRAIL TOE

STAINLESS STEEL NOTES:

1. ALL STAINLESS STEELWORK IS GRADE 316L U.N.O.
2. FABRICATOR SITE VERIFY ALL DIMENSIONS AND PROVIDED SHOP DETAIL DRAWINGS.
3. CORRECT ALL MEMBER DISTORTIONS BEFORE AND AFTER WELDING.
4. ALL WELDS DO COMPLY WITH AS 1554.6 TO THE FOLLOWING QUALITY; CATEGORY 2B. SURFACE FINISH IS GRADE II (a) (PICKLING AND PASSIVATION TREATMENT BEFORE GOING INTO SERVICE).
5. PROVIDE ALL CLEATS, BRACKETS, WELDING AND HOLING EVEN IF NOT DETAILED FOR THE COMPLETION OF THE WORK.
6. ALL BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL.

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs
NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A2	22.10.20	ISSUED FOR CLIENT REVIEW
A1	20.10.20	ISSUED FOR SQUAD CHECK

STRAPPING OF GRATING TO GUARDRAIL

THE STAINLESS STEEL GRATING FIXED TO THE TOP RAIL SUPPLIED TEMPORARY GUARDRAIL OR THE WEBFORGE SUPPLIED PERMANENT GUARDRAIL WITH AN APPROVED HEAVY DUTY PULL DOWN / TIE DOWN STRAP (MINIMUM OF 200kg CAPACITY) SUCH AS "LION AUSTRALIA LA149CP" PROVIDED THAT THE FOLLOWING CRITERIA ARE MET.

1 WIND SPEED
1.1 THE GRATES SHALL NOT BE LIFTED WHEN THE WIND SPEED EXCEEDS 20m/s (72km/hr).

2 GUARDRAILS
2.1. THE GUARDRAIL IS CORRECTLY INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS.
2.2. THE LENGTH OF HORIZONTAL GUARDRAIL BETWEEN VERTICAL STANCHIONS OF THE KENNEDY SUPPLIED TEMPORARY GUARDRAIL IS LESS THAN OR EQUAL TO 2.4m, OR THE LENGTH OF HORIZONTAL GUARDRAIL BETWEEN VERTICAL STANCHIONS OF THE WEBFORGE SUPPLIED PERMANENT GUARDRAIL IS LESS THAN OR EQUAL TO 2.0m, AS APPLICABLE.
2.3. THE TOP RAIL, KNEE RAIL, STANCHIONS, SUPPORTING CUPS OR BASEPLATES AND THE FIXING STRAP ARE NOT DAMAGED OR DETERIORATED IN ANY WAY.
2.4. THE FIXING OF THE GRATING TO THE GUARDRAIL IS NOT INTERFERED WITH BY A THIRD PARTY.
2.5. A SINGLE STRAP IS NOT TO BE USED TO FIX MULTIPLE SECTIONS OF GRATING TO THE GUARDRAIL.

3 LIFTING AND STRAPPING OF GRATES
3.1 THE GRATING IS TO BE LIFTED FROM ITS HORIZONTAL POSITION USING THE ALUMINIUM LIFTING TOOL AS DETAILED ON WATER CORPORATION STANDARD DRAWING IP76–1–1A.
3.2. THE STRAP IS TIED SECURELY AS PER THE MANUFACTURER'S INSTRUCTIONS.
3.3. THE GRATING MAY NOT LEAN IN TOWARD THE OPENING AT AN ANGLE MORE THAN 5 DEGREES TO THE VERTICAL WHEN IT IS FIXED TO THE GUARDRAIL.

SELECTION GUIDE FOR TELESCOPIC HANDRAIL TYPES:

TYPE A – 530mm CLOSED – 700mm EXTENDED
TYPE B – 670mm CLOSED – 950mm EXTENDED
TYPE C – 830mm CLOSED – 1315mm EXTENDED
TYPE D – 1190mm CLOSED – 1770mm EXTENDED
TYPE E – 1350mm CLOSED – 2050mm EXTENDED
TYPE F – 1700mm CLOSED – 2400mm EXTENDED

REFERENCE DRAWINGS

KJ79–5–3	PUMPING STATION – TOP SLABS CONCRETE PLAN AND DETAILS
KJ79–5–4	PUMPING STATION – TOP SLABS REINFORCEMENT PLAN AND DETAILS
KJ79–14–1	PUMPING STATION – PREVENTION OF FALLS (SHEET 1 OF 4) – PART 1 OF 2
KJ79–14–3	PUMPING STATION – PREVENTION OF FALLS (SHEET 3 OF 4)
KJ79–14–4	PUMPING STATION – PREVENTION OF FALLS (SHEET 4 OF 4) – GRATING

(2) 100 50 0 100 200 300 mm (1:5 AT A1)

(1) 100 50 0 100 200 300 400 500 600 700 mm (1:10 AT A1)

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE
VERTICAL DATUM AHD
COORDINATE SYS MGA94–50
ASCON SURVEY NONE
DES REF IW200060
DES CALC J. LU
DES CHD R. FOURIE
DRN J. LU
Q.C. CHD C.CARNEVALI

NORTH POINT

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM PUMPING STATION
PREVENTION OF FALLS (SHEET 2 OF 4) – PART 2 OF 2

ORIGINAL SHEET SIZE A1

FILE
PROJECT C–S01648
PLAN KJ79–14–2
CAD
ISSUE A2
MF

566
810

USERS\JLU\APPDATA\LOCAL\PROJECTWISE\JACOBS_ANZ_IE\D0359317\KJ79–014–002 01:23 22/10/2020 JLu/AUPER3LGWSOPH2

JOINS DRG. KJ79–14–1

℄ PUMP WELL AND REFERENCE LINE OF BOTH COVER SLABS

PENSTOCK SPINDLE HOLE AND COVER

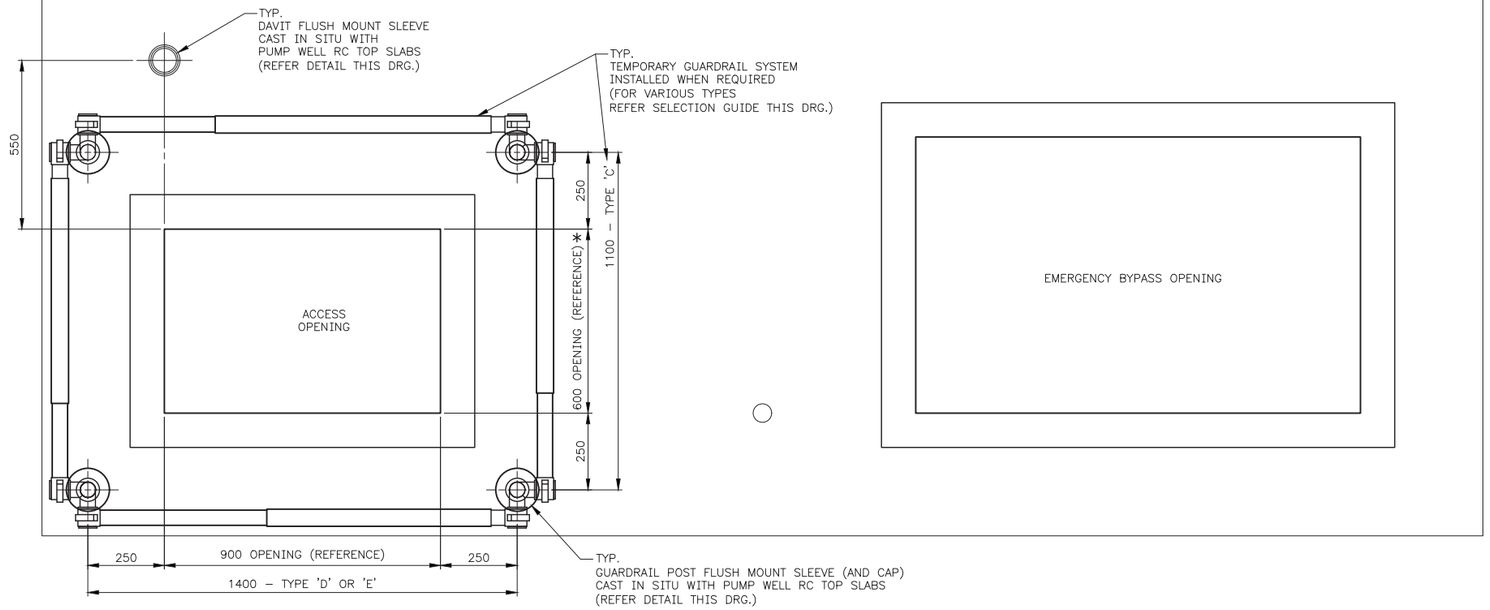
PENSTOCK SPINDLE HOLE AND COVER

TYP. SWIFTLIFT ANCHOR

ALARM HOLE AND COVER

PUMPING STATION Y–SPLIT INLET ACCESS CHAMBER RC TOP SLAB (REFER DRG. KJ79–5–3 AND KJ79–5–4)

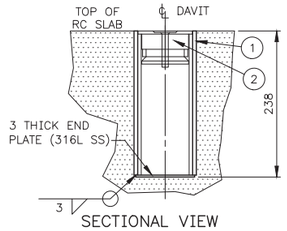
PVC CONDUIT FOR ELECTRICAL (BELOW)



PART PLAN
(OVER Y–SPLIT INLET ACCESS CHAMBER OF PUMPING STATION)

SCALE (1)

NOTE:
1. PERSONNEL ACCESS COVERS NOT SHOWN.

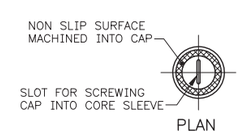


SECTIONAL VIEW
TYPICAL DETAIL OF DAVIT FLUSH MOUNT SLEEVE
SCALE (2)

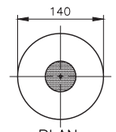
NOTE:
1. REINFORCEMENT TO BE ADUSTED LOCALLY TO CLEAR FLUSH MOUNT SLEEVE (DO NOT CUT REINFORCEMENT).

DAVIT MOUNT COMPONENTS

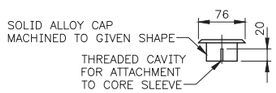
MARK	DESCRIPTION	PART No.	DETAILS/MATERIAL	QTY	MMR
1	STAINLESS STEEL FLUSH MOUNT SLEEVE	N.A.	101.6 x 5.74 CHS (316L SS) 235 LONG. SUPPLY SLEEVE WITH 88.9 x 5.5 CHS PVC PIPE–ASTM–D–1785 LINER	7	21019
2	STAINLESS STEEL SLEEVE CAP	DA WSG WC 804SS	(316L SS)	7	21033
DAVIT MOUNT COMPONENTS PURCHASED THROUGH THE WATER CORPORATION INVENTORY SYSTEM					



PLAN

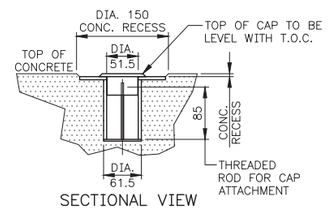


PLAN



SIDE VIEW
CAP FOR GUARDRAIL POST FLUSH MOUNT SLEEVE
(CAP MMR 21046)

SCALE (2)



SECTIONAL VIEW
TYPICAL ARRANGEMENT OF GUARDRAIL POST FLUSH MOUNT SLEEVE WITH CAP
(18 REQUIRED)
(SLEEVE MMR 21034)

SCALE (2)

NOTE:
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11. GUARDRAIL TOE

STAINLESS STEEL NOTES:

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6. ALL BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL.

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A2	22.10.20	ISSUED FOR CLIENT REVIEW
A1	20.10.20	ISSUED FOR SQUAD CHECK

STRAPPING OF GRATING TO GUARDRAIL

THE STAINLESS STEEL GRATING FIXED TO THE TOP RAIL SUPPLIED TEMPORARY GUARDRAIL OR THE WEBFORGE SUPPLIED PERMANENT GUARDRAIL WITH AN APPROVED HEAVY DUTY PULL DOWN / TIE DOWN STRAP (MINIMUM OF 200kg CAPACITY) SUCH AS "LION AUSTRALIA LA149CP" PROVIDED THAT THE FOLLOWING CRITERIA ARE MET.

1 WIND SPEED
1.1 THE GRATES SHALL NOT BE LIFTED WHEN THE WIND SPEED EXCEEDS 20m/s (72km/hr).

2 GUARDRAILS
2.1. THE GUARDRAIL IS CORRECTLY INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS.
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3.2. THE STRAP IS TIED SECURELY AS PER THE MANUFACTURER'S INSTRUCTIONS.
3.3. THE GRATING MAY NOT LEAN IN TOWARD THE OPENING AT AN ANGLE MORE THAN 5 DEGREES TO THE VERTICAL WHEN IT IS FIXED TO THE GUARDRAIL.

SELECTION GUIDE FOR TELESCOPIC HANDRAIL TYPES:

TYPE A – 530mm CLOSED – 700mm EXTENDED
TYPE B – 670mm CLOSED – 950mm EXTENDED
TYPE C – 830mm CLOSED – 1315mm EXTENDED
TYPE D – 1190mm CLOSED – 1770mm EXTENDED
TYPE E – 1350mm CLOSED – 2050mm EXTENDED
TYPE F – 1700mm CLOSED – 2400mm EXTENDED

REFERENCE DRAWINGS

KJ79–5–3	PUMPING STATION – TOP SLABS CONCRETE PLAN AND DETAILS
KJ79–5–4	PUMPING STATION – TOP SLABS REINFORCEMENT PLAN AND DETAILS
KJ79–14–1	PUMPING STATION – PREVENTION OF FALLS (SHEET 1 OF 4) – PART 1 OF 2
KJ79–14–3	PUMPING STATION – PREVENTION OF FALLS (SHEET 3 OF 4)
KJ79–14–4	PUMPING STATION – PREVENTION OF FALLS (SHEET 4 OF 4) – GRATING

(2) 100 50 0 100 200 300 mm (1:5 AT A1)

(1) 100 50 0 100 200 300 400 500 600 700 mm (1:10 AT A1)

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE | VERTICAL DATUM AHD | COORDINATE SYS MGA94–50 | ASCON SURVEY NONE | DES REF IW200060 | DES CALC J. LU | DES CHD R. FOURIE | DRN J. LU | Q.C. CHD C.CARNEVALI

NORTH POINT

Jacobs

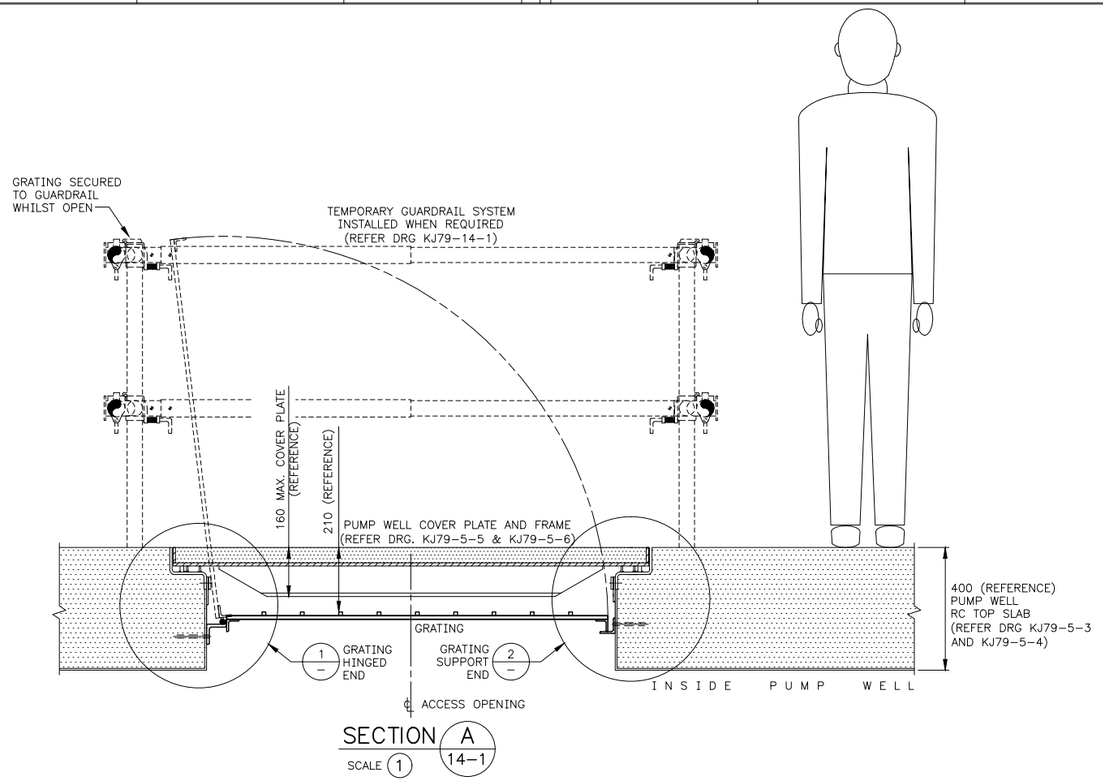
RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM PUMPING STATION
PREVENTION OF FALLS (SHEET 2 OF 4) – PART 2 OF 2

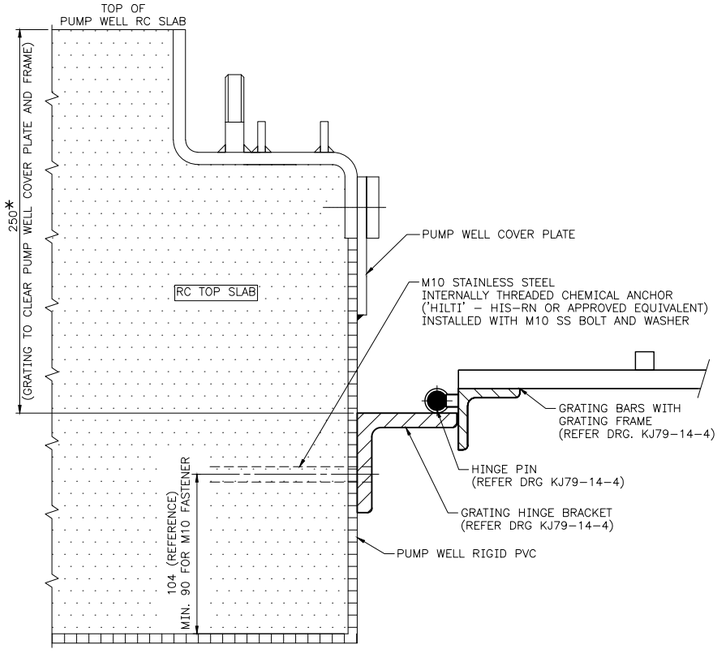
FILE
PROJECT C–S01648
PLAN KJ79–14–2
CAD
ISSUE A2
ORIGINAL SHEET SIZE A1
MF

566
810



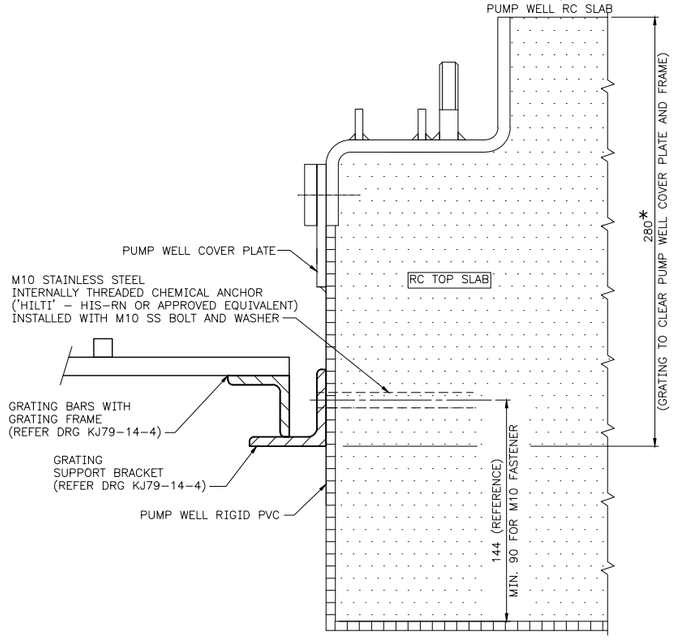
SECTION A 14-1
SCALE 1

NOTE:
1. GUARDRAIL TOE BOARDS NOT SHOWN.



DETAIL 1 – TYPICAL GRATING HINGE BRACKET TO PUMP WELL OPENING
SCALE 2

NOTE:
1. PUMP WELL COVER PLATE NOT SHOWN.



DETAIL 2 – TYPICAL GRATING SUPPORT BRACKET TO PUMP WELL OPENING
SCALE 2

NOTE:
1. PUMP WELL COVER PLATE NOT SHOWN.

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A2	22.10.20	ISSUED FOR CLIENT REVIEW
A1	20.10.20	ISSUED FOR SQUAD CHECK

GENERAL NOTES:
1. FOR DETAILED NOTES REFER DRG. KJ752-1144-22.
2. * = CHECK ON SITE PRIOR TO FABRICATION.

