



Floodplain Harvesting - Storage Metering

August 2022

 **SIERRATEK**
AUTOMATION AND CONTROL



Approved LIDs - A/O July 2022



TOIP

- Small compact design
- Can be used for both Radar and Submersible



SigSense

- Plug and play
- Kit includes Radar sensor, telemetry unit, Antenna, Solar panel



Novacom - SynaptiX

- Turnkey, plug and play
- Integrated solar panel means it is service ready straight out of the box
- Fully configured prior to shipping to the DQP

Approved Sensors - A/O July 2022



Radar Sensors

- OTT RLS Radar



- Vega Vegaplug C 21 Radar



- Endress + Hauser FMR20 Radar



- YSI WaterLOG Nile Radar



Approved Sensors - A/O July 2022



Submersible Sensors

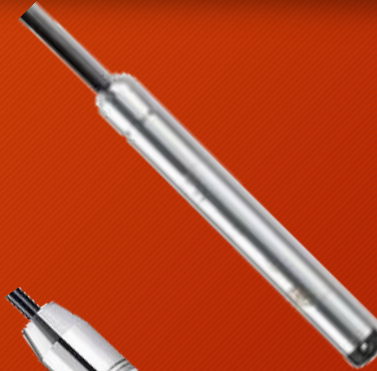
- Level Troll 500



- Keller-Druck 36XiW



OTT PLS



STS PTM



Seametrics PT12



Sensor Selection



RADAR Sensors

Pros

- Easy to install
- Less Maintenance
- Easier to Maintain
- Can be installed in wet storages (if Gantry exists)

Cons

- More Configuration
- Slightly Higher Costs
- More Exposed to movement, collisions with Pelicans etc

Sensor Selection



Submersible Sensors

Pros

- Easy to calibrate
- Less obtrusive
- Less prone to animal related damage/bird strike

Cons

- Hard to install in wet storages
- Higher maintenance

LID and Sensor Communications



To ensure LID and Radar/Submersible Sensor compatibility choose compliant outputs:

- SDI-12 (Preferred)
- MODBUS

Installation Process



Site Visit



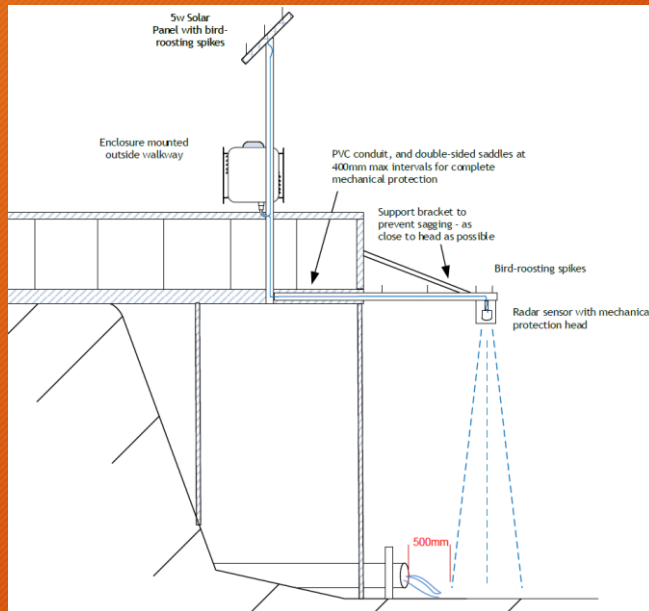
- Is there clear access to Storage?
- Is there any catwalk or steelwork?
- What's the distance from the catwalk to the bottom of storage - discharge gate?
- Is there Telstra Coverage?
- Is the storage full of water?
- Any secondary devices (gauge boards) already installed?
- Evidence of benchmarks?
- Document all details for LID and Sensor installation.