REFERENCE DRAWINGS

KJ79-5-3	PUMPING STATION – TOP SLABS CONCRETE PLAN AND DETAILS
KJ79-5-4	PUMPING STATION – TOP SLABS REINFORCEMENT PLAN AND DETAILS
KJ79-5-5	PUMPING STATION – COVER PLATE AND FRAME DETAILS – SHEET 1 OF 2
KJ79-5-6	PUMPING STATION – COVER PLATE AND FRAME DETAILS – SHEET 2 OF 2
KJ79-14-1	PUMPING STATION – PREVENTION OF FALLS (SHEET 1 OF 4) – PART 1 OF 2
KJ79-14-2	PUMPING STATION – PREVENTION OF FALLS (SHEET 2 OF 4) – PART 2 OF 2
KJ79-14-4	PUMPING STATION – PREVENTION OF FALLS (SHEET 4 OF 4) – GRATING

2 50 40 30 20 10 0 50 100 mm (1:2 AT A1)

1 100 50 0 100 200 300 400 500 600 700 mm (1:10 AT A1)

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM NONE	DES CALC J. LU	NORTH POINT
	COORDINATE SYS NONE	DES CHD R. FOURIE	
ASCON SURVEY NONE	DES REF IW200060	DRN J. LU	
		Q.C. CHD C. CARNEVALI	

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700-35- STILLWATER DR & PM PUMPING STATION
PREVENTION OF FALLS (SHEET 3 OF 4)

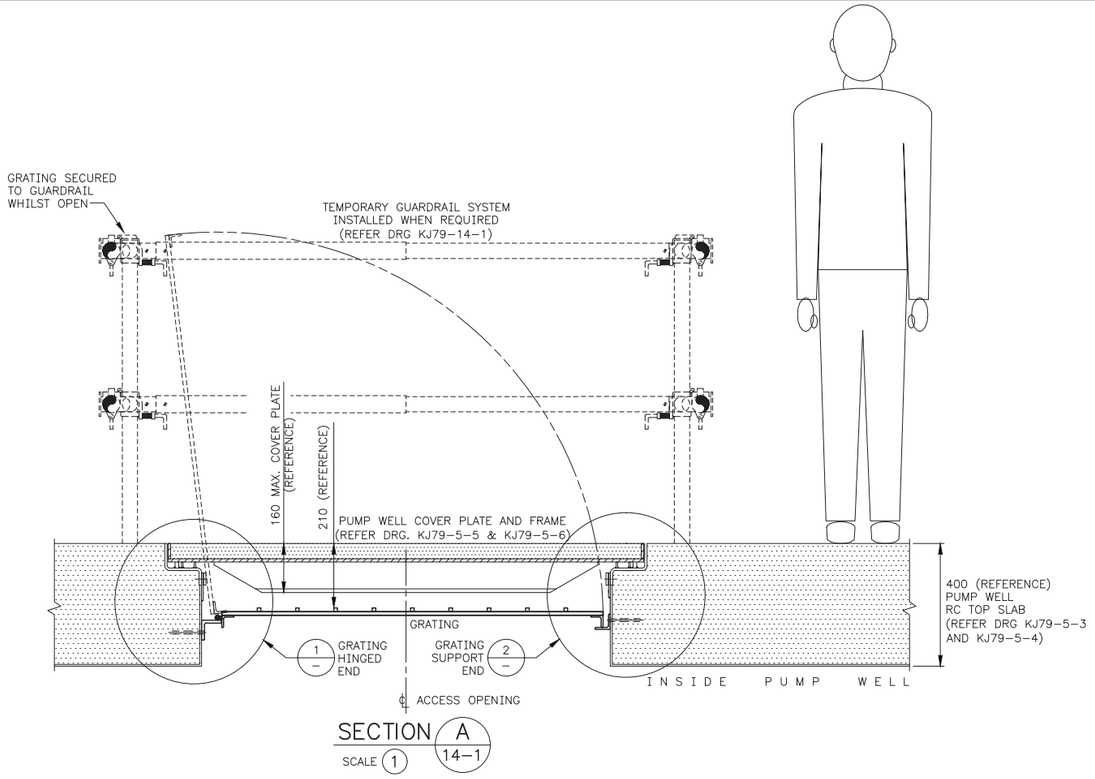
FILE	PLAN	CAD	ISSUE
PROJECT C-S01648	KJ79-14-3		A2

ORIGINAL SHEET SIZE A1

MF

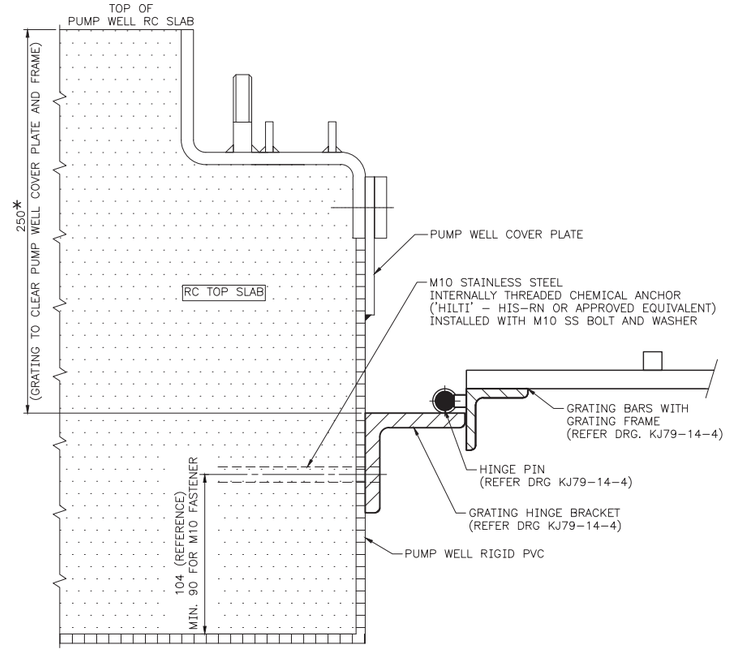
566
810

USERS\JLU\APPDATA\LOCAL\PROJECTWISE\JACOBS_ANZ_IE\D0359317\KJ79-014-003 01:23 22/10/2020 JLu/AUPER3LGWSOPH2



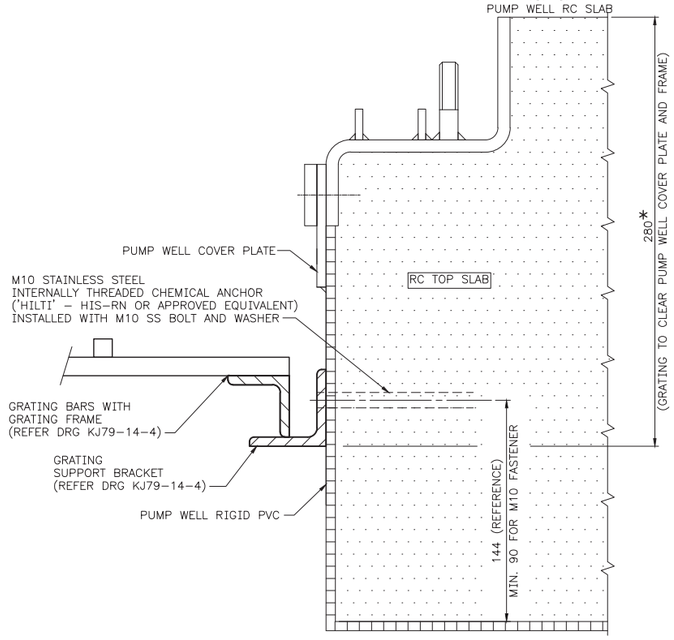
SECTION A 14-1
SCALE 1

NOTE:
1. GUARDRAIL TOE BOARDS NOT SHOWN.



DETAIL 1 – TYPICAL GRATING HINGE BRACKET TO PUMP WELL OPENING
SCALE 2

NOTE:
1. PUMP WELL COVER PLATE NOT SHOWN.



DETAIL 2 – TYPICAL GRATING SUPPORT BRACKET TO PUMP WELL OPENING
SCALE 2

NOTE:
1. PUMP WELL COVER PLATE NOT SHOWN.

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A2	22.10.20	ISSUED FOR CLIENT REVIEW
A1	20.10.20	ISSUED FOR SQUAD CHECK

GENERAL NOTES:
1. FOR DETAILED NOTES REFER DRG. KJ752-1144-22.
2. * = CHECK ON SITE PRIOR TO FABRICATION.

REFERENCE DRAWINGS

KJ79-5-3	PUMPING STATION – TOP SLABS CONCRETE PLAN AND DETAILS
KJ79-5-4	PUMPING STATION – TOP SLABS REINFORCEMENT PLAN AND DETAILS
KJ79-5-5	PUMPING STATION – COVER PLATE AND FRAME DETAILS – SHEET 1 OF 2
KJ79-5-6	PUMPING STATION – COVER PLATE AND FRAME DETAILS – SHEET 2 OF 2
KJ79-14-1	PUMPING STATION – PREVENTION OF FALLS (SHEET 1 OF 4) – PART 1 OF 2
KJ79-14-2	PUMPING STATION – PREVENTION OF FALLS (SHEET 2 OF 4) – PART 2 OF 2
KJ79-14-4	PUMPING STATION – PREVENTION OF FALLS (SHEET 4 OF 4) – GRATING

2 50 40 30 20 10 0 50 100 mm (1:2 AT A1)

1 100 50 0 100 200 300 400 500 600 700 mm (1:10 AT A1)

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM NONE	DES CALC J. LU	NORTH POINT
	COORDINATE SYS NONE	DES CHD R. FOURIE	
ASCON SURVEY NONE	DES REF IW200060	DRN J. LU	
		Q.C. CHD C. CARNEVALI	

Jacobs

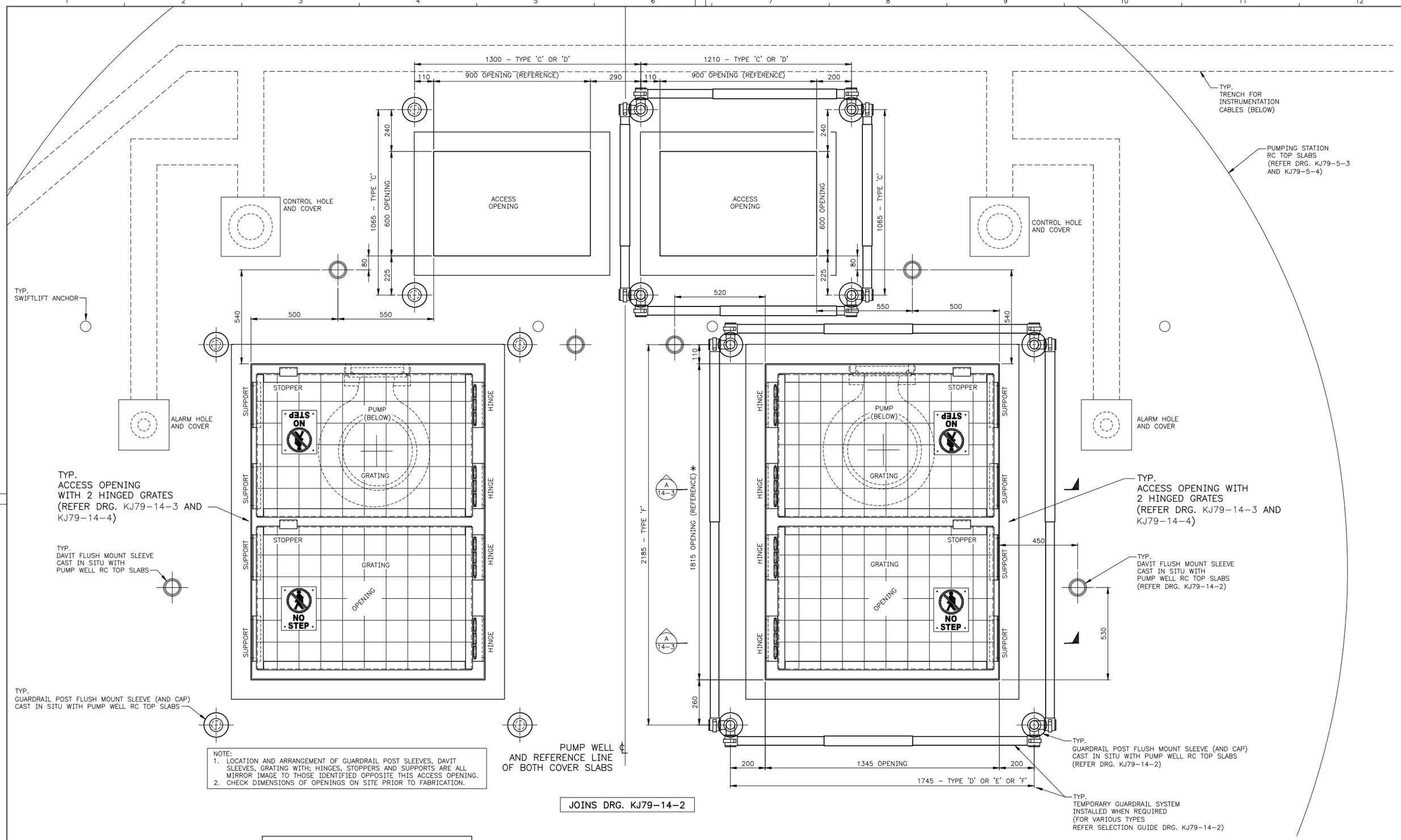
RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700-35- STILLWATER DR & PM
PUMPING STATION
PREVENTION OF FALLS (SHEET 3 OF 4)

FILE	PLAN	CAD	ISSUE	ORIGINAL SHEET SIZE
PROJECT C-S01648	KJ79-14-3		A2	A1
			MF	

566
810



NOTE:
1. LOCATION AND ARRANGEMENT OF GUARDRAIL POST SLEEVES, DAVIT SLEEVES, GRATING WITH; HINGES, STOPPERS AND SUPPORTS ARE ALL MIRROR IMAGE TO THOSE IDENTIFIED OPPOSITE THIS ACCESS OPENING.
2. CHECK DIMENSIONS OF OPENINGS ON SITE PRIOR TO FABRICATION.

JOINS DRG. KJ79–14–2

PART PLAN
(OVER WET WELL OF PUMPING STATION)

NOTE:
1. FOR LOCATION OF ACCESS OPENINGS REFER DRG. KJ79–5–3.
2. PERSONNEL ACCESS COVERS NOT SHOWN.

GENERAL NOTES:
1. FOR DETAILED NOTES REFER DRG KJ79–14–2.

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

	DATE	DESCRIPTION
A2	22.10.20	ISSUED FOR CLIENT REVIEW
A1	20.10.20	ISSUED FOR SQUAD CHECK

REFERENCE DRAWINGS

KJ79–5–3	PUMPING STATION – TOP SLABS CONCRETE PLAN AND DETAILS
KJ79–5–4	PUMPING STATION – TOP SLABS REINFORCEMENT PLAN AND DETAILS
KJ79–14–2	PUMPING STATION – PREVENTION OF FALLS (SHEET 2 OF 4) – PART 2 OF 2
KJ79–14–3	PUMPING STATION – PREVENTION OF FALLS (SHEET 3 OF 4)
KJ79–14–4	PUMPING STATION – PREVENTION OF FALLS (SHEET 4 OF 4) – GRATING

(1) 100 50 0 100 200 300 400 500 600 700 mm (1:10 AT A1)

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM NONE	DES CALC J. LU
	COORDINATE SYS MGA94–50	DES CHD R. FOURIE
ASCON SURVEY NONE	DES REF IW200060	DRN J. LU
		Q.C. CHD C.CARNEVALI

NORTH POINT

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM PUMPING STATION
PREVENTION OF FALLS (SHEET 1 OF 4) – PART 1 OF 2

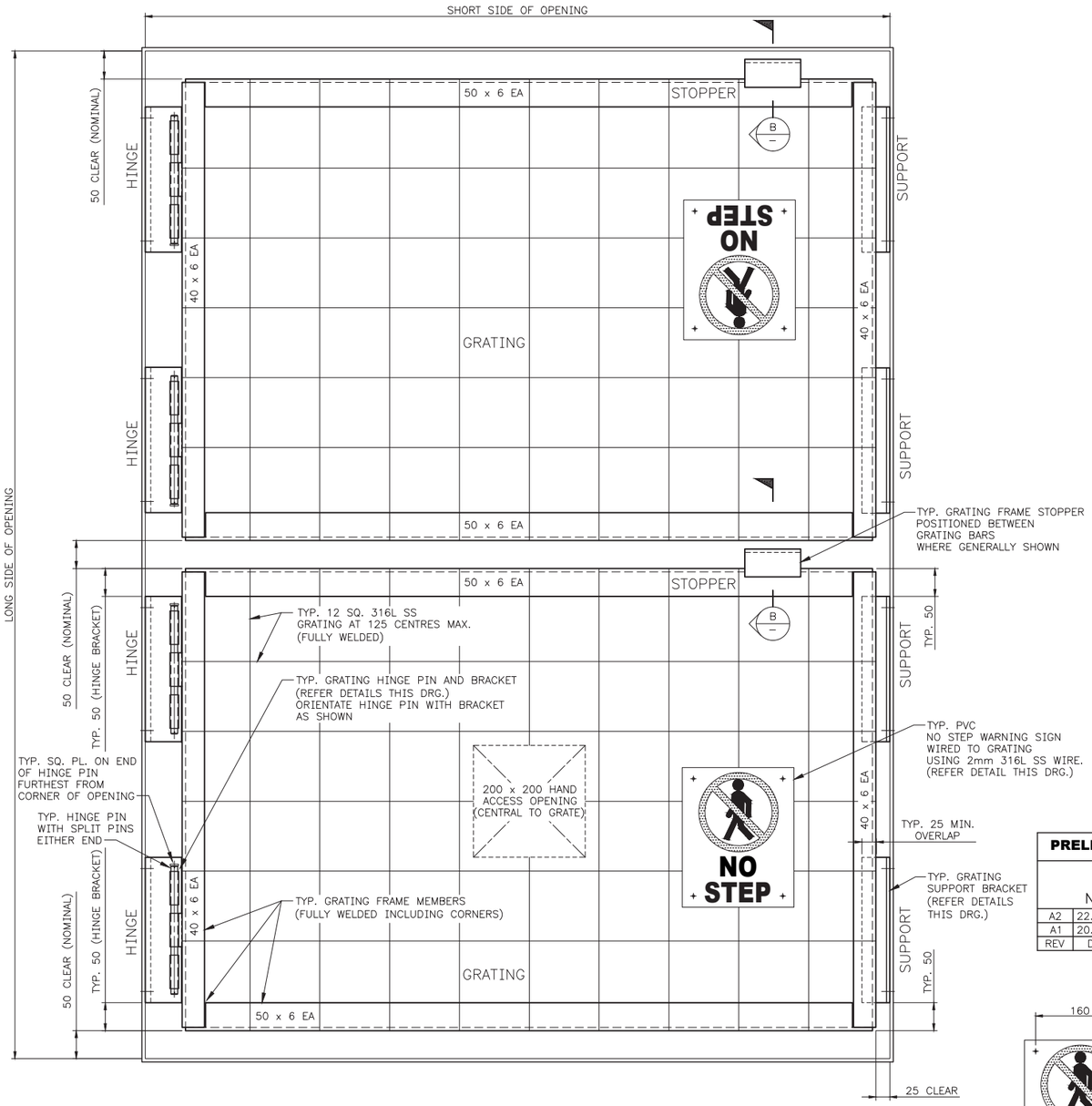
FILE PROJECT C–S01648 | PLAN KJ79–14–4 | CAD | ISSUE A2

ORIGINAL SHEET SIZE A1

MF

566
810

USERS\JLU\APPDATA\LOCAL\PROJECTWISE\JACOBS_ANZ_IE\D0359317\KJ79–014–001 01:24 22/10/2020 JLu/AUPER3LGWSOPH2



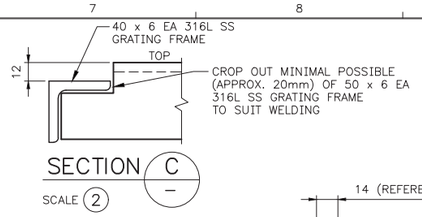
PLAN

TYPICAL STAINLESS STEEL HINGED GRATING ASSEMBLEY FOR 1815 x 1345 OPENING

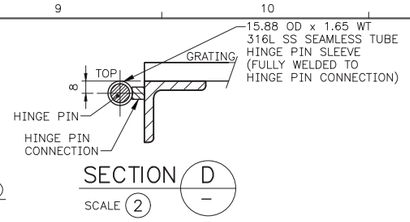
SCALE (1)

(2 HINGED GRATING ASSEMBLIES REQUIRED AS SHOWN – FOR ONE ACCESS OPENING)
AND
(2 HINGED GRATING ASSEMBLIES REQUIRED OPPOSITE HAND – FOR ONE ACCESS OPENING)

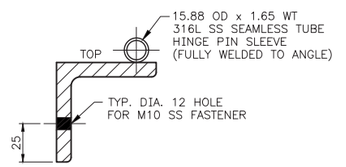
NOTE: ONE (1) OPENING REQUIRED FOR TWO GRATES.



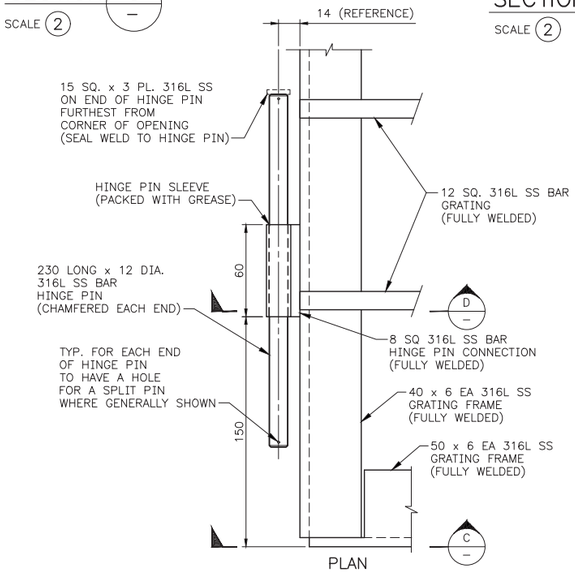
SECTION C
SCALE (2)



SECTION D
SCALE (2)



SECTION E
SCALE (2)

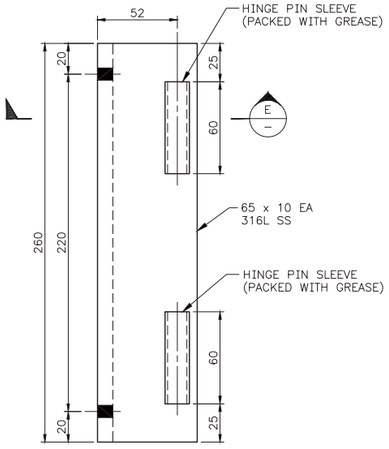


PLAN

TYPICAL GRATING HINGE PIN

SCALE (2)

NOTE:
1. FOR ORIENTATION REFER PLAN THIS DRG.



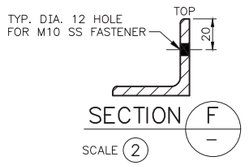
PLAN

TYPICAL GRATING HINGE BRACKET

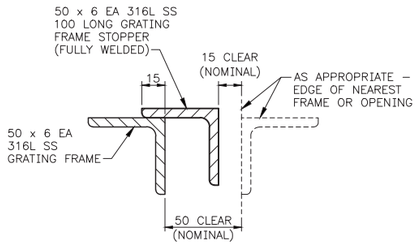
(4 REQUIRED AS SHOWN)
AND
(4 REQUIRED OPPOSITE HAND)

SCALE (2)

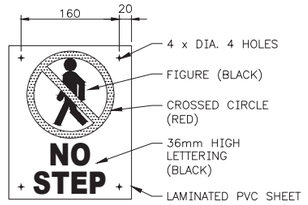
NOTE:
1. FOR ORIENTATION REFER PLAN THIS DRG.



SECTION F
SCALE (2)

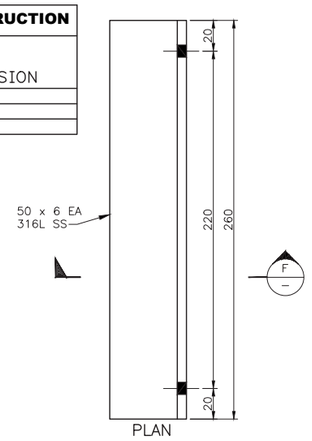


SECTION B – TYPICAL GRATING FRAME STOPPER
SCALE (2)



NO STEP WARNING SIGN

SCALE (2)



PLAN

TYPICAL GRATING SUPPORT BRACKET

(4 REQUIRED AS SHOWN)
AND
(4 REQUIRED OPPOSITE HAND)

SCALE (2) NOTE:
1. FOR ORIENTATION REFER PLAN THIS DRG AND DRG KJ79–14–3.

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs
NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A2	22.10.20	ISSUED FOR CLIENT REVIEW
A1	20.10.20	ISSUED FOR SQUAD CHECK

GENERAL NOTE:
1. FOR DETAILED NOTES REFER DRG KJ79–14–2.

REFERENCE DRAWINGS

KJ79–14–1	PUMPING STATION – PREVENTION OF FALLS (SHEET 1 OF 4) – PART 1 OF 2
KJ79–14–2	PUMPING STATION – PREVENTION OF FALLS (SHEET 2 OF 4) – PART 2 OF 2
KJ79–14–3	PUMPING STATION – PREVENTION OF FALLS (SHEET 3 OF 4)

(2) 50 40 30 20 10 0 50 100 mm (1:2 AT A1)

(1) 100 50 0 100 200 300 mm (1:5 AT A1)

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM NONE	DES CALC J. LU
	COORDINATE SYS NONE	DES CHD R. FOURIE
ASCON SURVEY NONE	DES REF IW200060	DRN J. LU
		Q.C. CHD C. CARNEVALI

NORTH POINT

Jacobs

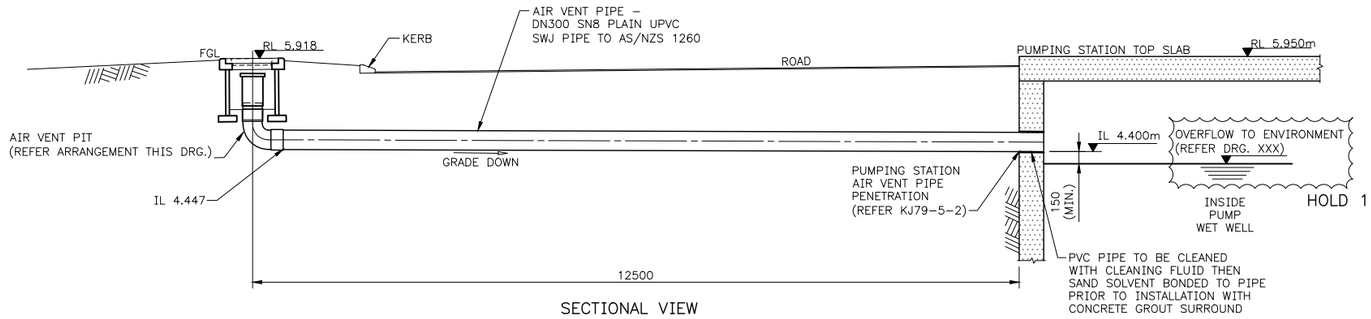
RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

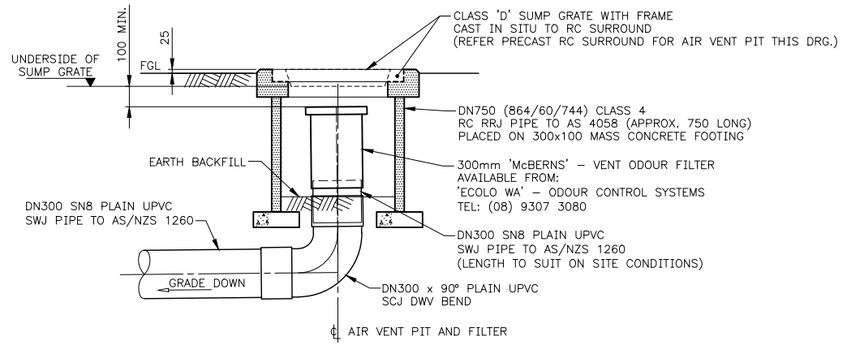
METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM PUMPING STATION
PREVENTION OF FALLS – SHEET 4 OF 4

FILE	PLAN	CAD	ISSUE	ORIGINAL SHEET SIZE
PROJECT C–S01648	KJ79–14–4		A2	A1
				MF

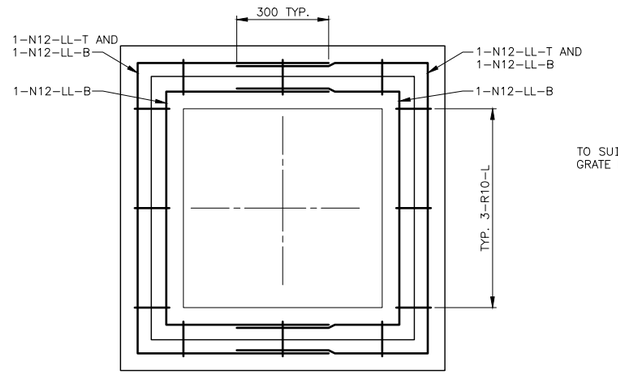
566
810



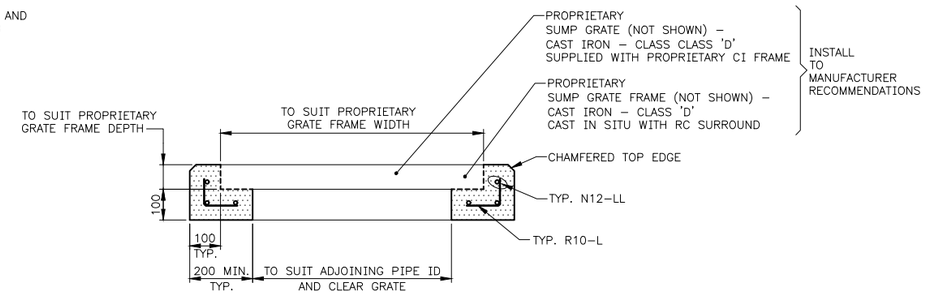
SECTIONAL VIEW
ARRANGEMENT OF AIR VENT PIPE FROM PUMPING STATION
SCALE (1)



SECTIONAL VIEW
TYPICAL ARRANGEMENT OF AIR VENT PIT
SCALE (2)



PLAN



SECTIONAL VIEW

PRECAST RC SURROUND FOR AIR VENT PIT
SCALE (3)

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs
NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A2	22.10.20	ISSUED FOR CLIENT REVIEW
A1	20.10.20	ISSUED FOR SQUAD CHECK

HOLDS
1. OVERFLOW TO ENVIRONMENT TO BE FINALISED AT DETAIL DESIGN.

REFERENCE DRAWINGS
KJ79–3–1	PUMP STATION SITE PLAN
KJ79–3–8	3000m3 EMERGENCY OVERFLOW STORAGE TANK – TANK SECTIONS, ELEVATIONS AND DETAILS
KJ79–5–2	PUMPING STATION – REINFORCEMENT PLAN AND SECTIONS

GENERAL NOTE:
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

(3) 100 50 0 100 200 300 400 500 600 700 mm (1:10 AT A1)
(2) 500 0 500 1000 mm (1:20 AT A1)
(1) 1000 500 0 1000 2000 3000 mm (1:50 AT A1)

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY JACOBS	VERTICAL DATUM AHD	DES CALC J. LU
	COORDINATE SYS MGA94–50	DES CHD R. FOURIE
ASCON SURVEY NONE	DES REF IW200060	DRN J. LU
		Q.C. CHD C.CARNEVALI

NORTH POINT

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

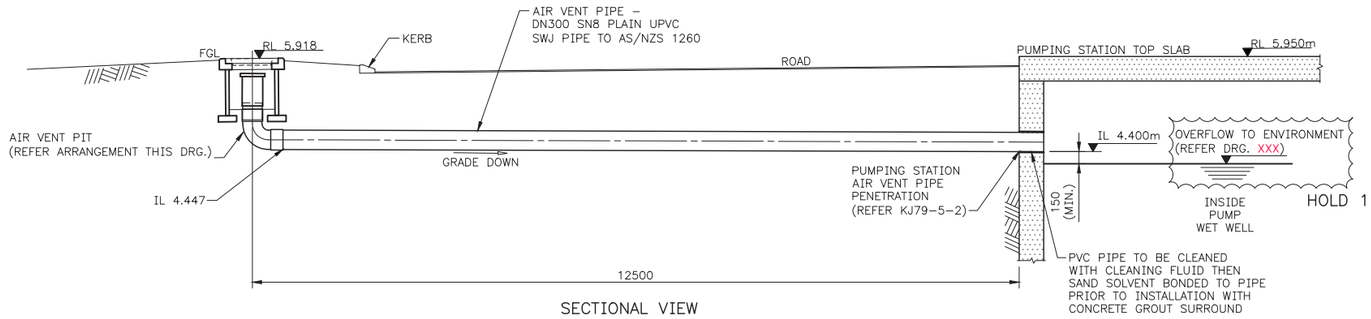
WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM PUMPING STATION
AIR VENTILATION DETAILS

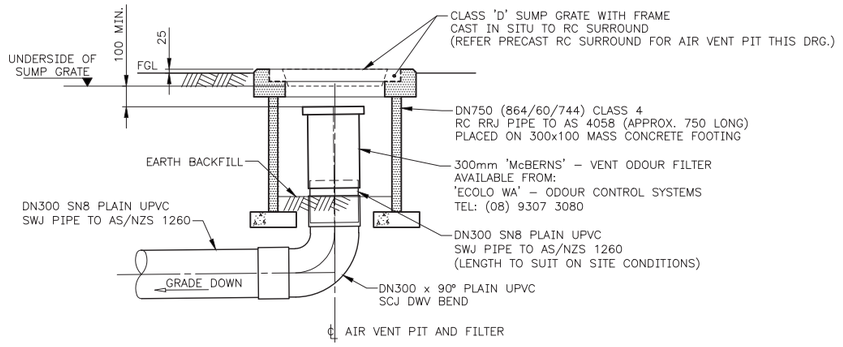
FILE	PLAN	CAD	ISSUE	ORIGINAL SHEET SIZE
PROJECT C–S01648	KJ79–19–1	A2	MF	A1

566
810

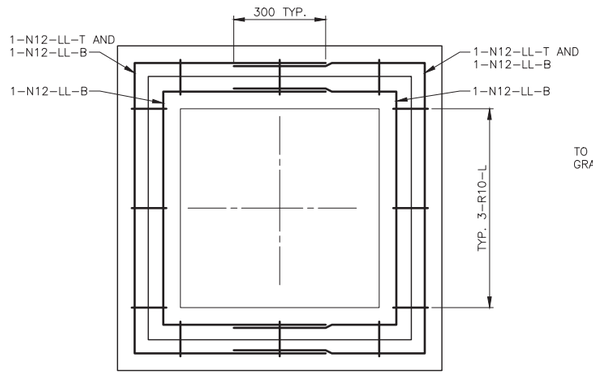
USERS\JLU\APPDATA\LOCAL\PROJECTWISE\JACOBS_ANZ_IE\D0359317\KJ79-019-001 01:22 22/10/2020 JLu/AUPER3LGWSOPH2



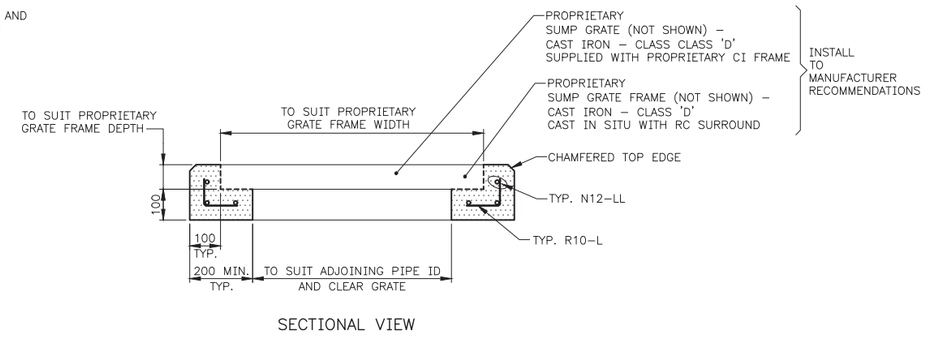
SECTIONAL VIEW
ARRANGEMENT OF AIR VENT PIPE FROM PUMPING STATION
SCALE (1)



SECTIONAL VIEW
TYPICAL ARRANGEMENT OF AIR VENT PIT
SCALE (2)



PLAN



SECTIONAL VIEW

PRECAST RC SURROUND FOR AIR VENT PIT
SCALE (3)

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs
NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A2	22.10.20	ISSUED FOR CLIENT REVIEW
A1	20.10.20	ISSUED FOR SQUAD CHECK

HOLDS
1. OVERFLOW TO ENVIRONMENT TO BE FINALISED AT DETAIL DESIGN.

REFERENCE DRAWINGS
KJ79–3–1	PUMP STATION SITE PLAN
KJ79–3–8	3000m3 EMERGENCY OVERFLOW STORAGE TANK – TANK SECTIONS, ELEVATIONS AND DETAILS
KJ79–5–2	PUMPING STATION – REINFORCEMENT PLAN AND SECTIONS

GENERAL NOTE:
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

(3) 100 50 0 100 200 300 400 500 600 700 mm (1:10 AT A1)
(2) 500 0 500 1000 mm (1:20 AT A1)
(1) 1000 500 0 1000 2000 3000 mm (1:50 AT A1)

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY JACOBS	VERTICAL DATUM AHD	DES CALC J. LU
	COORDINATE SYS MGA94–50	DES CHD R. FOURIE
ASCON SURVEY NONE	DES REF IW200060	DRN J. LU
		Q.C. CHD C.CARNEVALI

NORTH POINT

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APPROVED
CONSULTANT PROJECT DIRECTOR

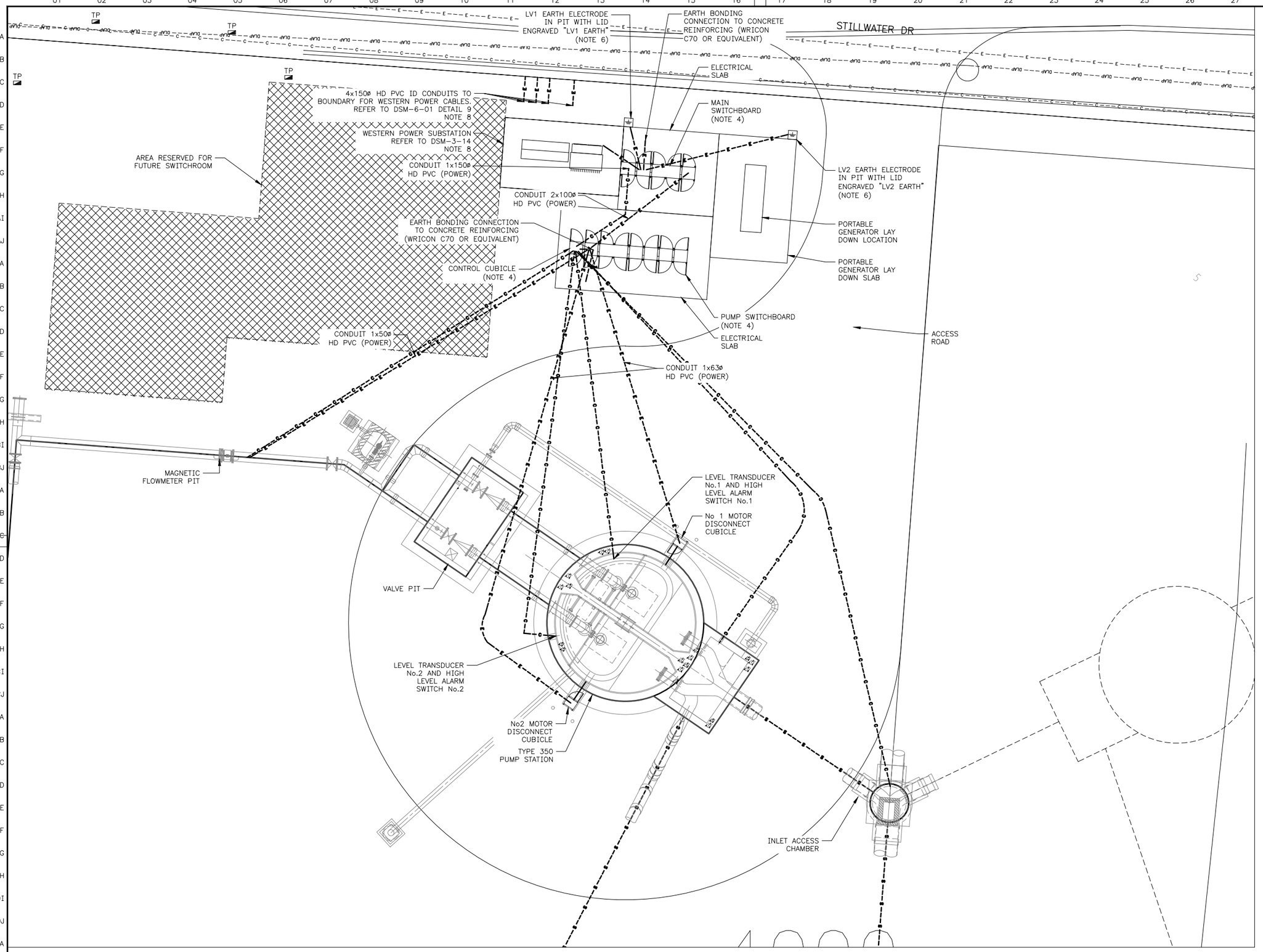
WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM PUMPING STATION
AIR VENTILATION DETAILS

FILE
PROJECT C–S01648
PLAN KJ79–19–1
CAD
ISSUE A2

ORIGINAL SHEET SIZE A1
MF

566
810



PLAN
SCALE (1)

LOCALITY PLAN
SCALE: DIAGRAMMATIC

LEGEND

- NEW UNDERGROUND LV POWER CONDUIT BURIED 500MM BELOW FGL TO TOP 1x32mm DIAMETER ORANGE HD PVC UOI
- NEW UNDERGROUND CONTROLS CONDUIT BURIED 500MM BELOW FGL TO TOP 1x32mm DIAMETER WHITE PVC UOI
- EXISTING UNDERGROUND COMMUNICATIONS SERVICE (LBNCo)
- EXISTING UNDERGROUND LV POWER (WESTERN POWER)
- EXISTING UNDERGROUND COUNCIL DRAIN (CITY OF ROCKINGHAM)
- EARTH ELECTRODE PIT

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. REFER TO MECHANICAL SERVICES DRAWINGS FOR DETAILS OF MECHANICAL WORKS.
3. REFER TO CONTROLS SERVICES DRAWINGS FOR DETAILS OF CONTROL SYSTEM WORKS.
4. CONTRACTOR TO CONFIRM LOCATION OF ALL SERVICES PRIOR TO COMMENCING CONSTRUCTION.
5. FRONT OF SWITCHBOARD (OPERATOR ACCESS) TO FACE PUMP STATION.
6. ALL CONDUITS TO BE LONG SWEEP TYPE.
7. EARTH PITS LV1 AND LV2 TO BE A MINIMUM OF 9M APART.
8. CONTRACTOR TO REFER TO DRAWING MP192668 CUSTOMER SCOPE OF WORK.

ABBREVIATIONS

FGL	FIXED GROUND LEVEL
HV	HIGH VOLTAGE
ID	INTERNAL DIAMETER
LV	LOW VOLTAGE
TX	TRANSFORMER
UOI	UNLESS OTHERWISE INDICATED
WP	WESTERN POWER

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs
NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A4	18.12.20	ISSUED FOR CLIENT REVIEW
A3	09.12.20	ISSUED FOR CLIENT REVIEW

(1) 1 0.5 0 1 2 3 4 5 6 7 m
SCALE 1:100

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY JACOBS	VERTICAL DATUM AHD	DES CALC S. BAUER	NORTH POINT
	COORDINATE SYS MGA94-50	DES CHD D. OLADEJO	
ASCON SURVEY NONE	DES REF IW200060	DRN S. BAUER	
		Q.C. CHD D. OLADEJO	

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

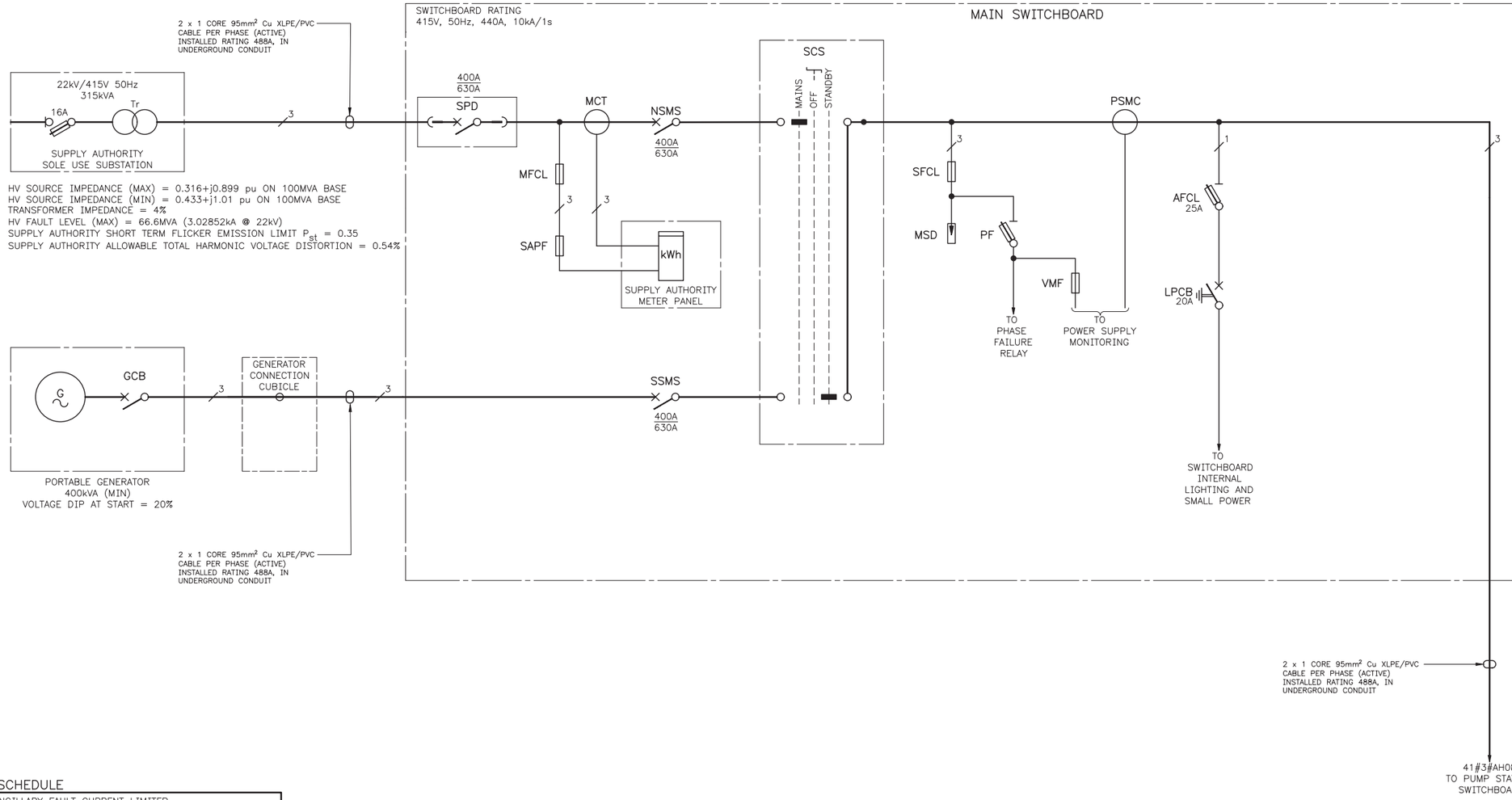
WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700-35- STILLWATER DR & PM
ELECTRICAL PRIMARY DESIGN
SITE PLAN