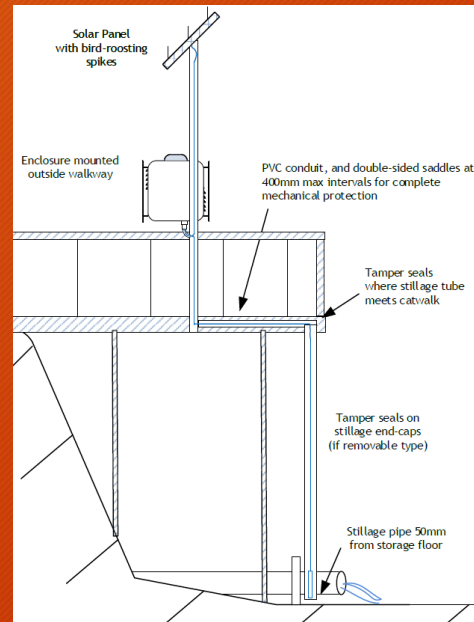
Approved Primary Metering Device Installation Designs



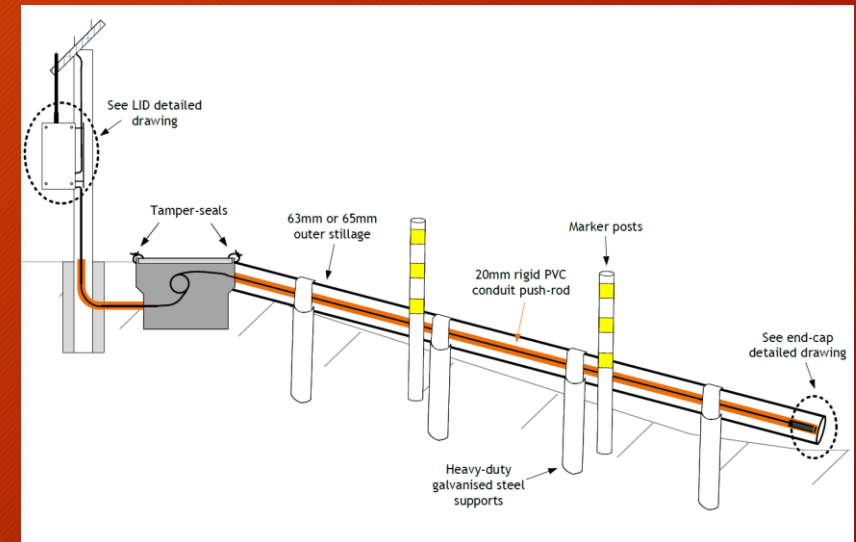
Elevated platform installation - Radar



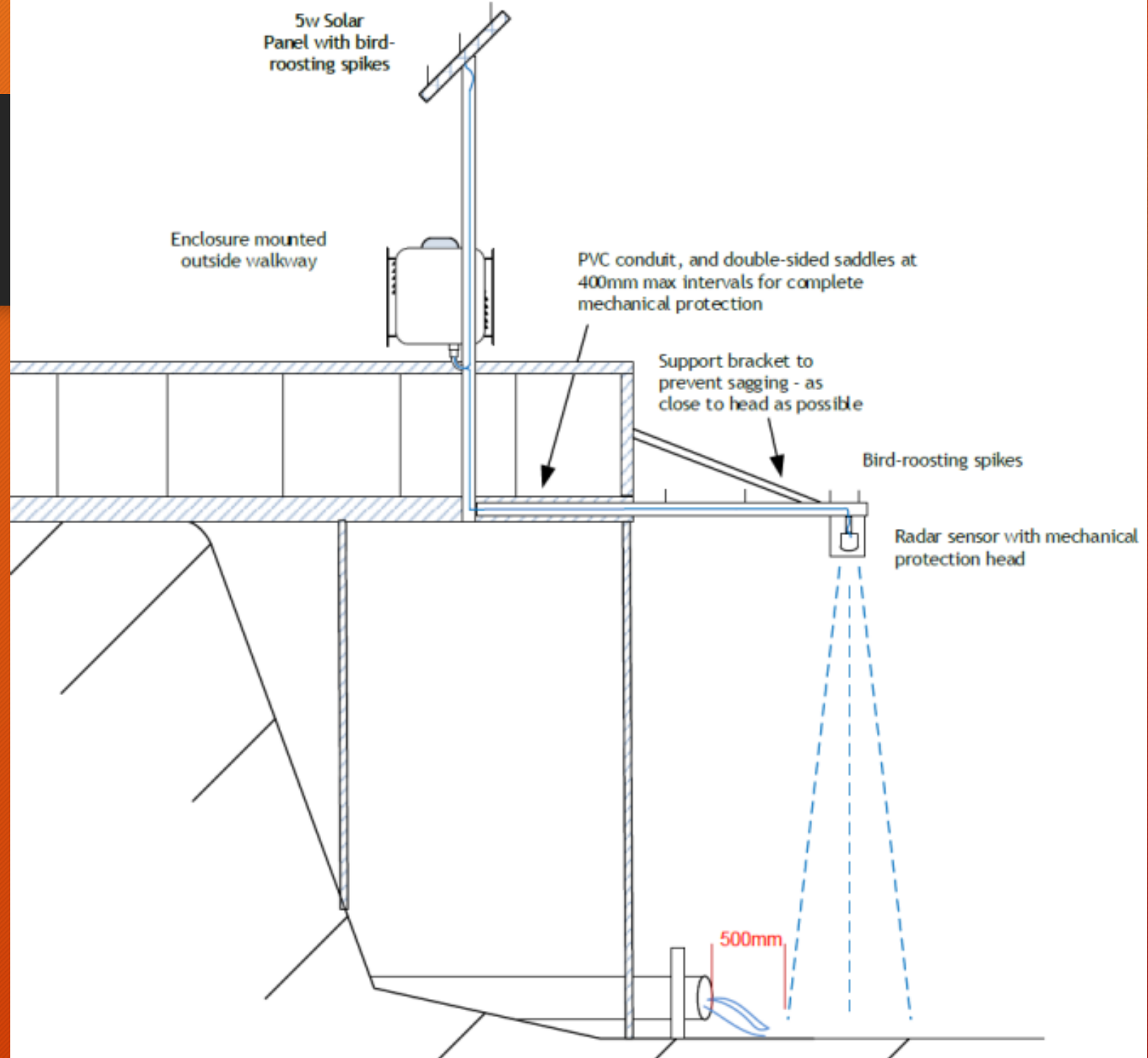
Elevated platform installation - Submersible