FILE	PLAN	CAD	ISSUE	ORIGINAL SHEET SIZE
PROJECT C-S01648	KJ79-41-1		A4	A1 MF

566
810

USERS\CHONGV1\APPDATA\LOCAL\PROJECTWISE\JACOBS_ANZ_IE\D0359317\KJ79-041-001 12:5 17/12/2020 CHONGV1/AUADL1L28RZNH2



CODE SCHEDULE

AFCL	ANCILLARY FAULT CURRENT LIMITER
GCB	GENERATOR CIRCUIT BREAKER
kWh	KILOWATT HOUR METER
LPCB	LIGHTING AND POWER OUTLETS CIRCUIT BREAKER
MCT	METERING CURRENT TRANSFORMER
MFCL	METERING FAULT CURRENT LIMITER
MSD	MAINS SURGE DIVERTER
NSMS	NORMAL SUPPLY MAIN SWITCH
PF	POTENTIAL FUSE
PSMC	POWER SUPPLY MONITOR CURRENT TRANSFORMER
SAPF	SUPPLY AUTHORITY POTENTIAL FUSE
SCS	SUPPLY CHANGEOVER SWITCH
SFCL	SURGE DIVERTER FAULT CURRENT LIMITER
SPD	SERVICE PROTECTION DEVICE
SSMS	STANDBY SUPPLY MAIN SWITCH
VMF	VOLTAGE MONITORING FUSE

GENERAL NOTES:

1. CONSTRUCT SWITCHBOARD IN ACCORDANCE WITH THE WATER CORPORATION STANDARD SPECIFICATION DS26.9 FOR GENERAL SWITCHBOARD REQUIREMENTS DS26.11 FOR SWITCHBOARDS RATED >200A TO ⩽ 440A
2. NEUTRAL AND EARTH CONNECTIONS NOT SHOWN

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A4	18.12.20	ISSUED FOR CLIENT REVIEW
A2	09.12.20	ISSUED FOR INTERNAL REVIEW

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY JACOBS	VERTICAL DATUM NONE	DES CALC S. BAUER	NORTH POINT
	COORDINATE SYS NONE	DES CHD D. OLADEJO	
ASCON SURVEY NONE	DES REF IW200060	DRN S. BAUER	
		Q.C. CHD D. OLADEJO	

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700-35- STILLWATER DR & PM
ELECTRICAL PRIMARY DESIGN
MAIN SWITCHBOARD – SINGLE LINE POWER DIAGRAM

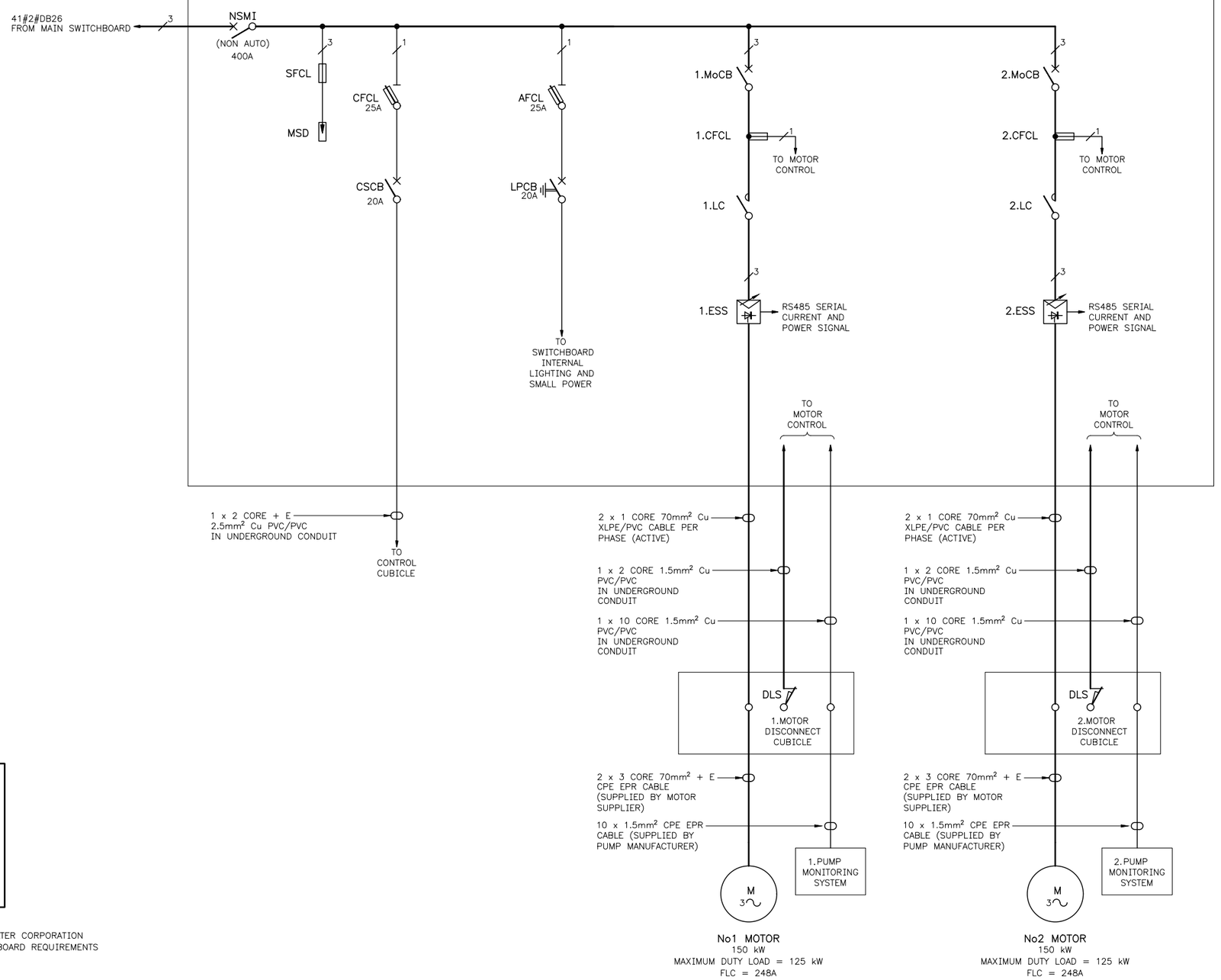
FILE	PLAN	CAD	ISSUE	ORIGINAL SHEET SIZE
PROJECT C-S01648	KJ79-41-2		A4	A1 MF

566
810

USERS\CHONGV1\APPDATA\LOCAL\PROJECTWISE\JACOBS_ANZ_IE\D0359317\KJ79-041-002 12:52 17/12/2020 CHONGV1/AUADL1L28RZNH2

SWITCHBOARD RATING
415V, 50Hz, 440A, 10kA/1s

PUMP STATION SWITCHBOARD



CODE SCHEDULE

AFCL	ANCILLARY FAULT CURRENT LIMITER
CFCL	CONTROL FAULT CURRENT LIMITER
CSCB	CONTROL CUBICLE SUPPLY CIRCUIT BREAKER
DLS	DOOR LIMIT SWITCH
ESpP	EMERGENCY STOP PUSHBUTTON
ESS	ELECTRONIC SOFT STARTER
LC	LINE CONTACTOR
LPCB	LIGHTING AND POWER OUTLETS CIRCUIT BREAKER
MoCB	MOTOR CIRCUIT BREAKER
MSD	MAINS SURGE DIVERTER
NSMI	NORMAL SUPPLY MAIN ISOLATOR
SFCL	SURGE DIVERTER FAULT CURRENT LIMITER

GENERAL NOTES:

1. CONSTRUCT SWITCHBOARD IN ACCORDANCE WITH THE WATER CORPORATION STANDARD SPECIFICATION DS26.9 FOR GENERAL SWITCHBOARD REQUIREMENTS DS26.11 FOR SWITCHBOARDS RATED >200A TO ≤ 440A
2. NEUTRAL AND EARTH CONNECTIONS NOT SHOWN

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A4	18.12.20	ISSUED FOR CLIENT REVIEW
A3	09.12.20	ISSUED FOR INTERNAL REVIEW

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY JACOBS	VERTICAL DATUM NONE	DES CALC V. CHONG	NORTH POINT
	COORDINATE SYS NONE	DES CHD D. OLADEJO	
ASCON SURVEY NONE	DES REF IW200060	DRN V. CHONG	
		Q.C. CHD D. OLADEJO	

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METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700-35- STILLWATER DR & PM
ELECTRICAL PRIMARY DESIGN
PUMP SWITCHBOARD – SINGLE LINE POWER DIAGRAM

ORIGINAL SHEET SIZE A1

FILE	PLAN	CAD	ISSUE
PROJECT C-S01648	KJ79-41-3		A4

MF

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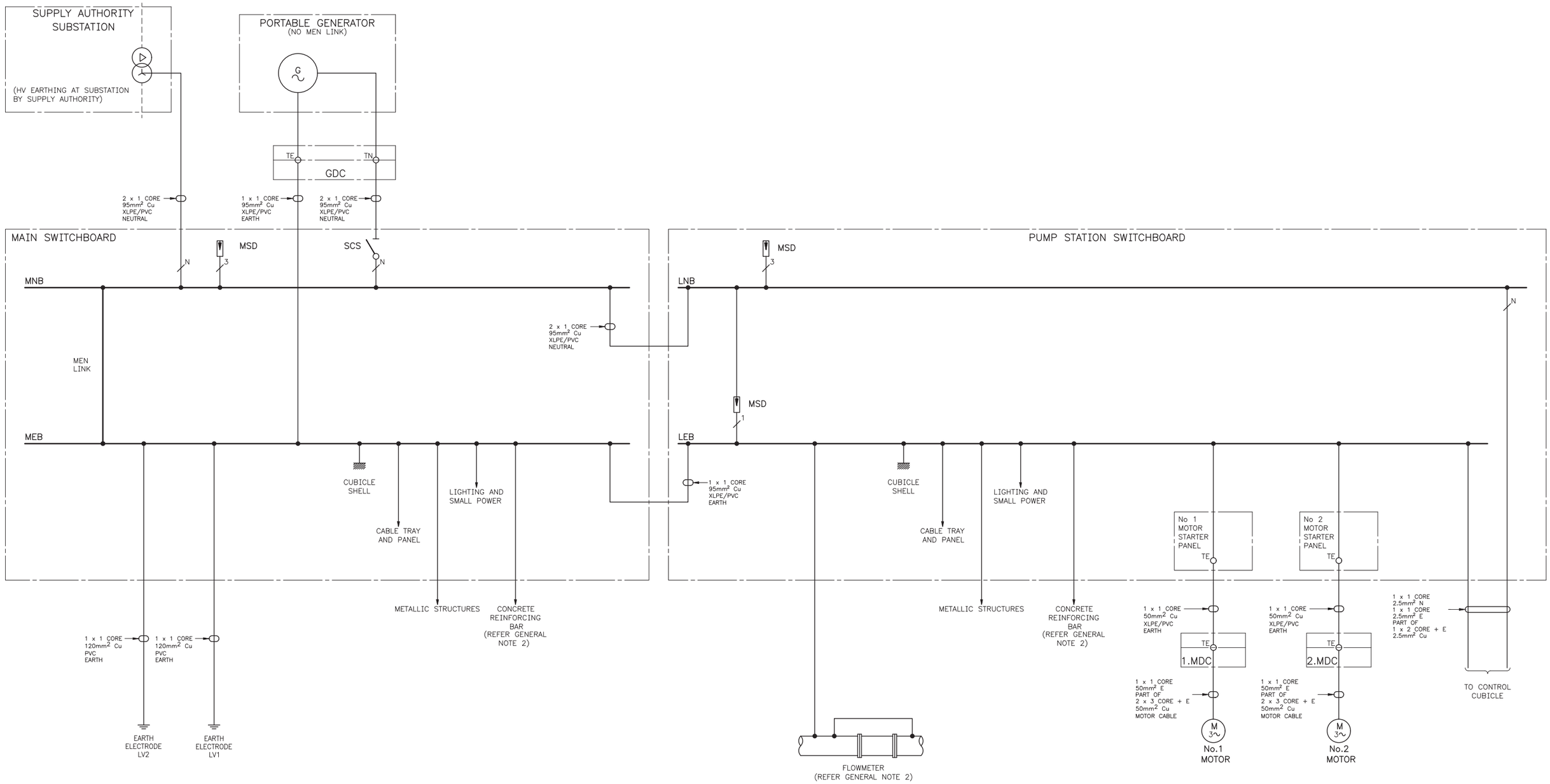
810

USERS\CHONGV1\APPDATA\LOCAL\PROJECTWISE\JACOBS_ANZ_IE\D0359317\KJ79-041-003 15:25 17/12/2020 CHONGV1/AUADL1L28RZNH2



EARTH ELECTRODE DESIGN

1. 2 EARTH ELECTRODES, 12mm DIAMETER SHALL BE INSTALLED 4.5 METRES DEEP AND SPACED A MINIMUM OF 9 METRES APART
2. INDIVIDUAL ELECTRODE RESISTANCE CALCULATED TO BE 26.08 Ω
3. ELECTRODE SYSTEM RESISTANCE CALCULATED TO BE 13.27 Ω

SOIL RESISTIVITY TESTS

PERFORMED BY STUART BAUER, JACOBS, 25/03/2020

DISTANCE (m)	1	2	4	8	20	30	40
RESISTANCE (Ω) – SOUNDING 1	0.154	0.154	0.424	0.298	0.148	0.108	0.068
SOIL RESISTIVITY (Ωm) – SOUNDING 1	0.97	1.94	10.66	14.98	18.60	20.36	17.09
RESISTANCE (Ω) – SOUNDING 2	30.3	9.05	2.81	1.136	0.192	0.136	0.84
SOIL RESISTIVITY (Ωm) – SOUNDING 2	190.38	113.73	70.62	57.10	24.13	25.64	211.12

CODE SCHEDULE

GDC	GENERATOR DISCONNECT CUBICLE
LEB	LOCAL EARTH BAR
LNB	LOCAL NEUTRAL BAR
MDC	MOTOR DISCONNECT CUBICLE
MEB	MAIN EARTH BAR
MNB	MAIN NEUTRAL BAR
MSD	MAINS SURGE DIVERTER
SCS	SUPPLY CHANGEOVER SWITCH
TE	TERMINAL – EARTH
TN	TERMINAL – NEUTRAL

BOND ACROSS ALL VALVES (REFER GENERAL NOTE 2)

PRELIMINARY - NOT FOR CONSTRUCTION

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GENERAL NOTES

1. THE OVERALL EARTHING RESISTANCE OF THE ELECTRICAL EARTHING SYSTEM SHALL BE NOT MORE THAN 15 OHMS
2. UNLESS OTHERWISE SHOWN ALL BONDING CABLES FOR PIPES, METALLIC STRUCTURES, BUILDING FRAME AND CONCRETE REINFORCEMENT SHALL BE 70mm² COPPER

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

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NORTH POINT

Jacobs

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METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM
ELECTRICAL PRIMARY DESIGN
EARTHING DIAGRAM

ORIGINAL SHEET SIZE A1

FILE PROJECT C–S03457 | PLAN KJ79–41–4 | CAD ISSUE A4 | MF

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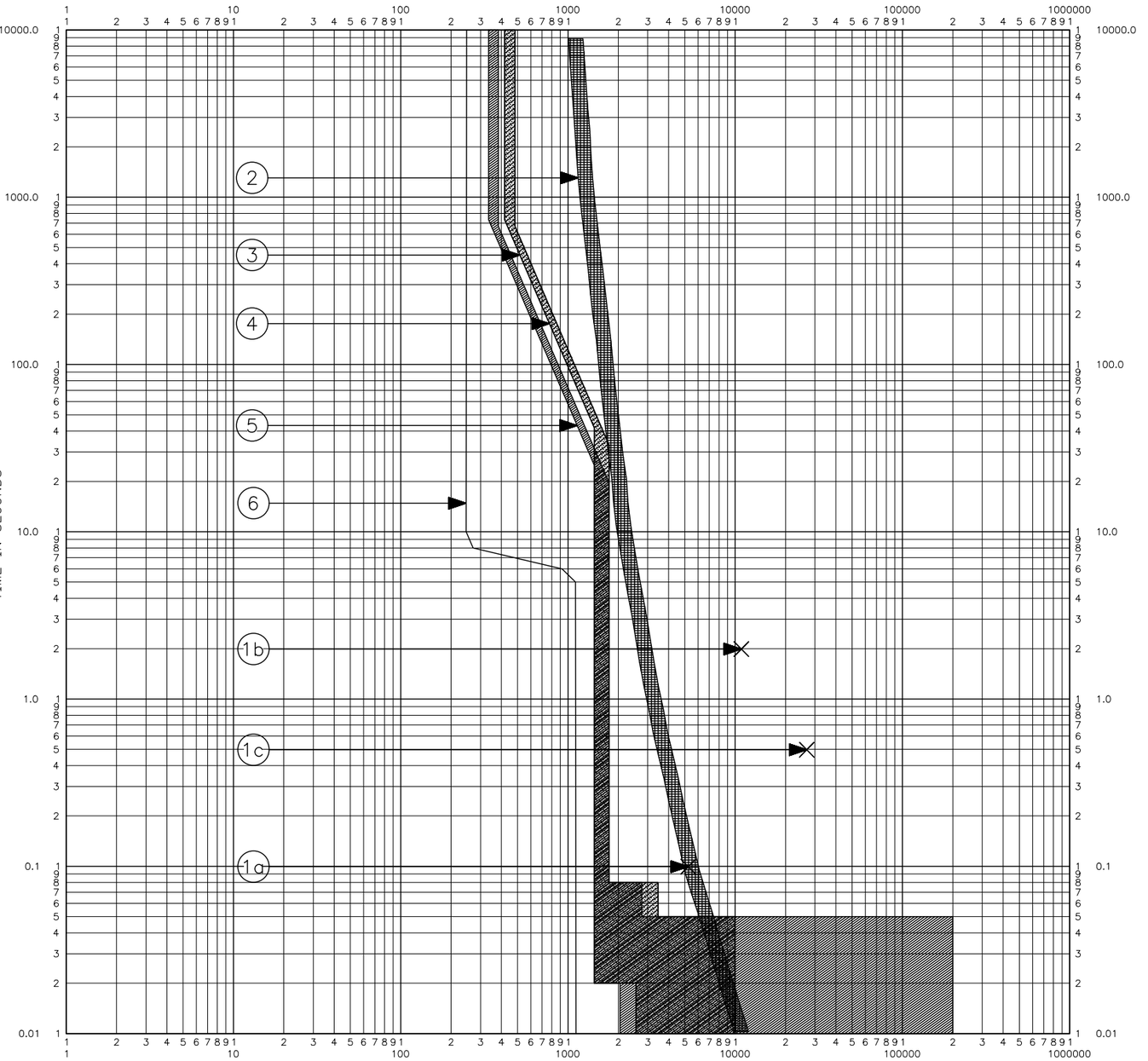
USERS\CHONGV1\APPDATA\LOCAL\PROJECTWISE\JACOBS_ANZ_IE\D0359317\KJ79-041-004 12:52 17/12/2020 CHONGV1/AUADL1L28RZNH2



PROTECTION EQUIPMENT SCHEDULE

CURVE	CODE	SPECIFICATION	PARAMETER	VALUE	UNIT	INPUT	COMMENT
1		TRANSFORMER DAMAGE POINTS PUMP STATION TRANSFORMER 315kVA Z = 4%					
1a		MAGNETISING INRUSH	12 x FLC				
1b		THERMAL DAMAGE	11.23kA AT 415V				
1c		DYNAMIC DAMAGE	27.34kA AT 415V				
2		WESTERN POWER UPSTREAM PROTECTION WESTERN POWER 16A FUSE	16A AT 22kV				
3	SPD	SERVICE PROTECTION DEVICE	In	630	A	–	TRIP UNIT RATING
		SCHNEIDER ELECTRIC, COMPACT NSX630 : 630A, 36kA,	Ir	1.0	x Io	DIAL	
		COMPLETE WITH MICROLOGIC 2, 630A TRIP UNIT	tr	16	s	–	NON ADJUSTABLE
			Isd	4	xIr	DIAL	
			LONG TIME PROTECTION Ir = 630A				
			SHORT TIME PROTECTION Isd = 2520A				
			INSTANTANEOUS CURRENT Ii = 3000A				
4	NSMS	NORMAL AND STANDBY SUPPLY MAIN SWITCHES	In	630	A	–	TRIP UNIT RATING
	SSMS	SCHNEIDER ELECTRIC, COMPACT NSX630 : 630A, 36kA,	Ir	1.0	x Io	DIAL	
		COMPLETE WITH MICROLOGIC 2, 630A TRIP UNIT	tr	16	s	–	NON ADJUSTABLE
			Isd	4	xIr	DIAL	
			LONG TIME PROTECTION Ir = 630A				
			SHORT TIME PROTECTION Isd = 2520A				
			INSTANTANEOUS CURRENT Ii = 3000A				
5	1.MoCB	MOTOR 1 AND 2 CIRCUIT BREAKERS	In	320	A	–	TRIP UNIT RATING
	2.MoCB	SCHNEIDER ELECTRIC, COMPACT NSX400 : 400A, 36kA,	Ir	1.0	x Io	DIAL	
		COMPLETE WITH MICROLOGIC 2, 320A TRIP UNIT	tr	16	s	–	NON ADJUSTABLE
			Isd	5	xIr	DIAL	
			LONG TIME PROTECTION Ir = 320A				
			SHORT TIME PROTECTION Isd = 1600A				
			INSTANTANEOUS CURRENT Ii = 2400A				
6		MOTOR 1 AND 2 BASED ON 150kW, 415V MOTOR, FLC = 248A LOCKED ROTOR CURRENT = 272.8A STARTING CURRENT = 4.5 x FLC = 1116A DUTY RUNNING CURRENT = 223.2A					
	ESS	DANFOSS MCD500 INCORPORATES MOTOR OVERLOAD PROTECTION					

ARC FLASH HAZARD ASSESSMENT RESULTS
CALCULATION ASSESSMENT
MAIN SWITCHBOARD

ASSESSED USING CALCULATION METHOD DS29, VERSION 1 REVISION 5

ACTIVITY	MINIMUM PPE CATEGORY		DATE DECEMBER 2020	
	DOOR OPEN	DOOR CLOSED		
INCOMER			INCOMER ENERGY	
Racking	N/A	N/A	Incident Energy @ 455 mm	5.00 cal/cm^2
Switching	CAT 1	N/A	Arc Flash Boundary Whilst Switching	1.09m clear space
			Incomer Insulated – Risk Assessed	
NON–INCOMER CIRCUITS			BUSBAR ENERGY	
Switching or Racking	N/A	N/A	Incident Energy @ 455 mm	1.24 cal/cm^2
Live Electrical testing (Power Circuits)	CAT 1	N/A	Arc Flash Boundary Whilst Switching	0.47m clear space
Operating Controls	CAT 0	N/A		
Visual Inspection (Live Parts)	CAT 1	N/A		

ARC FLASH HAZARD ASSESSMENT RESULTS
CALCULATION ASSESSMENT
PUMP SWITCHBOARD

ASSESSED USING CALCULATION METHOD DS29, VERSION 1 REVISION 5

ACTIVITY	MINIMUM PPE CATEGORY		DATE DECEMBER 2020	
	DOOR OPEN	DOOR CLOSED		
INCOMER			INCOMER ENERGY	
Racking	N/A	N/A	Incident Energy @ 455 mm	1.20 cal/cm^2
Switching	CAT 0	N/A	Arc Flash Boundary Whilst Switching	0.46m clear space
			Incomer Insulated – Risk Assessed	
NON–INCOMER CIRCUITS			BUSBAR ENERGY	
Switching or Racking	N/A	N/A	Incident Energy @ 455 mm	1.20 cal/cm^2
Live Electrical testing (Power Circuits)	CAT 0	N/A	Arc Flash Boundary Whilst Switching	0.46m clear space
Operating Controls	CAT 0	N/A		
Visual Inspection (Live Parts)	CAT 0	N/A		

PRELIMINARY - NOT FOR CONSTRUCTION

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REV	DATE	DESCRIPTION
A2	18.12.20	ISSUED FOR CLIENT REVIEW
A1	09.12.20	ISSUED FOR INTERNAL REVIEW

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY JACOBS | VERTICAL DATUM NONE | COORDINATE SYS NONE | DES CALC V. CHONG | DES CHD D. OLADEJO

ASCON SURVEY NONE | DES REF IW200060 | DRN V. CHONG | Q.C. CHD D. OLADEJO

NORTH POINT

Jacobs

RECOMMENDED

CONSULTANT PROJECT MANAGER

APPROVED

CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM
ELECTRICAL PRIMARY DESIGN
PROTECTION GRADING CURVES

FILE PROJECT C–S01648 | PLAN KJ79–40–5 | CAD | ISSUE A2 | ORIGINAL SHEET SIZE A1 | MF

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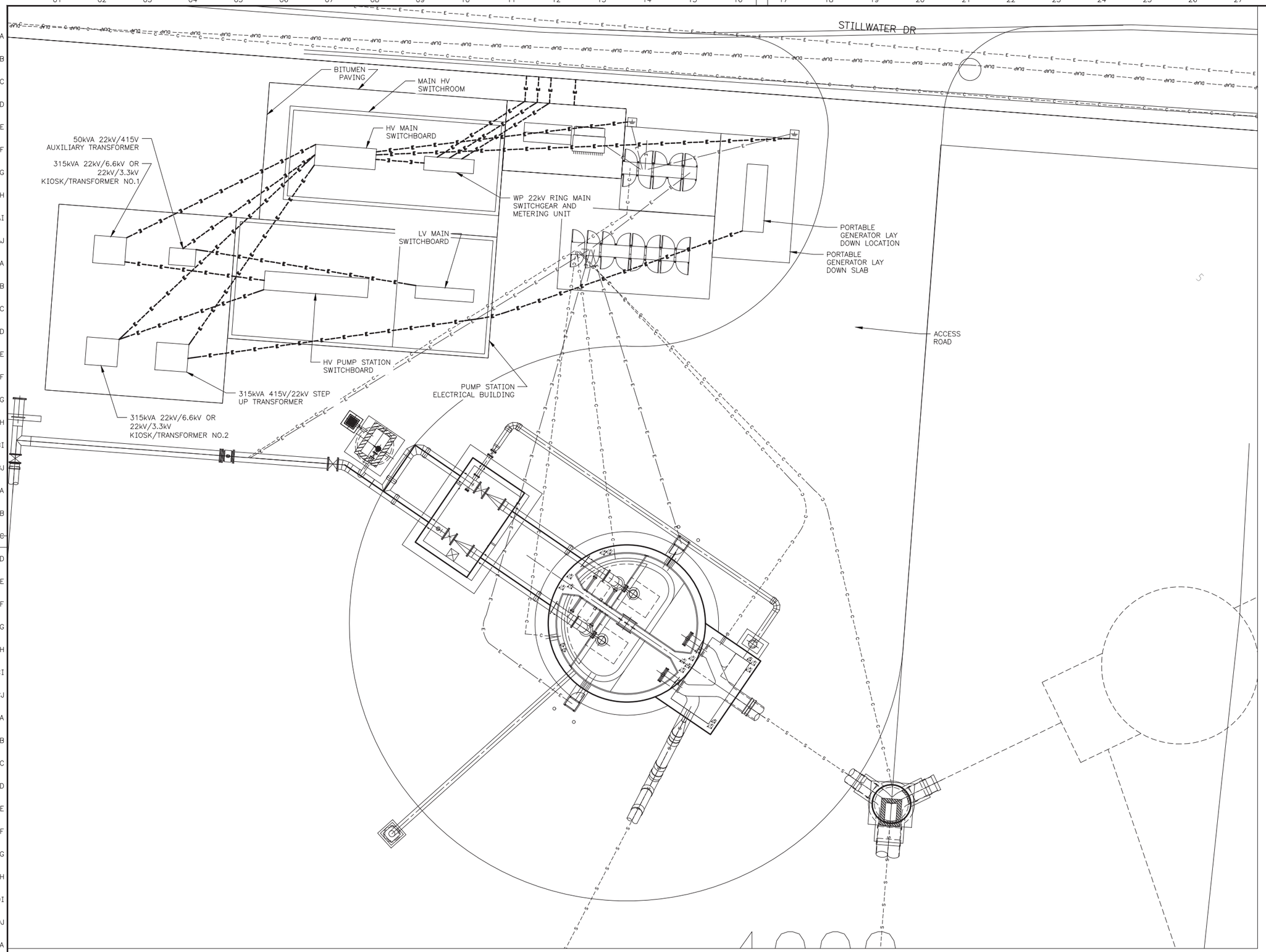

PLAN
SCALE (1)

LOCALITY PLAN
SCALE: DIAGRAMMATIC

LEGEND

- NEW UNDERGROUND LV POWER CONDUIT BURIED 500MM BELOW FGL TO TOP 1x150mm DIAMETER ORANGE HD PVC UOI
- EXISTING UNDERGROUND CONTROLS CONDUIT BURIED 500MM BELOW FGL TO TOP 1x32mm DIAMETER WHITE PVC UOI
- EXISTING UNDERGROUND COMMUNICATIONS SERVICE (LBNCo)
- EXISTING UNDERGROUND LV POWER
- EXISTING UNDERGROUND COUNCIL DRAIN (CITY OF ROCKINGHAM)
- EXISTING EARTH ELECTRODE PIT

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL CONDUITS TO BE LONG SWEEP TYPE.
3. EARTH PITS LV1 AND LV2 TO BE A MINIMUM OF 9M APART.
4. THE FUTURE SITE PLAN ASSUMES THE FOLLOWING:
   - THIS DRAWING IS A SKETCH AND NOT TO BE USED FOR CONSTRUCTION;
   - PUMP STARTER TYPE TO BE A SOFT STARTER;
   - HV PUMP STATION SWITCHBOARD FED BY TWO OIL TYPE OUTDOOR TRANSFORMERS;
   - LV MAIN SWITCHBOARD FED BY ONE OIL TYPE OUTDOOR TRANSFORMER;
   - VOLTAGE FOR PUMPS TO BE EITHER 6.6kV OR 3.3kV;
   - EXISTING WP TRANSFORMER IS DISTRICT AND THEREFORE REQUIRES THE INSTALLATION OF A WP RING MAIN SWITCHGEAR AND METERING UNIT WITHIN THE MAIN HV SWITCHROOM;
   - EXISTING SITE EARTHING ARRANGEMENT TO BE COMPLIANT WITH DS22; AND
   - HV MAIN SWITCHBOARD TO UTILISE EXISTING SITE EARTHING ARRANGEMENT.

ABBREVIATIONS

FGL	FIXED GROUND LEVEL
HV	HIGH VOLTAGE
ID	INTERNAL DIAMETER
LV	LOW VOLTAGE
TX	TRANSFORMER
UOI	UNLESS OTHERWISE INDICATED
WP	WESTERN POWER

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REV	DATE	DESCRIPTION
A3	18.12.20	ISSUED FOR CLIENT REVIEW
A2	09.12.20	ISSUED FOR INTERNAL REVIEW

(1) 1 0.5 0 1 2 3 4 5 6 7 m
SCALE 1:100

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY JACOBS	VERTICAL DATUM AHD	DES CALC S. BAUER	NORTH POINT
	COORDINATE SYS MGA94–50	DES CHD D. OLADEJO	
ASCON SURVEY NONE	DES REF IW200060	DRN S. BAUER	
		Q.C. CHD D. OLADEJO	

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WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM
ELECTRICAL PRIMARY DESIGN
FUTURE SITE PLAN

FILE	PLAN	CAD	ISSUE	ORIGINAL SHEET SIZE
PROJECT C–S01648	KJ79–41–6		A4	A1 MF

566
810

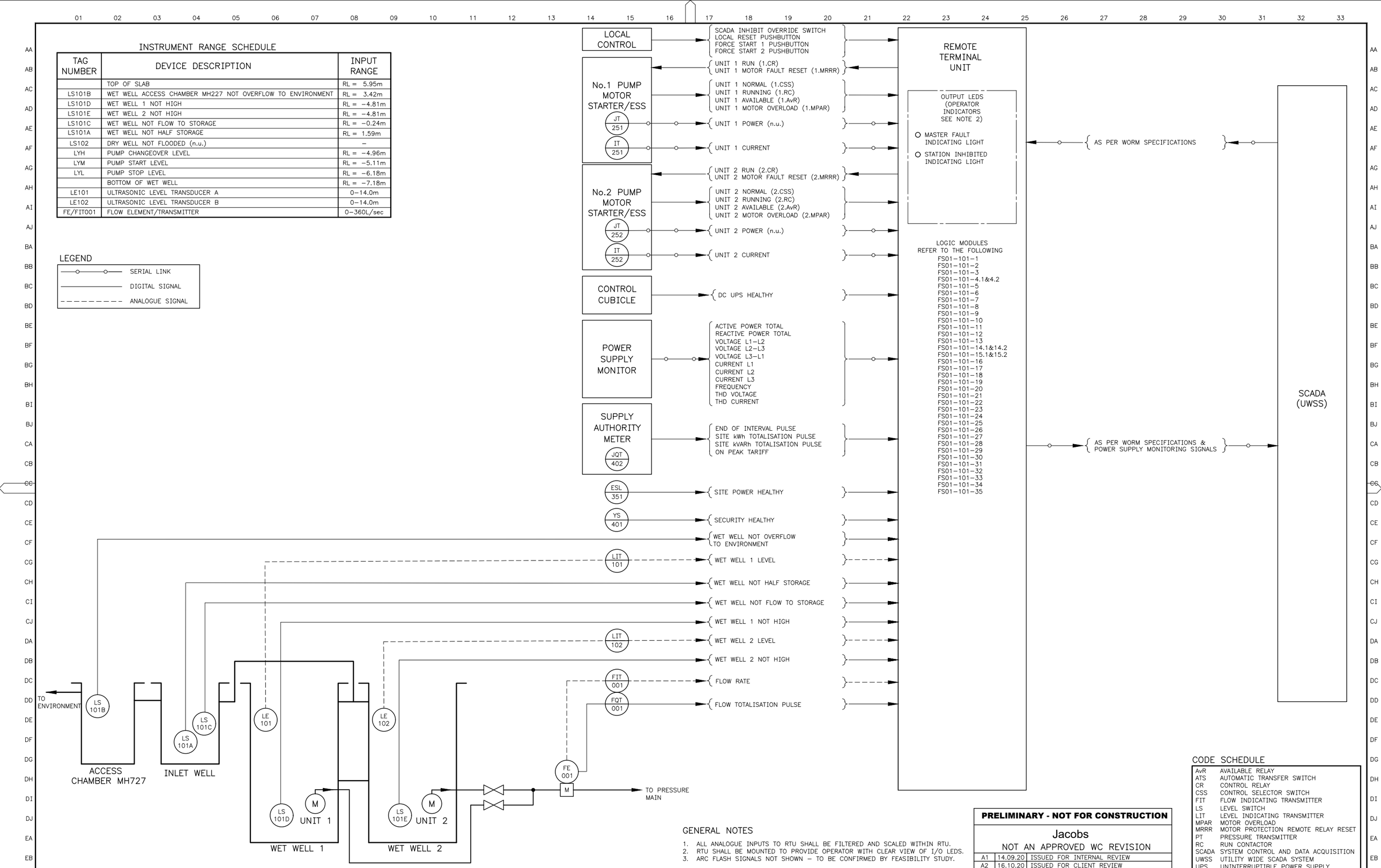
USERS\CHONGV1\APPDATA\LOCAL\PROJECTWISE\JACOBS_ANZ_IE\D0359317\KJ79-041-006 13:04 17/12/2020 CHONGV1/AUADL1L28RZNH2

INSTRUMENT RANGE SCHEDULE

TAG NUMBER	DEVICE DESCRIPTION	INPUT RANGE
	TOP OF SLAB	RL = 5.95m
LS101B	WET WELL ACCESS CHAMBER MH227 NOT OVERFLOW TO ENVIRONMENT	RL = 3.42m
LS101D	WET WELL 1 NOT HIGH	RL = −4.81m
LS101E	WET WELL 2 NOT HIGH	RL = −4.81m
LS101C	WET WELL NOT FLOW TO STORAGE	RL = −0.24m
LS101A	WET WELL NOT HALF STORAGE	RL = 1.59m
LS102	DRY WELL NOT FLOODED (n.u.)	–
LYH	PUMP CHANGEOVER LEVEL	RL = −4.96m
LYM	PUMP START LEVEL	RL = −5.11m
LYL	PUMP STOP LEVEL	RL = −6.18m
	BOTTOM OF WET WELL	RL = −7.18m
LE101	ULTRASONIC LEVEL TRANSDUCER A	0–14.0m
LE102	ULTRASONIC LEVEL TRANSDUCER B	0–14.0m
FE/FIT001	FLOW ELEMENT/TRANSMITTER	0–360L/sec

LEGEND

- SERIAL LINK
- DIGITAL SIGNAL
- ANALOGUE SIGNAL



GENERAL NOTES

1. ALL ANALOGUE INPUTS TO RTU SHALL BE FILTERED AND SCALED WITHIN RTU.
2. RTU SHALL BE MOUNTED TO PROVIDE OPERATOR WITH CLEAR VIEW OF I/O LEDS.
3. ARC FLASH SIGNALS NOT SHOWN – TO BE CONFIRMED BY FEASIBILITY STUDY.

CODE SCHEDULE

AvR	AVAILABLE RELAY
ATS	AUTOMATIC TRANSFER SWITCH
CR	CONTROL RELAY
CSS	CONTROL SELECTOR SWITCH
FIT	FLOW INDICATING TRANSMITTER
LS	LEVEL SWITCH
LIT	LEVEL INDICATING TRANSMITTER
MPAR	MOTOR OVERLOAD
MRRR	MOTOR PROTECTION REMOTE RELAY RESET
PT	PRESSURE TRANSMITTER
RC	RUN CONTACTOR
SCADA	SYSTEM CONTROL AND DATA ACQUISITION
UWSS	UTILITY WIDE SCADA SYSTEM
UPS	UNINTERRUPTIBLE POWER SUPPLY
WWPS	WASTE WATER PUMP STATION

PRELIMINARY - NOT FOR CONSTRUCTION

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A1	14.09.20	ISSUED FOR INTERNAL REVIEW
A2	16.10.20	ISSUED FOR CLIENT REVIEW

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM NONE	DES CALC S VILLANUEVA	NORTH POINT
	COORDINATE SYS NONE	DES CHD A KOSSOVSKI	
ASCON SURVEY NONE	DES REF IW200060	DRN R SHARMA	
		Q.C. CHD B LEE	

Jacobs

RECOMMENDED

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APPROVED

CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM
PRIMARY DESIGN
CONTROL & INSTRUMENTATION DIAGRAM

FILE	PLAN	CAD	ISSUE	ORIGINAL SHEET SIZE
PROJECT C–S01648	KJ79–50–1		A	A1
				MF

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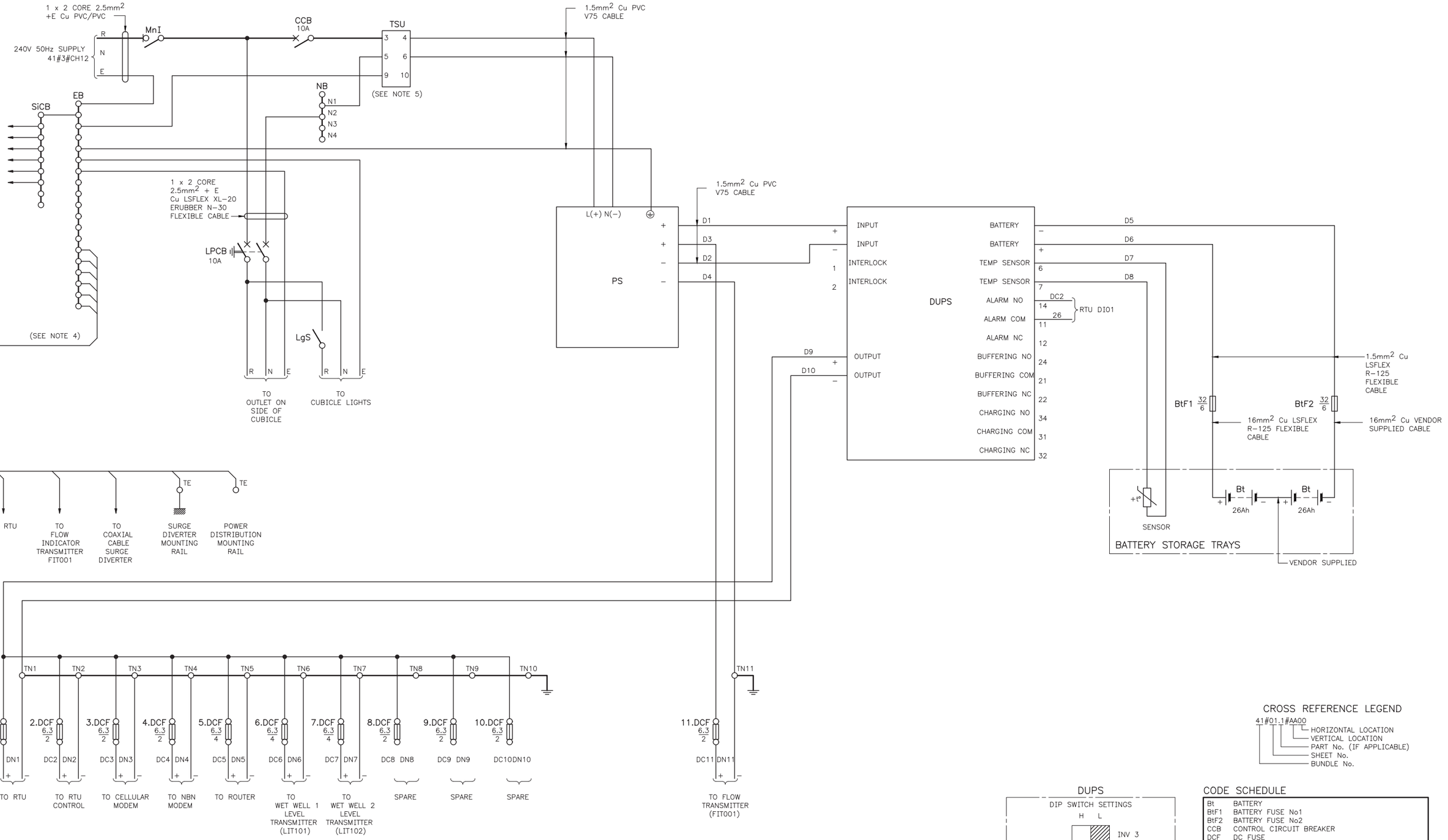
ACOBS.COM\ANZ\IE\PROJECTS\06_CENTRAL WEST\IW200060\01 DESIGN\I&C\READY TO ISSUE FOR ESR DRAFT\KJ79–50–1 17:15 21/10/2020 JLu/AUPER3LGWS0PH2



GENERAL NOTES

1. DRAWN NO POWER CONDITION
2. UNLESS OTHERWISE SHOWN 240V AC CONTROL CABLING MINIMUM 0.75mm^2 Cu PVC V75 OR LSFLEX R-125
3. UNLESS OTHERWISE SHOWN 24V DC CONTROL CABLING MINIMUM 0.5mm^2 Cu PVC V75 OR LSFLEX R-125
4. ALL EARTH WIRING SHALL BE CONNECTED DIRECTLY FROM EQUIPMENT TO EARTHBAR
5. WIRING TO LINE SIDE OF TSU (UNPROTECTED) SHALL BE SEPARATED FROM TSU LOAD SIDE WIRING (PROTECTED)

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A2	16.10.20	ISSUED FOR CLIENT REVIEW