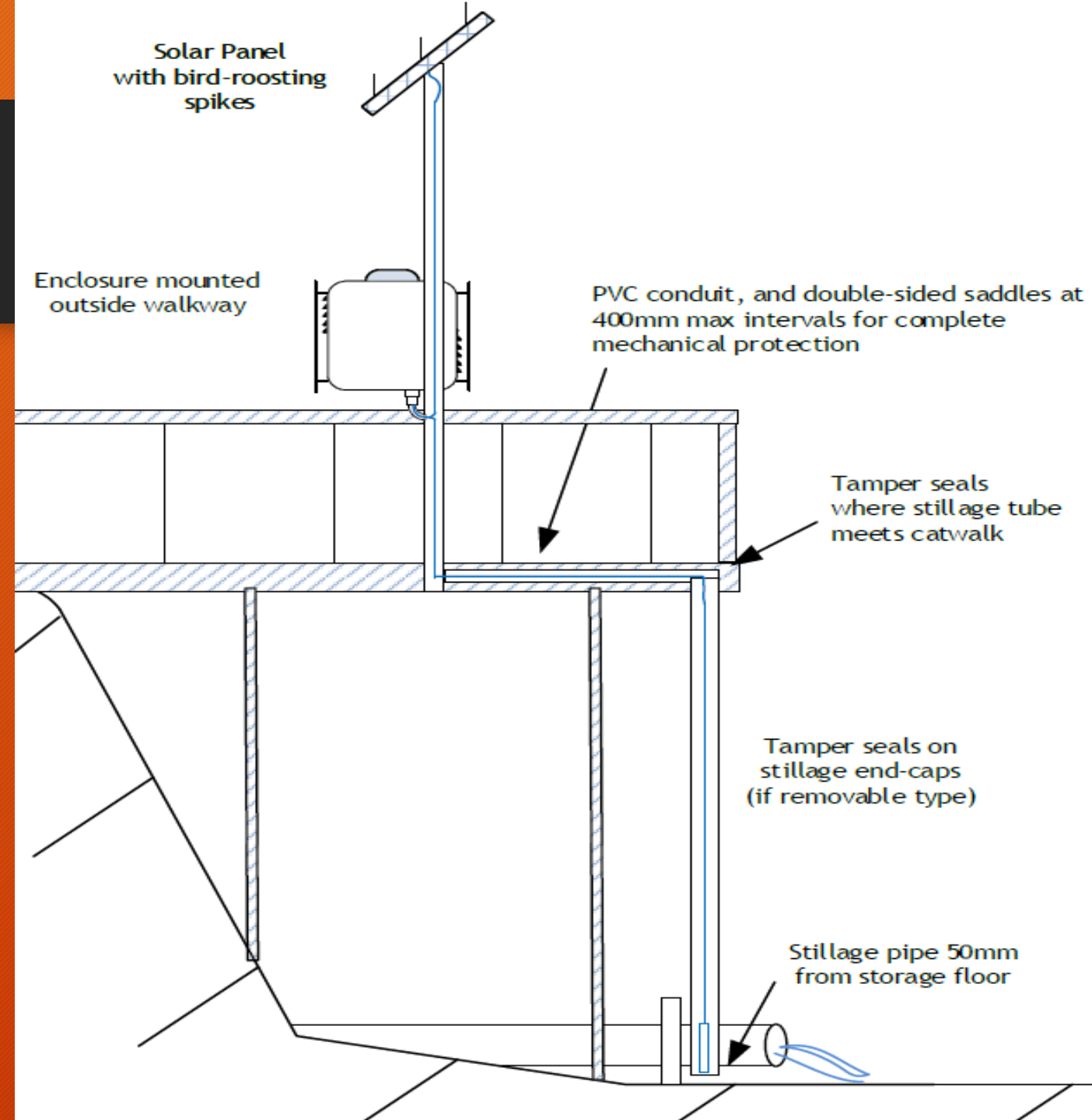
Embankment installation - Submersible



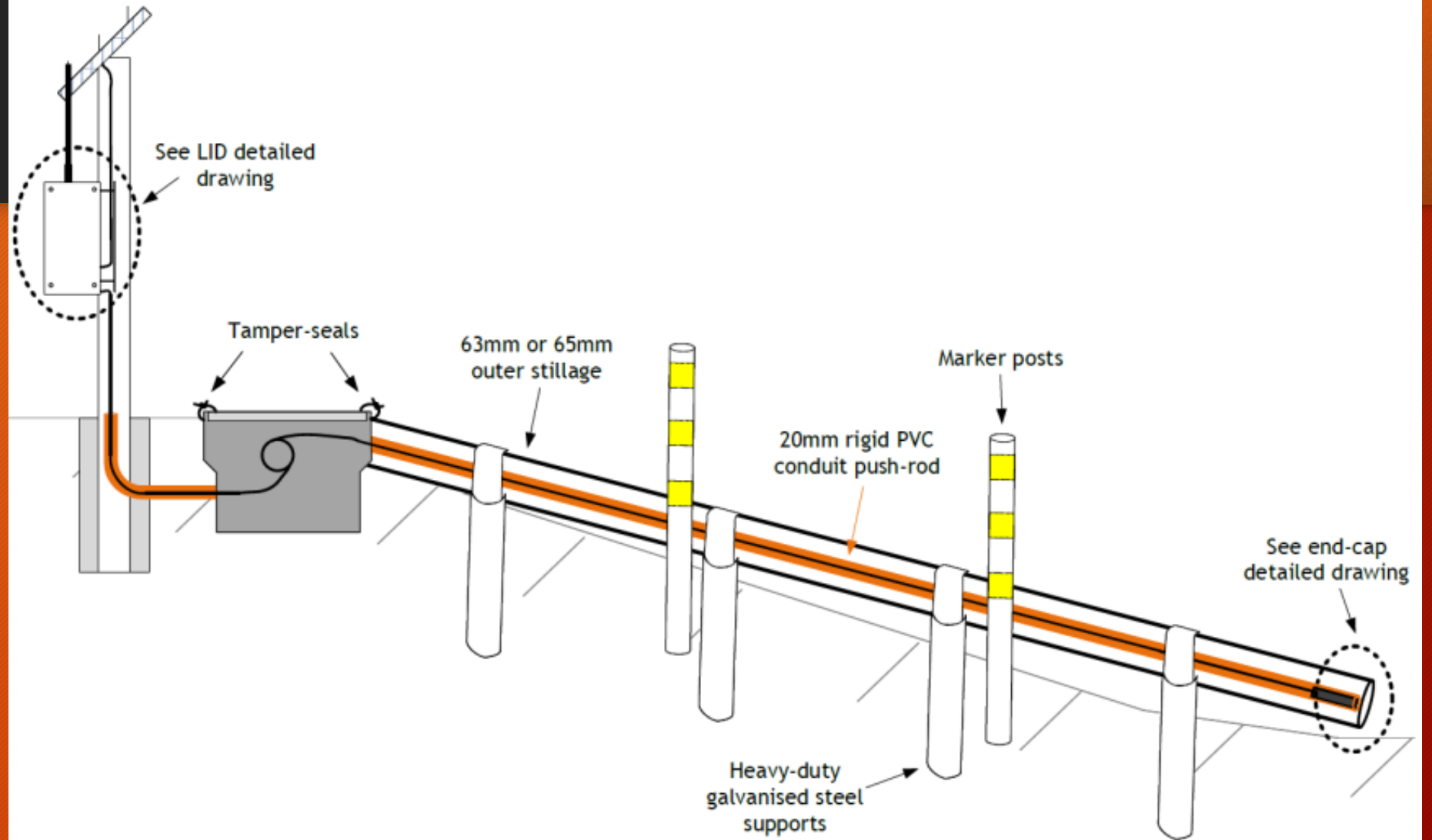
Elevated platform installation - Radar



Elevated platform installation - Submersible



Embankment installation Submersible