DUPS

DIP SWITCH SETTINGS

H L

INV 3

INV 4

INV 5

TEMP

BATTERY SELECTOR SWITCH SET TO 17Ah

TIME SELECTOR SWITCH ∞

CHANGE OVER SWITCH 10A

CROSS REFERENCE LEGEND

41#01.1#AA00

- 41 — BUNDLE No.
- 01 — SHEET No.
- 1 — PART No. (IF APPLICABLE)
- A — VERTICAL LOCATION
- A — HORIZONTAL LOCATION

CODE SCHEDULE

Bt	BATTERY
BtF1	BATTERY FUSE No1
BtF2	BATTERY FUSE No2
CCB	CONTROL CIRCUIT BREAKER
DCF	DC FUSE
DUPS	DC UNINTERRUPTIBLE POWER SUPPLY
EB	EARTH BAR
LgS	LIGHT SWITCH
LPCB	LIGHTING AND POWER OUTLETS CIRCUIT BREAKER
MnI	MAIN ISOLATOR
NB	NEUTRAL BAR
PS	POWER SUPPLY
SiCB	SIGNAL COMMON BAR
TSU	TRANSIENT SUPPRESSION UNIT

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 08-Apr-2021 FILE 28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE | VERTICAL DATUM NONE | COORDINATE SYS NONE | ASCON SURVEY NONE | DES REF IW200060

DES CALC S VILLANUEVA | DES CHD A KOSSOVSKI | DRN R SHARMA | Q.C. CHD B LEE

NORTH POINT

Jacobs

RECOMMENDED

CONSULTANT PROJECT MANAGER

APPROVED

CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700-35- STILLWATER DR & PM
CONTROL CUBICLE
POWER DIAGRAM

FILE | PLAN KJ79-51-4 | CAD | ISSUE A | MF

PROJECT C-S01648

ORIGINAL SHEET SIZE A1

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ACOBS.COM\ANZ\IE\PROJECTS\06_CENTRAL WEST\IW200060\01 DESIGN\I&C\READY TO ISSUE FOR ESR DRAFT\KJ79-51-4 17:15 21/10/2020 JLu/AUPER3LGWS0PH2

RL=3.42m —— OVERFLOW TO ENVIRONMENT ALARM

RL=1.59m —— HALF STORAGE ALARM

RL=−0.24m —— FLOW TO STORAGE ALARM

RL=−4.81m —— HIGH LEVEL ALARM

RL=−5.11m —— CUT−IN LEVEL

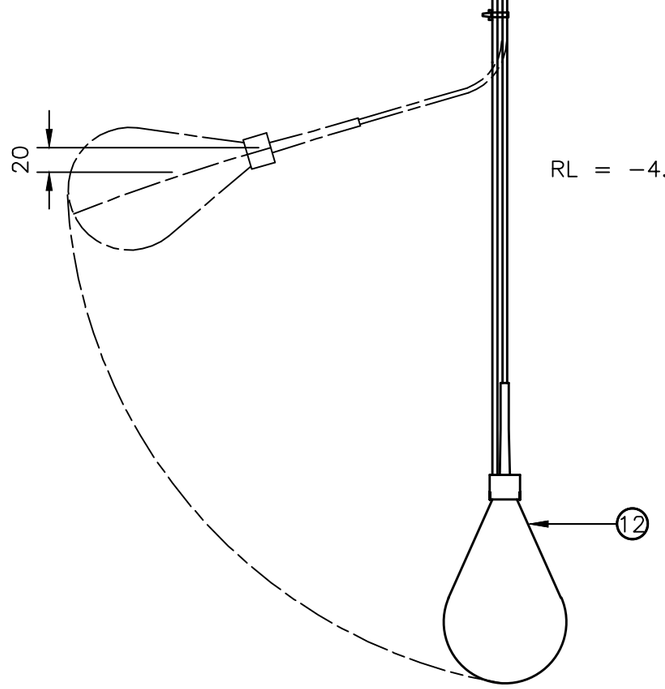
LIQUID LEVEL

RL=−6.18m —— CUT−OUT LEVEL

RL=−7.18m —— BOTTOM OF WELL

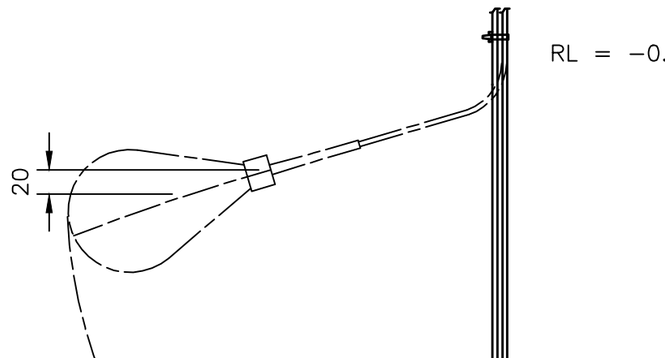
ACTUAL LEVEL MEASURED BY SENSOR

LEVEL TRANSMITTER DISPLAYED LEVEL FROM TOP OF SLAB



RL = −4.81m —— HIGH LEVEL ALARM SWITCH

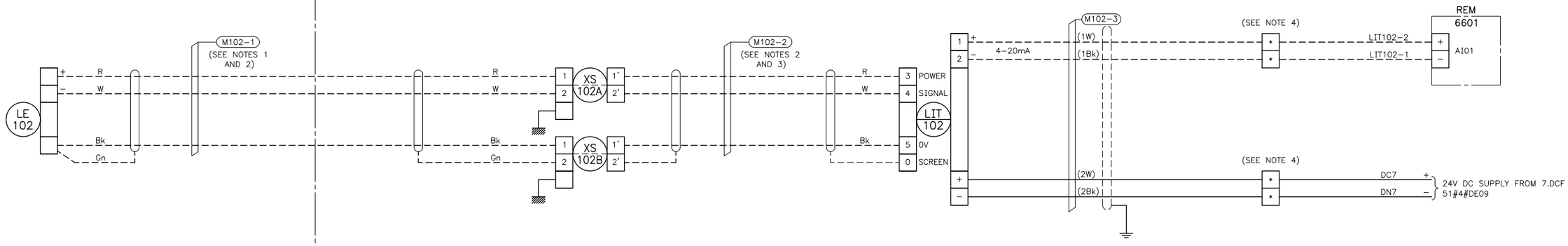
RL = −0.24m —— FLOW TO STORAGE ALARM SWITCH
(LOCATED IN INLET WELL)



ITEM	CODE	DE
1		HOOK
2		STRIP SHACK

INSTRUMENT SCHEDULE

NPUT RANGE	OUTPUT RANGE	RESISTANCE (OHMS)	CONTACTS		POWER SUPPLY	MANUFACTURER	MODEL	REM
			N/O	N/C				
0–14.0m	–	–	–	–	–	PULSAR	dB15 (NOTE 2)	0.5–15m RANGE
–	4–20mA	–	–	–	24V DC	PULSAR	BLACKBOX 130	
–	–	1	–	–	24V DC	CRITEC	UTB30SP	
–	–	1	–	–	24V DC	CRITEC	UTB30SP	



INSTRUMENT SCHEDULE

TAG	DEVICE	INPUT RANGE	OUTPUT RANGE	RESISTANCE (OHMS)	CONTACTS N/O	CONTACTS N/C	POWER SUPPLY	MANUFACTURER	MODEL	REMARKS
LE102	WET WELL 2 LEVEL SENSOR	0–14.0m	–	–	–	–	–	PULSAR	dB15 (NOTE 2)	0.5–15m RANGE
LIT102	WET WELL 2 LEVEL TRANSMITTER	–	4–20mA	–	–	–	24V DC	PULSAR	BLACKBOX 130	
XS102A	WET WELL 2 LEVEL SURGE DIVERTER A	–	–	1	–	–	24V DC	CRITEC	UTB30SP	
XS102B	WET WELL 2 LEVEL SURGE DIVERTER B	–	–	1	–	–	24V DC	CRITEC	UTB30SP	

REFERENCE EXPLANATION

(P)WXYZ
41#1.1#AB34

- PANEL LETTER
- CODE
- HORIZONTAL LOCATION
- VERTICAL LOCATION
- PART Nº (IF REQUIRED)
- SHEET Nº
- BUNDLE Nº

GENERAL NOTES

1. CABLE M101–1 VENDOR SUPPLIED CABLE (STANDARD CABLE LENGTHS 5, 10, 20 OR 30m, ORDER CABLE LENGTH TO SUIT APPLICATION)
2. SENSOR CABLE LENGTH TO BE 20m
3. M101–2 CUT TO SUIT FROM M101–1. ALTERNATIVELY, INSTROLEX IEC183AA002 (2 PAIR)
4. DETAILS TO BE UPDATED BY CONTRACTOR.

LEGEND:

——————— DIGITAL SIGNAL

– – – – – – – – – – – – ANALOGUE SIGNAL

CODE SCHEDULE

DCF	DC FUSE
EB	EARTH BAR
RTU	REMOTE TERMINAL UNIT

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 08-Apr-2021 FILE 28-50222-1

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A1	14.09.20	ISSUED FOR INTERNAL REVIEW
A2	16.10.20	ISSUED FOR CLIENT REVIEW

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE
VERTICAL DATUM NONE
COORDINATE SYS NONE
ASCON SURVEY NONE
DES REF IW200060
DES CALC S VILLANUEVA
DES CHD A KOSSOVSKI
DRN R SHARMA
Q.C. CHD B LEE
NORTH POINT

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

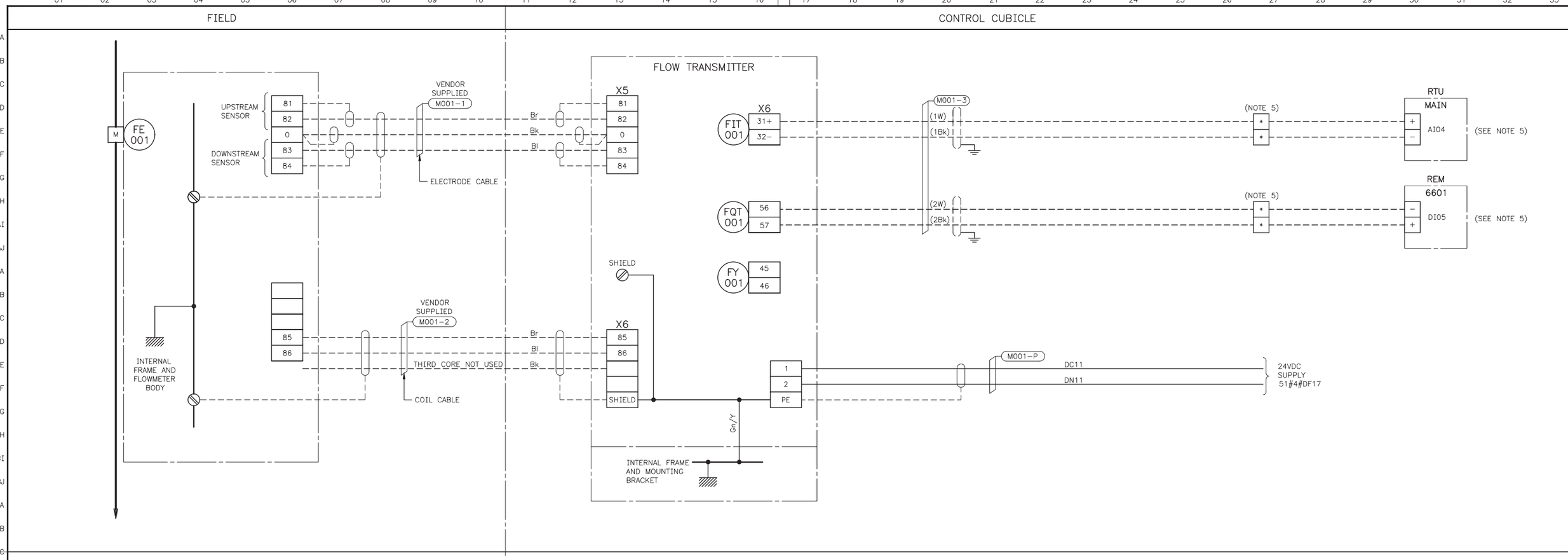
WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM
WET WELL 2 LEVEL TRANSMITTER (LIT102)
LOOP DIAGRAM

FILE
PROJECT C–S01648
PLAN KJ79–59–2
CAD
ISSUE A
ORIGINAL SHEET SIZE A1
MF

566
810

ACOBS.COM\ANZ\IE\PROJECTS\06_CENTRAL WEST\IW200060\01 DESIGN\I&C\READY TO ISSUE FOR ESR DRAFT\KJ79–59–2 17:23 21/10/2020 JLu/AUPER3LGWS0PH2



INSTRUMENT SCHEDULE

TAG	DEVICE	INPUT RANGE	OUTPUT RANGE	RESISTANCE (OHMS)	CONTACTS N/O	CONTACTS N/C	POWER SUPPLY	MANUFACTURER	MODEL	REMARKS
FE001	MAGNETIC FLOW SENSOR	0–160L/s	FIT001	–	–	–	–	SIEMENS	SITRANS MAG 5100W	DN400 PN16 (AS4087), COMPOSITE ELASTOMER LINING, IP68 SUBMERSIBLE KIT
	EARTHING RINGS	–	–	–	–	–	–	SIEMENS	FAU BW186–0400	DN400 SS316
FIT001	FLOW TRANSMITTER	FE001	4–20mA (HART)	–	–	–	24VDC	SIEMENS	SITRANS F M MAGFLO, MAG 6000	IP67, REMOTE TRANSMITTER WITH HART MODULE TO BE INSTALLED WITHIN NEW CONTROL CUBICLE
FQT001	FLOW TOTAL TRANSMITTER	–	HART	–	–	–				
M001–1	FLOW TRANSMITTER ELECTRODE CABLE	–	–	–	–	–	–	SIEMENS	A5E01181647 : 25m	DOUBLE SHIELDED, 3 x 0.25mm^2 CABLE
M001–2	FLOW TRANSMITTER COIL CABLE	–	–	–	–	–	–			

CODE SCHEDULE

FE	FLOW ELEMENT
FIT	FLOW INDICATING TRANSMITTER
FQT	FLOW TOTAL
REM	REMOTE TERMINAL UNIT EXPANSION MODULE
RTU	REMOTE TERMINAL UNIT
XS	SURGE DIVERTER

GENERAL NOTES

1. DRAWN NO POWER, NO FAULTS AND NO WATER CONDITION
2. UNLESS OTHERWISE SHOWN 240V AC CONTROL CABLING MINIMUM 0.75mm^2 Cu PVC V75 OR LSFLEX R–125
3. A BONDING CABLE SHALL BE INSTALLED ACROSS THE MAGNETIC FLOW SENSOR TRANSMITTER HEAD AT THE FLOW TRANSMITTER HEAD END ONLY. X5 TERMINALS 81, 0 AND 84 ARE NOT EARTHED BUT ARE CAPACITIVELY COUPLED INTERNALLY FOR RF SUPPRESSION PURPOSES
4. DETAILS TO BE UPDATED BY CONTRACTOR.

REFERENCE EXPLANATION

(P)WXYZ
41#1.1#AB34

- (P) PANEL LETTER
- WX CODE
- Y HORIZONTAL LOCATION
- Z VERTICAL LOCATION
- 41 PART N° (IF REQUIRED)
- 1.1 SHEET N°
- AB34 BUNDLE N°

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 08-Apr-2021 FILE 28-50222-1

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ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE
ASCON SURVEY NONE
VERTICAL DATUM NONE
COORDINATE SYS NONE
DES REF IW200060
DES CALC S VILLANUEVA
DES CHD A KOSSOVSKI
DRN R SHARMA
Q.C. CHD B. LEE
NORTH POINT

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM
DELIVERY FLOW TRANSMITTER (FIT001)
LOOP DIAGRAM

FILE
PROJECT C–S01648
PLAN KJ79–59–3
CAD
ISSUE A
ORIGINAL SHEET SIZE A1
MF

566
810

ACOBS.COM\ANZ\IE\PROJECTS\06_CENTRAL WEST\IW200060\01 DESIGN\I&C\READY TO ISSUE FOR ESR DRAFT\KJ79–59–3 17:23 21/10/2020 JLu/AUPER3LGWS0PH2

1. PUMP INFORMATION

1.1 PUMP TYPE	SUBMERSIBLE SEWAGE CENTRIFUGAL
1.2 NUMBER OF PUMPS	2 (DUTY/STANDBY)
1.3 MAKE/MODEL	KSB
1.4 IMPELLER TYPE	KRTK 200-503/2004UNG1-S IE3
1.5 DUTY IMPELLER	453.0mm
1.7 PUMPSET SPEED	1494 RPM
1.8 N.O.L.	139.87kW
1.9 PUMP NPSHr (m)	3.7m (AT DUTY)
1.10 NPSHa (m)	TBC
1.11 CONTROL	SINGLE SPEED
1.12 PUMP CURVES	REFER TO PUMP CURVE ON THIS DRAWING
1.13 PUMP SET ROTATION	DUTY / STANDBY ALTERNATING

1.14 PUMP DUTY POINTS	MAX. FRICTION	MIN. FRICTION	UNITS
1.14.1 FLOW RATE	159.62	181.16	L/s
1.14.2 HEAD	57.00	52.48	m
1.14.3 PUMP EFFICIENCY	77.92	77.78	%
1.14.4 % OF BEP	94.76	107.54	%
1.14.5 DUTY POWER	114.55	119.91	kW
1.14.6 PUMP SPEED	100	100	%

1.15 PUMP PROTECTION AND MONITORING

PROTECTION	DETECTION DEVICE	FUNCTION	SETTING	COMMENTS
TBC				
TBC				

2. PUMP SPECIFICATIONS

PUMPS SHALL COMPLY WITH SPS 506.

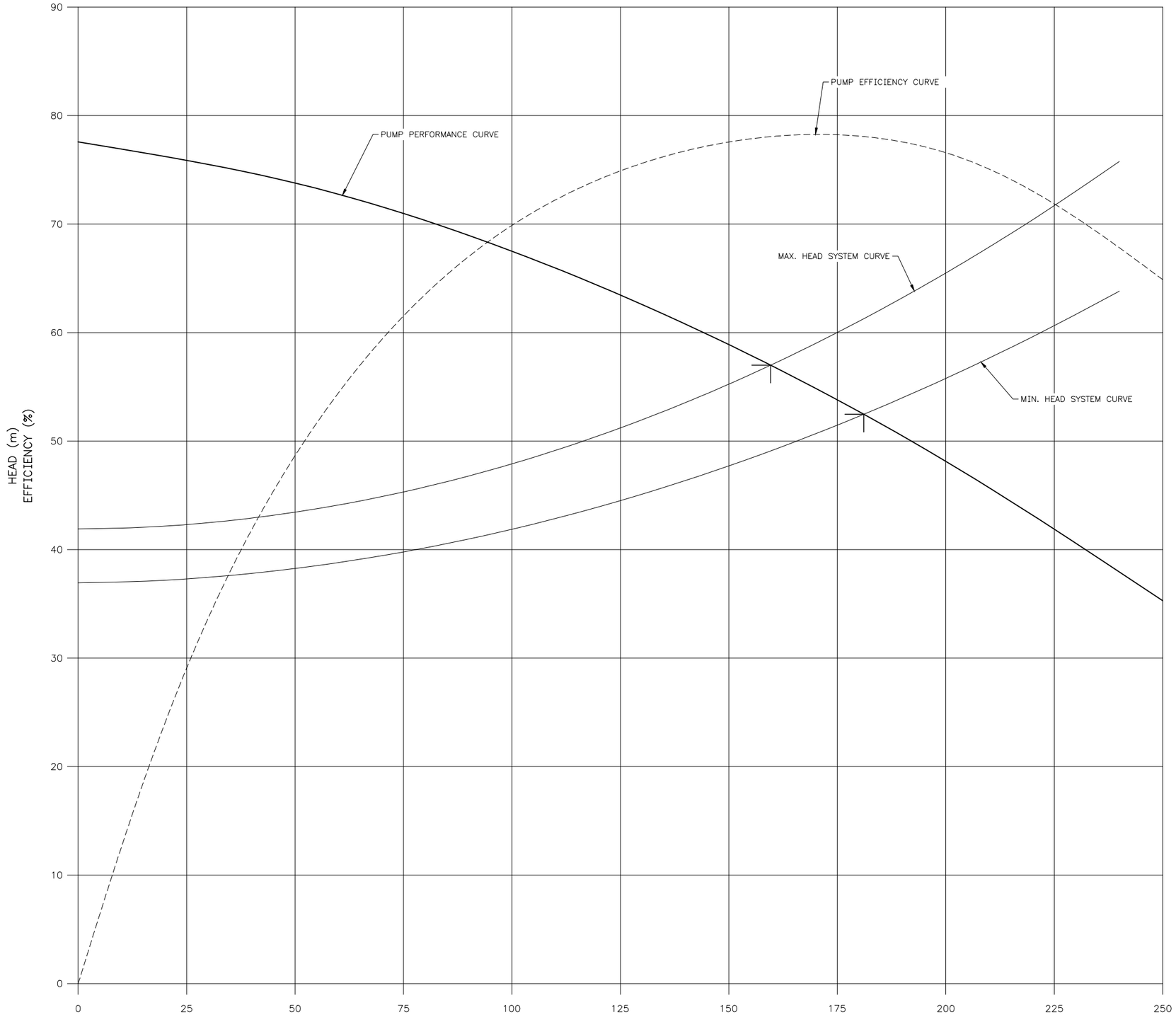
3. CHECK VALVES

CHECK VALVES SHALL COMPLY WITH SPS 223. (OR SPS 230 – TBC)
MINIMUM FLOW VELOCITY = XXX (TBC)

3.1 MAKE	TBC
3.2 MODEL	TBC
3.3 MATERIAL	DUCTILE IRON
3.4 FLANGES	TO AS 4087

4. GATE VALVES

GATE VALVES SHALL COMPLY WITH SPS 272.



BALDIVIS MAIN PUMP STATION NO.700-35 PUMP CURVE

PRELIMINARY - NOT FOR CONSTRUCTION

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REV	DATE	DESCRIPTION
A2	22.10.20	ISSUED FOR CLIENT REVIEW
A1	20.10.20	ISSUED FOR SQUAD CHECK

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY | VERTICAL DATUM | DES CALC | NORTH POINT
COORDINATE SYS | DES CHD
ASCON SURVEY | DES REF IW200060 | DRN | Q.C. CHD

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700-35- STILLWATER DR & PM
MECHANICAL DESIGN SUMMARY

FILE | PLAN | CAD | ISSUE
PROJECT C-S01648 | KJ79-90-1 | A2

ORIGINAL SHEET SIZE A1 | MF

566
810

USERS\JLU\APPDATA\LOCAL\PROJECTWISE\JACOBS_ANZ_IE\D0359317\KJ79-090-001 01:2 22/10/2020 JLu/AUPER3LGWS0PH2

PRELIMINARY - NOT FOR CONSTRUCTION

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REV	DATE	DESCRIPTION
A6	22.12.20	RE-ISSUED FOR CLIENT REVIEW
A5	17.12.20	RE-ISSUED FOR INTERNAL REVIEW

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

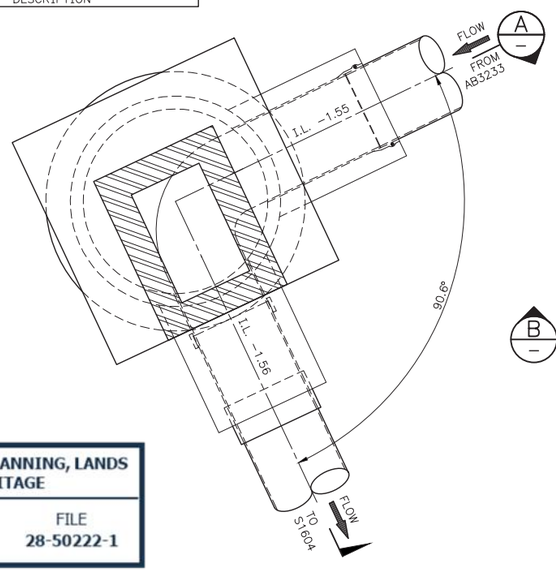
DATE	FILE
08-Apr-2021	28-50222-1

REFERENCE DRAWINGS

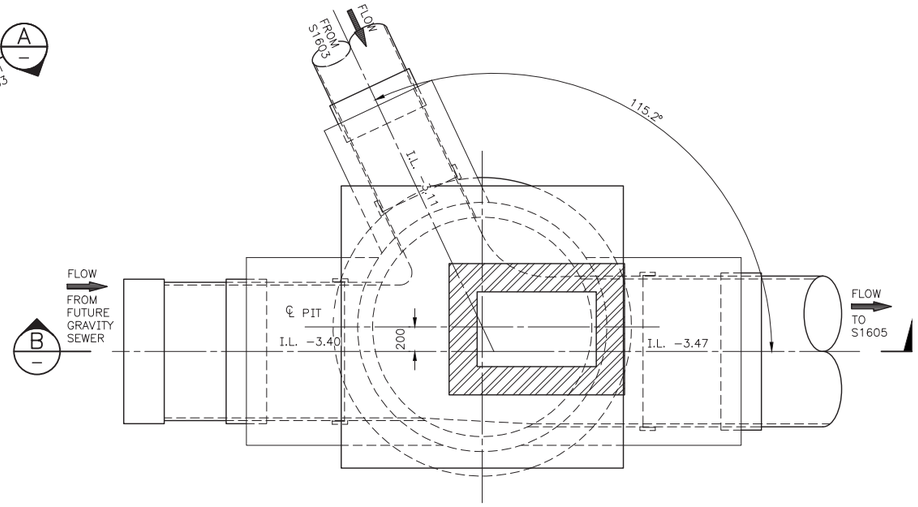
KJ79-3-1	PUMP STATION SITE PLAN
AA01-51-2	DN450 TO DN600 SEWERS UP TO 12m DEEP - GENERAL ARRANGEMENT
AA01-51-3	PIPE CONNECTION DETAILS - CAST INSITU BASES
AA01-51-4	CONSTRUCTION DETAILS
AA01-51-5	STAINLESS STEEL STAGING BAR DETAILS
AA01-51-6	PIPE CONNECTION DETAILS - PRECAST BASES

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
2. REFER TO DRG AA01-51-2 TO AA01-51-6 FOR TYPICAL ACCESS CHAMBER CONSTRUCTION DETAILS INCLUDING STEEL REINFORCEMENTS.
3. COVERS ARE NOT SHOWN FOR CLARITY.
4. REFER TO DRG KJ79-3-1 FOR SITE LOCALITY PLAN.

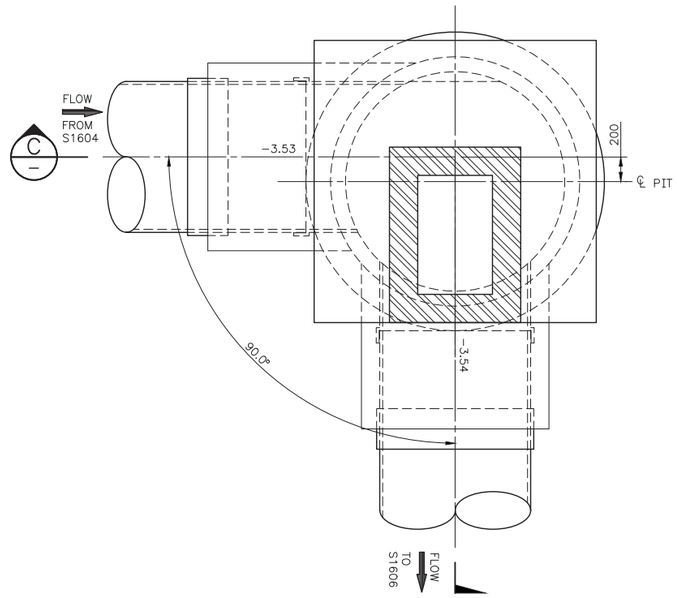


ACCESS CHAMBER
S1603

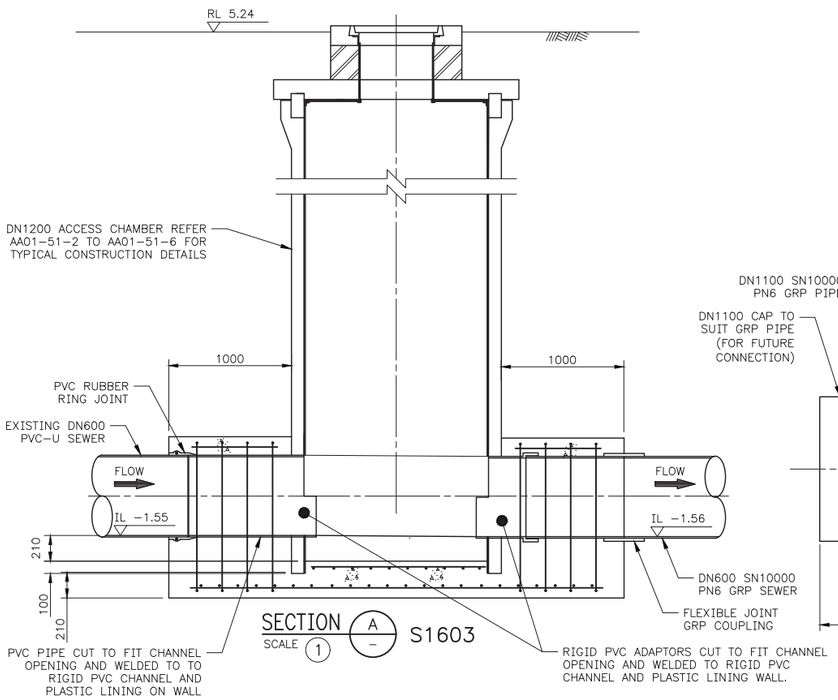


ACCESS CHAMBER
S1604

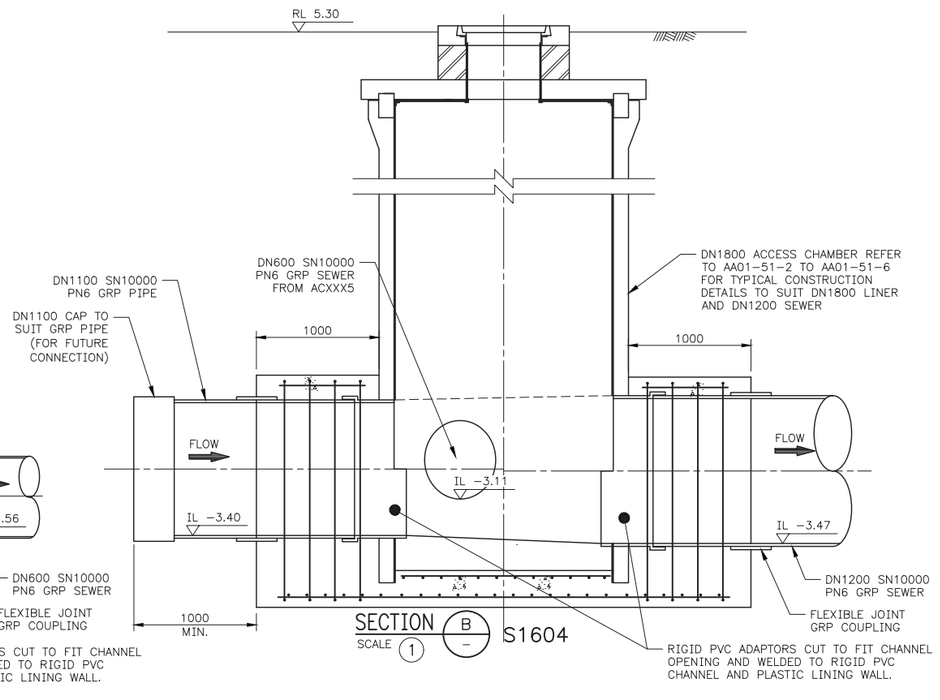
PLAN
SCALE (1)



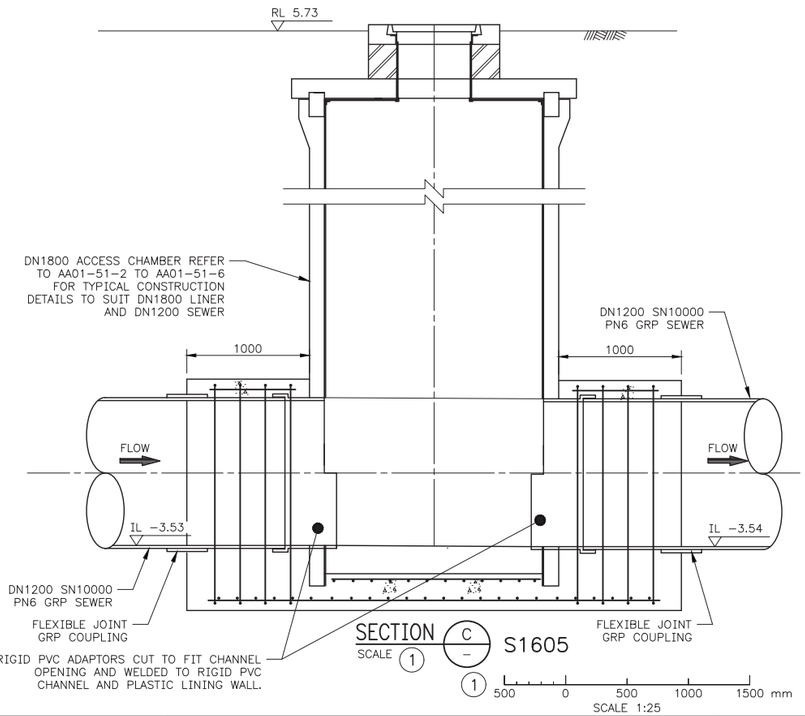
ACCESS CHAMBER
S1605



SECTION (A) S1603
SCALE (1)



SECTION (B) S1604
SCALE (1)



SECTION (C) S1605
SCALE (1)

(1) 500 0 500 1000 1500 mm
SCALE 1:25

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM AHD	DES CALC J. LU
	COORDINATE SYS MGA94-50	DES CHD R. FOURIE
ASCON SURVEY NONE	DES REF IW200060	DRN J. LU
		Q.C. CHD C. LEGERSTEE

NORTH POINT

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

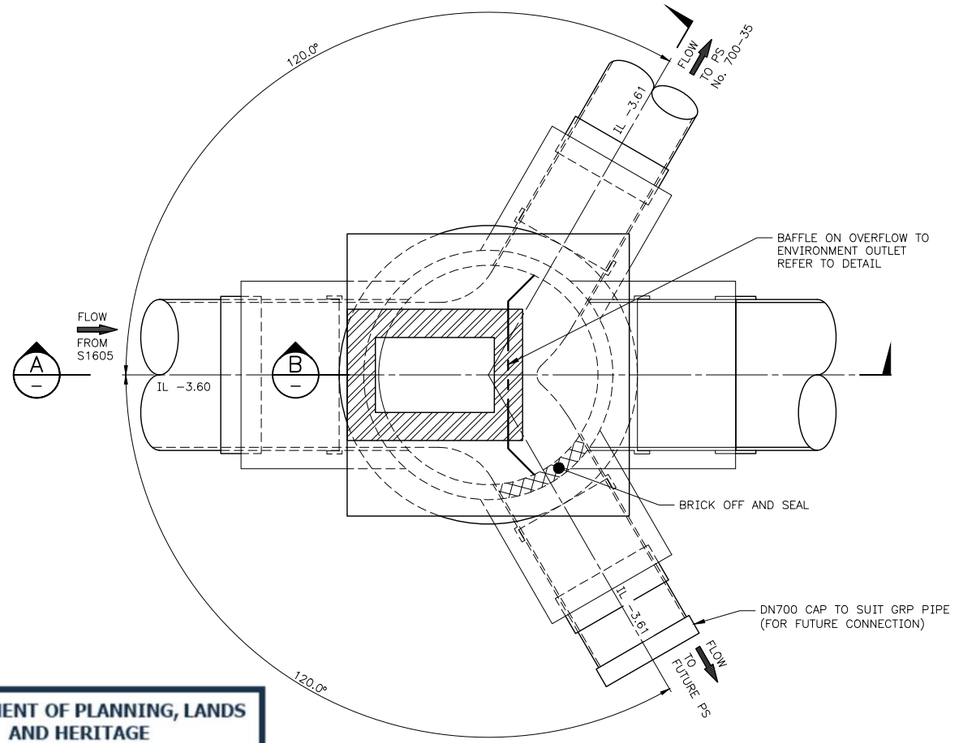
METROPOLITAN WASTEWATER - SOUTH BALDIVIS
DN1200 MAIN SEWER & DN600 COLLECTION SEWER - SECTION 1
GRAVITY SEWER INLET ACCESS CHAMBERS S1603 TO S1605
PLAN, SECTIONS AND CHAMBER DETAILS

FILE	PLAN	CAD	ISSUE
PROJECT C-S01648	GZ30-3-1		A6

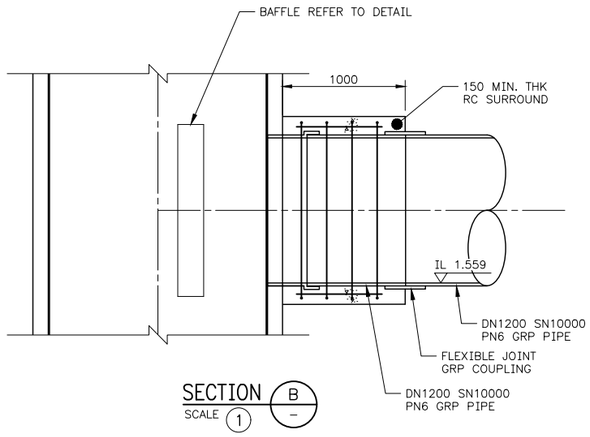
ORIGINAL SHEET SIZE A1

MF

566
810



ACCESS CHAMBER
S1606
PLAN
SCALE (1)



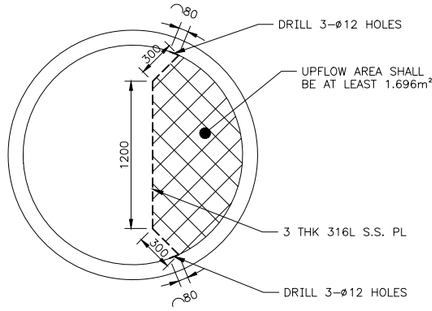
SECTION B – SCALE (1)

NOTES

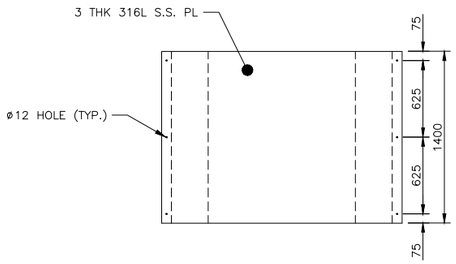
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
2. REFER TO DRG AA01–51–2 TO AA01–51–6 FOR TYPICAL ACCESS CHAMBER CONSTRUCTION DETAILS INCLUDING STEEL REINFORCEMENTS.
3. COVERS ARE NOT SHOWN FOR CLARITY.
4. REFER TO DRG KJ79–3–1 FOR SITE LOCALITY PLAN.

REFERENCE DRAWINGS

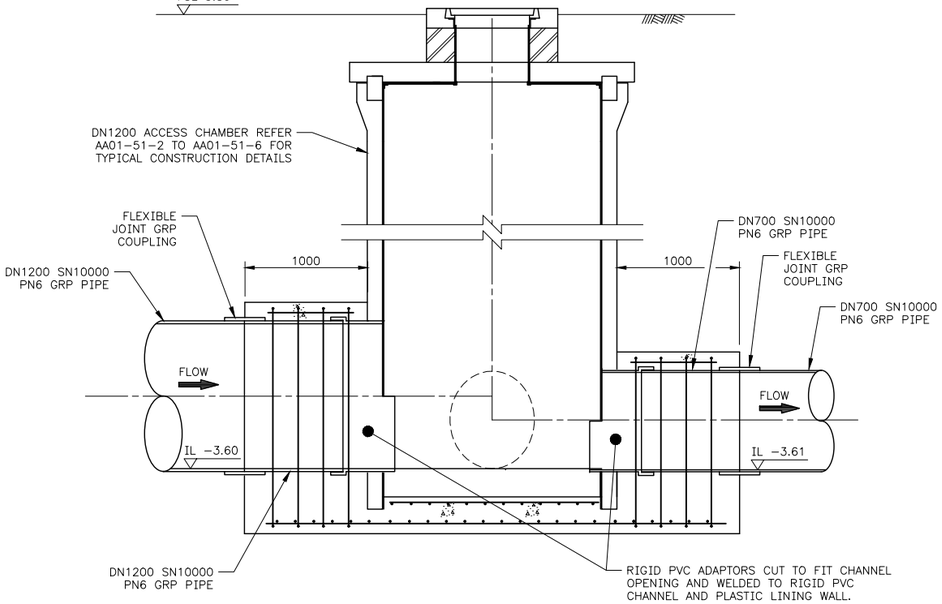
KJ79–3–1	PUMP STATION SITE PLAN
AA01–51–2	DN450 TO DN600 SEWERS UP TO 12m DEEP – GENERAL ARRANGEMENT
AA01–51–3	PIPE CONNECTION DETAILS – CAST INSITU BASES
AA01–51–4	CONSTRUCTION DETAILS
AA01–51–5	STAINLESS STEEL STAGING BAR DETAILS
AA01–51–6	PIPE CONNECTION DETAILS – PRECAST BASES



BAFFLE DETAILS
PLAN
SCALE (1)



BAFFLE DETAILS
ELEVATION
SCALE (1)



SECTION A – S1606
SCALE (1)

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

NOT AN APPROVED WC REVISION

REV	DATE	DESCRIPTION
A6	22.12.20	RE–ISSUED FOR CLIENT REVIEW
A5	17.12.20	RE–ISSUED FOR INTERNAL REVIEW

(1) 500 0 500 1000 1500 mm
SCALE 1:25

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE	FILE
08-Apr-2021	28-50222-1

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE	VERTICAL DATUM AHD	DES CALC J. LU
	COORDINATE SYS MGA94–50	DES CHD R. FOURIE
ASCON SURVEY NONE	DES REF IW200060	DRN J. LU
		Q.C. CHD C. LEGERSTEE

NORTH POINT

Jacobs

RECOMMENDED
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APPROVED
CONSULTANT PROJECT DIRECTOR

WATER CORPORATION

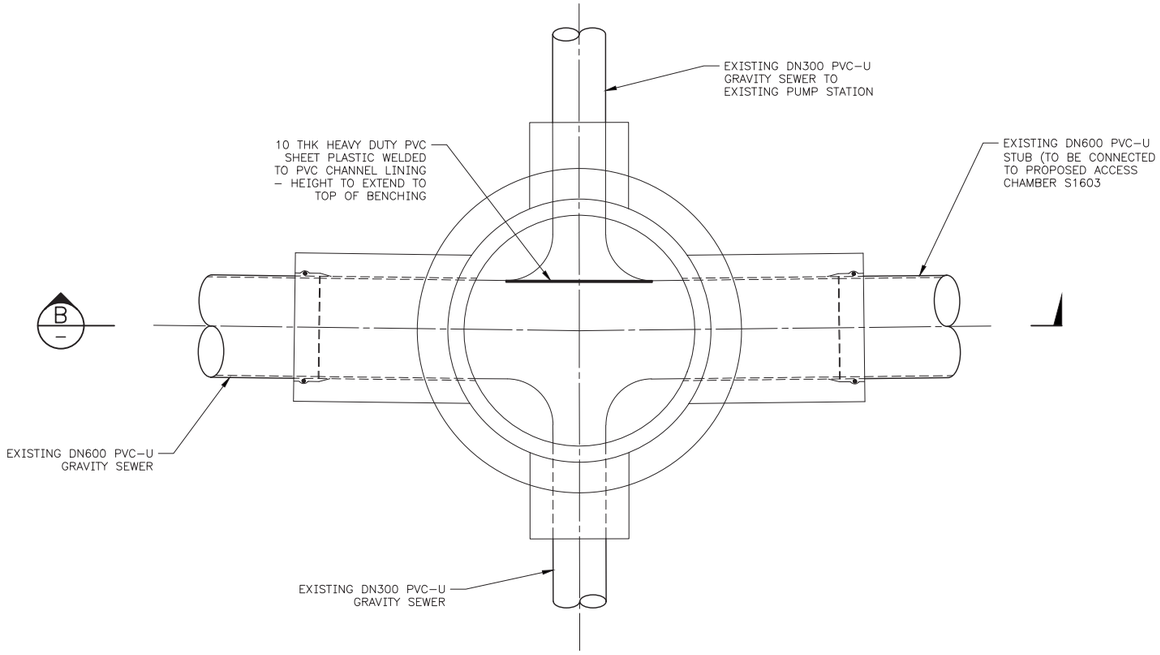
METROPOLITAN WASTEWATER – SOUTH BALDIVIS
DN1200 MAIN SEWER & DN600 COLLECTION SEWER – SECTION 1
GRAVITY SEWER INLET ACCESS CHAMBER S1606
PLAN, SECTION AND CHAMBER DETAILS

FILE	PLAN	CAD	ISSUE
PROJECT C–S01648	GZ30–3–2		A6

ORIGINAL SHEET SIZE A1

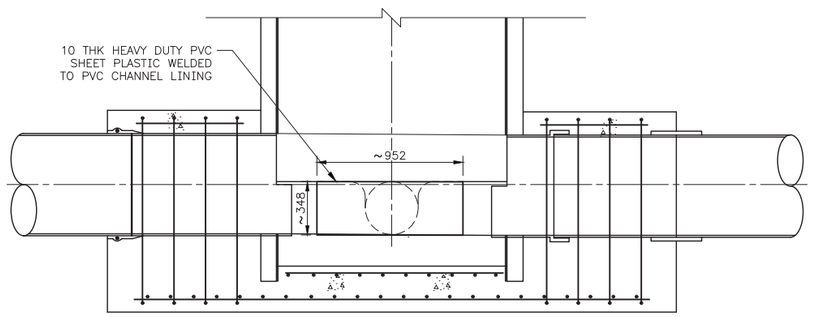
MF

566
810



ACCESS CHAMBER
AB3233

PLAN
SCALE 1



SECTION A–A
SCALE 1

PRELIMINARY - NOT FOR CONSTRUCTION

Jacobs

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REV	DATE	DESCRIPTION
A4	22.10.20	ISSUED FOR CLIENT REVIEW
A3	20.10.20	ISSUED FOR SQUAD CHECK

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 08-Apr-2021 FILE 28-50222-1

NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
2. ACCESS CHAMBER AB3233 DETAILS ARE NOT AVAILABLE AND ARE ASSUMED TO BE TO WC STD DRG AA01–51–2.