Secondary Metering Device



A secondary metering device is required to take water under a floodplain harvesting access licence in the following circumstances:

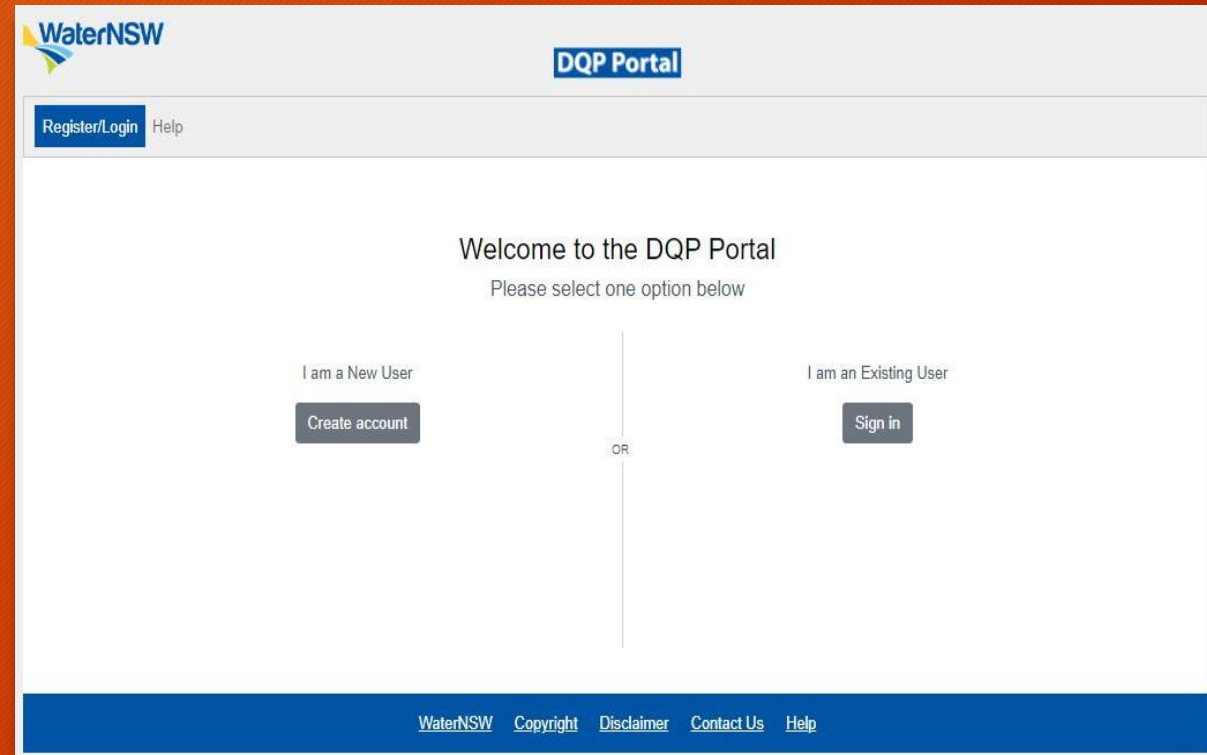
1. where the primary metering equipment is faulty and awaiting repair or
2. the storage does not need to be fitted with primary metering equipment until 12 months after floodplain harvesting access licences are issued and the landholder wishes to floodplain harvest during this 12-month period.