1 500 0 500 1000 mm
SCALE 1:20

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

DESIGN SURVEY NONE
ASCON SURVEY NONE
VERTICAL DATUM AHD
COORDINATE SYS MGA94–50
DES REF IW200060
DES CALC J. LU
DES CHD R. FOURIE
DRN J. LU
Q.C. CHD C. LEGERSTEE

NORTH POINT

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APPROVED
CONSULTANT PROJECT DIRECTOR

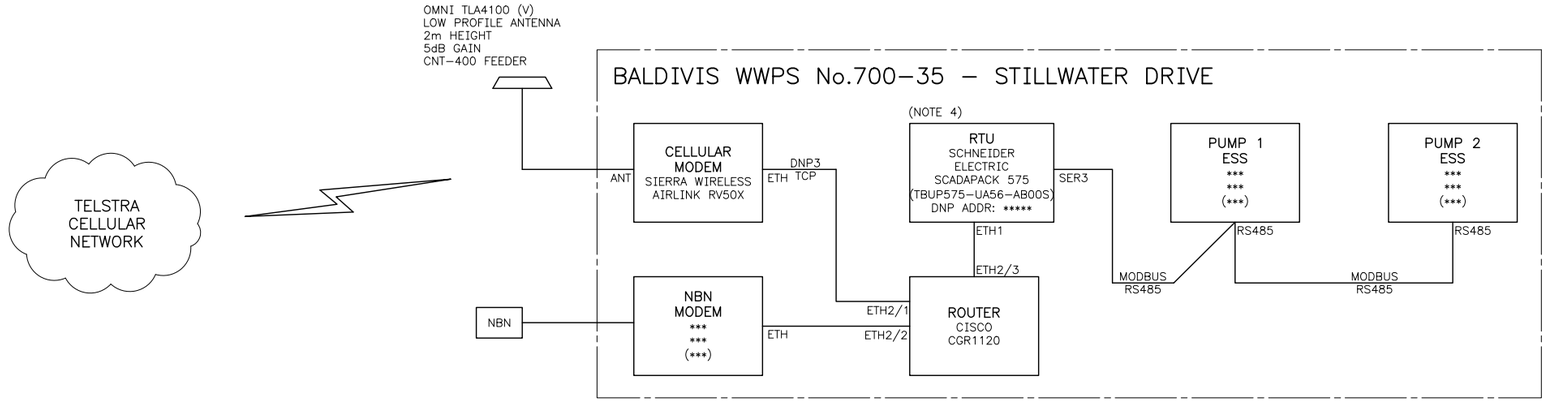
WATER CORPORATION

METROPOLITAN WASTEWATER
BALDIVIS MAIN PUMPING STATION NO.700–35– STILLWATER DR & PM
GRAVITY SEWER ACCESS CHAMBER AB3233
MODIFICATIONS

FILE
PROJECT C–S01648
PLAN GZ30–3–3
CAD
ISSUE A2

ORIGINAL SHEET SIZE A1
MF

566
810



GENERAL NOTES:

1. ALL SERIAL DATA CABLES ARE RS232 UNLESS OTHERWISE NOTED.
2. PROTOCOLS DEFINED TO COMMUNICATE VIA CELLULAR MODEM ARE DNP3 OVER TCP/IP.
3. PROTOCOLS DEFINED OVER ETHERNET LINKS ARE DNP3 OR MODBUS OVER TCP/IP.
4. DNP3 ADDR TO BE CONFIRMED DURING COMMISSIONING.

CODE SCHEDULE

ETH	ETHERNET PORT
RTU	REMOTE TERMINAL UNIT
V	ANTENNA IS VERTICALLY POLARISED
ESS	ELECTRICAL SOFT STARTER
SER	SERIAL PORT

DEPARTMENT OF PLANNING, LANDS AND HERITAGE

DATE 08-Apr-2021 FILE 28-50222-1

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ISSUE	DATE	GRID	REVISION	DRN	REC	APPD

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COORDINATE SYS NONE
ASCON SURVEY NONE
DES REF IW200060
DES CALC S VILLANUEVA
DES CHD A KOSSOVSKI
DRN R SHARMA
Q.C. CHD B LEE
NORTH POINT

Jacobs

RECOMMENDED
CONSULTANT PROJECT MANAGER
APPROVED
CONSULTANT PROJECT DIRECTOR

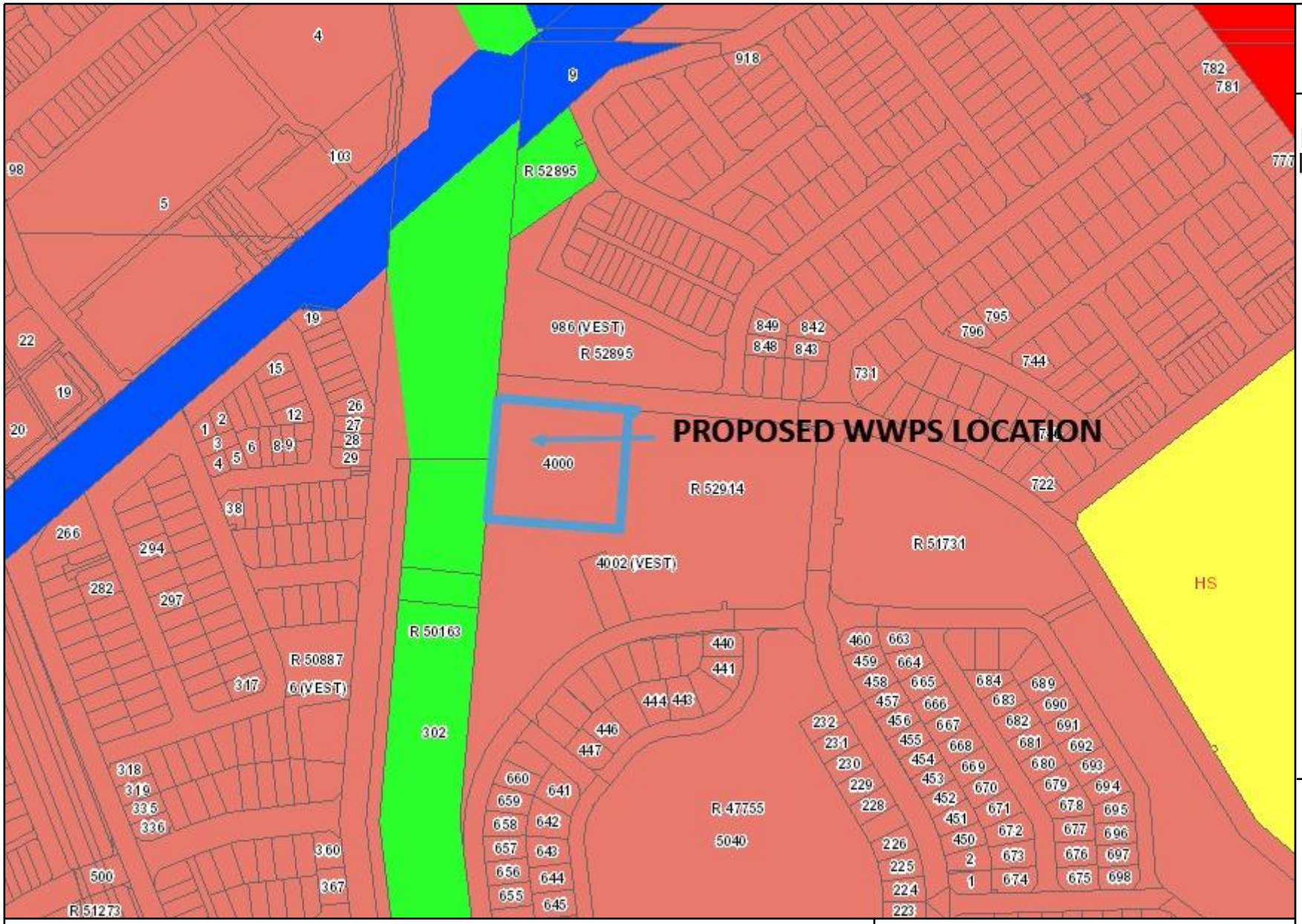
WATER CORPORATION

METROPOLITAN WATER SUPPLY AND WASTEWATER
SCADA CONTROL AND COMMUNICATIONS
CELLULAR NETWORK (UWSS)
SCADA BLOCK DIAGRAM - PART **

FILE
PROJECT C-S01648
PLAN HZ23-56-130-**
CAD
ISSUE A
ORIGINAL SHEET SIZE A1
MF

566
810

ACOBS.COM\ANZ\IE\PROJECTS\06_CENTRAL WEST\IW200060\01 DESIGN\I&C\READY TO ISSUE FOR ESR DRAFT\HZ23-56-130-XX 17:13 21/10/2020 JLu/AUPER3LGWS0PH2



Department of **Planning, Lands and Heritage**

GOVERNMENT OF WESTERN AUSTRALIA

Legend

- Cadastre (View 1)
- Region Scheme Boundary

Region Scheme Zones and Reserves

- Other regional roads
- Parks and recreation
- Primary regional roads
- Public purposes - high school
- Urban

Notes:

* The data that appears on the map may be out of date, not intended to be used at the scale displayed, or subject to license agreements. The map should only be used in matters related to Department of Planning, Lands and Heritage business.

* This map is not intended for measurement purposes.

Map was produced using DPLH's InQuiry.

LOCATION_METROPOLITAN REGION SCHEME

DPLH BUSINESS USE ONLY

Internal Spatial Viewer

N

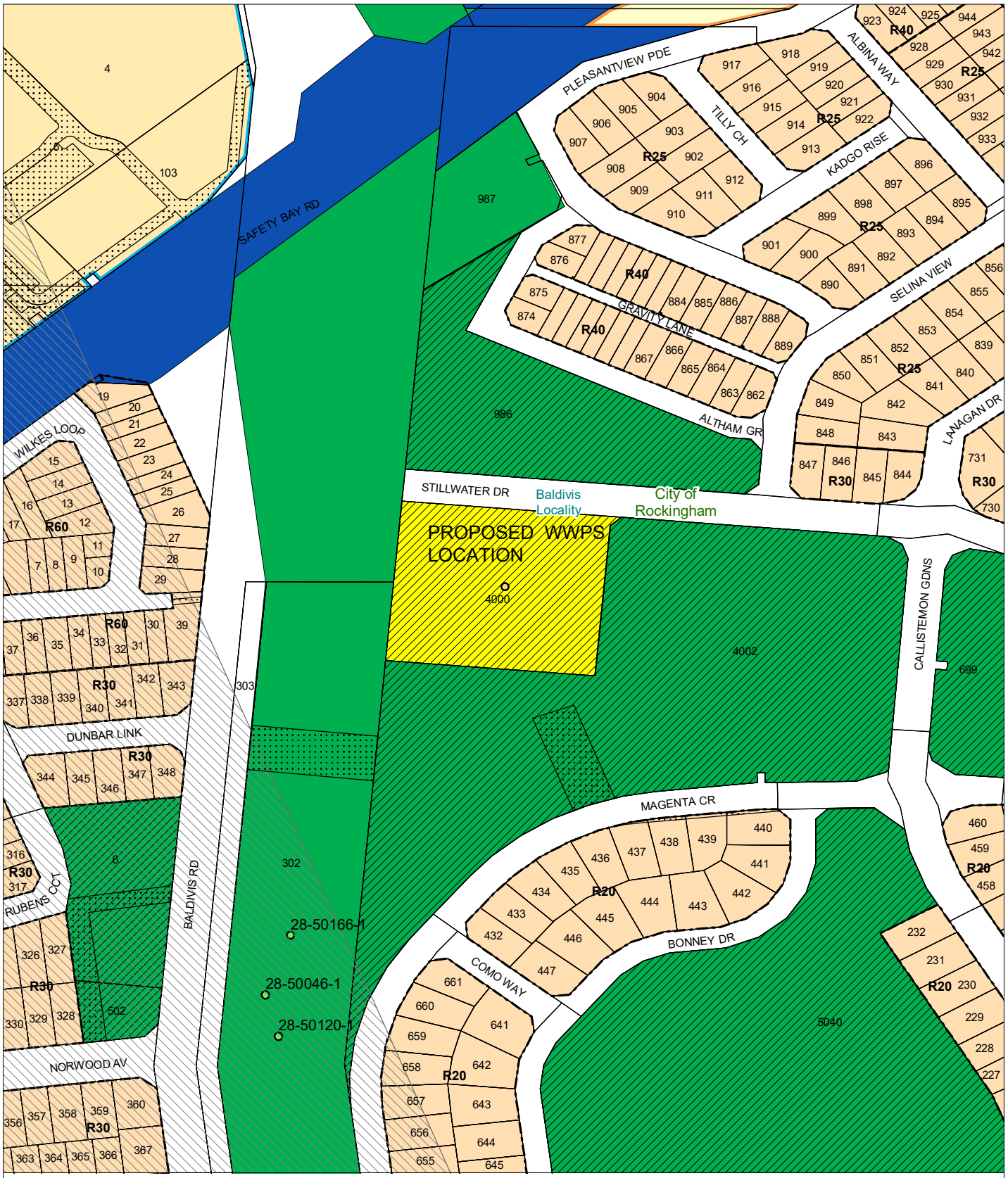
0 0.11 0.22 Kilometres

1: 5,000

at A4

Projection: WGS 1984 Web Mercator Auxiliary Sphere

Date produced: 28-May-2021



Location Plan for: Development Application

This data is to be used only for the processing of Development Application

Application Number: **28-50222-1**

Decision: OUTSTANDING

Printed: 8/04/2021

Western Australian Planning Commission

Produced by Data Analytics,
Department of Planning, Lands and Heritage, Perth WA

Base information supplied by
Western Australian Land Information Authority SLIP 1180-2020-1

Application Status

- Approved
- Outstanding

Existing LPS Zones and Reserves

- R Code boundaries
- Development
- District town centre
- Local roads
- Public open space
- Public purposes
- Residential

Easements and Referrals

- Easements
- Gas Pipeline - Dongara to Pinjarra 300m Referral

Region Scheme Reserves

- Other regional roads
- Parks and recreation

Localities & Local Government Boundaries

- Local government boundary
- Locality

N

0 10 20 30 40

meters

Department of **Planning, Lands and Heritage**

GOVERNMENT OF WESTERN AUSTRALIA

Legend

- [ ] Cadastre (View 1)

Aerial View

DPLH BUSINESS USE ONLY

Internal Spatial Viewer

N

0 0.11 0.22 Kilometres

1: 5,000

at A4

Projection: WGS 1984 Web Mercator Auxiliary Sphere

Notes:

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Map was produced using DPLH's InQuiry.

Date produced: 24-May-2021

SCHEDULE OF AGENCY COMMENTS

Agency	Comments
APA Group	There are no APA assets in the vicinity of the subject site that would be affected by the proposal. As such, APA has no objection or comments to make in relation to this application.
Department of Biodiversity, Conservation and Attractions	The Department of Biodiversity, Conservation and Attractions have assessed the above development application and have no comments to make at this time.
Department of Water and Environmental Regulation	It is understood that the wastewater pumping station, including a 3 ML storage tank, will be constructed on Lot 4000. An associated 160 metres of underground pipework will be laid through Lot 4002. Construction of underground wastewater pumping stations and storage tanks typically require dewatering for an extended period. This site has not been reported to the department under the *Contaminated Sites Act 2003*. The department does not hold any other information that may indicate known or suspected contamination of the lots. Acid sulfate soil risk mapping indicates that the site lies adjacent to an area identified as having a high to moderate risk of acid sulfate soils occurring within three metres of the natural soil surface. A small, constructed wetland is located within 100 metres of the proposed location of the pumping station. As the proposed construction of pumping station is likely to disturb acid sulfate soils and require extended dewatering at the site, the department recommends that acid sulfate soils condition EN8 and advice Ena1 should be applied to the approval, as published in 'Model Subdivision Conditions Schedule' (Department of Planning, Lands and Heritage; WAPC, December 2020). A contamination condition is not required for this development.
Western Power	We no longer assess development applications.
City of Rockingham	The City has completed its assessment of the application and provides its comments and recommendations to the Western Australian Planning Commission below. The City is concerned that the existing draining basin at the intersection of Stillwater Drive and Baldivis Road does not have sufficient capacity to directly receive the stormwater from the subject sewerage facility. The City notes that this drainage basin is seasonally inundated and that the basin was not designed to accommodate additional flows. The City recommends using a small planting area adjacent the hardstand area to treat stormwater flow and retain groundwater. The City does not support direct connection to the drainage basin.

	The City acknowledges the applicants comments regarding the commitment to provide easements to protect Water Corporation assets. The City notes that there is existing Water Corporation infrastructure within Lot 4002, Magenta Crescent and Lot 302 Baldivis Road, however, there are no easements in place. The City notes that there is no details as to which entity will maintain the landscaping within the subject property. The City will not be able to maintain or manage landscaping within the site as it does not own or have a management order on the land. It is the City's view that the lawn area shown on the plan will be insufficient to adequately contain the majority of stormwater onsite. Further, the City is of the view that the indicative location for "trenchless sewer and access chamber" shown on the plan KJ79-3-1 is not ideal, as it conflicts with the City's footpath and could be moved either north or south. In the instance, the City supports the application subject to the following conditions and advice notes: **Conditions** 1. The proposal is restricted from direct connection to the existing drainage basin located with the Baldivis Tramway Reserve at the intersection of Stillwater Drive and Baldivis Road. 2. The proposed system output must not exceed 350 Litres per second, unless further Development Approval has been obtained. 3. Prior to the issue of a Building Permit, the applicant must create an easement over the proposed and existing sewerage infrastructure, in favour of the Water Corporation within Lot 4002, Magenta Crescent and Lot 302 Baldivis Road, to the satisfaction of the Western Australian Planning Commission and the City of Rockingham. All works and costs associated with the creation of the easement are the responsibility of the applicant. 4. All earthworks shall be stabilised to prevent sand drift. 5. All traffic access and egress associated with the construction and management of the facility must be obtained from the proposed access point on Stillwater Drive. 6. A Dust Management Plan is to be prepared and implemented to the satisfaction of the City of Rockingham for the duration of works. 7. The applicant is responsible for protecting any existing City streetscape assets along Stillwater Drive during the course of the project. This includes any existing streetscape lighting, grated gully pits, side entry pits, kerbing, footpaths, trees, turf etc. If any damage is caused to the existing assets (identified to be retained), they must be rectified to the satisfaction of the City of Rockingham Manager Land and Development Infrastructure.

	8. The applicant must reinstate and revegetate all landscape areas and infrastructure that is damaged and/or cleared as a result of accessing and completing the works outside of the development site. The works are to be completed to the satisfaction of the City of Rockingham. 9. Stormwater from all hardstand shall be collected and contained on site. Stormwater must not affect or be allowed to flow onto or into any property or road reserve. All stormwater generated by the development must be managed in accordance with Planning Policy 3.4.3 - Urban Water Management to the satisfaction of the City of Rockingham. The approved plans must be implemented and all works must be maintained for the duration of the development. 10. Prior to applying for a Building Permit, a Landscaping Plan to the satisfaction of the City of Rockingham must be prepared and must include the following detail: (i) the location, number and type of existing and proposed trees and shrubs, including calculations for the landscaping area; (ii) any lawns to be established and areas to be mulched; (iii) any natural landscape areas to be retained; (iv) those areas to be reticulated or irrigated; and (v) proposed upgrading to landscaping, paving and reticulation of the street setback area and all verge areas. The landscaping, paving and reticulation must be completed prior to the occupation of the development, and must be maintained at all times to the satisfaction of the City of Rockingham for the duration of the development. 11. Trees, shrubs taller than 2m and grasstree plants (XANTHORRHOEACEAE family) must be retained (unless specifically identified for removal on the approved plans) and, during the construction period, measures for their retention must be taken in accordance with Australian Standard AS 4970—2009, Protection of trees on development sites. These measures are to be detailed in a vegetation retention management plan to the satisfaction of the City of Rockingham. Prior to applying for a Building Permit, arrangements must be made to the satisfaction of the City of Rockingham for the relocation of all grasstree plants that are specifically identified for removal. 12. An acid sulphate soils self-assessment form and, if required as a result of the self-assessment, an acid sulphate soils report and an acid sulphate soils management plan shall be submitted to and approved by the Department of Water and Environmental Regulation before any development commences. Where an acid sulphate soils management plan is required to be submitted, all works shall be carried out in accordance with the approved management plan to the satisfaction of the Western Australian Planning Commission, on the advice of the City of Rockingham.

	13. Prior to the commencement of development, a Construction Management Plan must be prepared and approved by the City of Rockingham to ensure appropriate management of construction related impacts. The approved plan must be implemented for the duration of construction works, to the satisfaction of the City of Rockingham. 14. Prior to the commencement of development, a Dewatering Management Plan and Ground Water Extraction Licence must be prepared and approved by the Department of Water and Environmental Regulations. The approved plan and licence must be implemented during the construction period of below ground assets, to the satisfaction of the Department of Water and Environmental Regulations. **Advice Notes** 1. All works in the road reserve, including construction of a crossover or footpath, installation of on-street carparking spaces, planting of street trees, bicycle parking devices, street furniture and other streetscape works and works to the road carriageway must be to the specifications of the City; the applicant should liaise with the City of Rockingham's Land and Development Infrastructure Services in this regard. 2. In regard to Condition 2, an Odour Report will not be required until the capacity exceeds 350 Litres per second. 3. It is recommended that a photographic dilapidation report is undertaken by the applicant/landowner, to record the current condition of any City of Rockingham assets. 4. In regard to Condition 9, the City recommends a small fringe of water gardens to accommodate events up to the critical 1 in 100 year event, with some of the flows filtering through subsoil to the City or Rockingham drainage basin. 5. The City recommends using a small planting area adjacent the hardstand area to treat stormwater flow and retain groundwater.