Register Site into DQP Portal



All information for the site from both the CSV and the Surveyor needs to be documented and put into the DQP Portal



Site Registration

Site Telemetry Registration

Record details

[Audit/Logs](#)

Registration ID

1512

DQP

Daniel Treseder

Form status

Installed

Form type

Floodplain Harvesting

Storage measurement method

Storage measurement

Installation type * 

New Storage Meter 

Workspace ID

N212-2-BufferStorage

Source ID

N212-2-BufferStorage-LID01

Site Registration

Storage details

What is the authority holder type?*

- Individual
 Organisation

Organisation name *

Australian Cotton Research Institute

Storage identifying number *

N212_2_Buffer Storage

Address *

21888 Kamilaroi Hwy

Suburb *

Narrabri

Postcode *

2390

State *

NSW

Phone number *

02 6799 2429

Customer's current email address *

bruce.etheridge@dpi.nsw.gov.au

Site Telemetry Registration

New storage device details

Storage sensor type of the storage *

Radar Device

What is the level of the depth sensor(mAHD)? *

201.48

Manufacturer & model *

Vega – VEGAPULS C 21

Location

Latitude *

-30.198645

Longitude *

149.60314



Site Telemetry Registration

LID details

LID type *

SIM

LID device *

TOIP

Is the LID being used for Telemetry? * ?

YES

NO

Additional comments

Supporting documents

Upload your supporting documents here:

Choose Files No file chosen

Max File Upload Size : 10MB

Date Of Installation *

31/12/2021 2:15 PM

Latest reading recorded in DAS ?

Meter reading at the time of installation, as shown on meter display *

1.318

LID Configuration



Mandatory Information

- Time and date stamp
- Storage level reported in mWG
- Event Codes
- Event Notes
- Battery Level
- Communications Signal Strength

Mandatory Event Codes

- LID Restart
- Meter Communications Lost/Cable Tamper
- Enclosure Tamper
- Low Battery

RADAR Storage Meters



Radar Sensors

- Mechanical Protection of cable from LID to Sensor
- Anti roosting bird spikes brackets, solar panel, LID
- RADAR head to be mechanically protected
- Brackets must be designed to support without sagging or movement
- Brackets designed so that if sensor is removed for maintenance that it will return to its original location
- RADAR Sensor configured for Waveless Action
- RADAR configured to measure distance to water surface
- RADAR Measuring area to be clear of obstructions and steel work

Submersible pressure transducers



Submersible Sensors

- Mechanical Protection of cable from LID to Sensor
- The conduit/pipe Stillwell to be UV protected and a minimum of 32mm diameter
- Sensor must be 50mm above storage floor level
- Sensor to be clear from inlet/outlet flow to prevent damage and incorrect readings
- Configured to read in mWG units

Tamper Proofing Seals



DQP Seals to be applied to all accessible points that prevent unauthorised access to:

- LID
- Sensor
- Sensor Brackets or supports
- Cable termination boxes

Tamper Proofing Seals



Surveying



Process Summary

1. Landowner engages DQP (CSV) to establish storage metering equipment
2. CSV engages registered surveyor
3. Surveyor installs benchmarks and undertakes all other necessary survey work
4. Surveyor documents all work on site
5. Surveyor enters all survey data into the DQP portal



Bench Marks



Steel posts that are painted or marked with Benchmark symbols denote storage surveyor point of reference.



Blue painted circle covers a triangle shape cut into steel work to indicate benchmark location for height of Gantry AHD

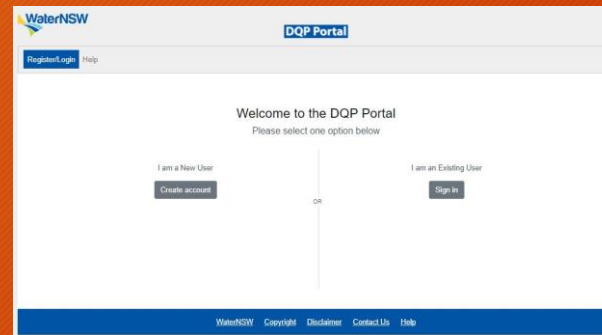


Painted triangles like this can highlight a survey reference point or benchmark to cross check other benchmark heights in the vicinity,

FPH Installation Process Summary



Site Inspection



Register Site in DQP Portal



Order Gear

FPH Installation Process Summary



Completed JHA



Install Sensor



Install LID

FPH Installation Process Summary



LID and Sensor
wiring



DAS - Check readings



Final Installation



Barriers for Installations



Phone Service

Having sufficient signal strength to be able to connect to the DAS while on site and verify data readings.



Storage full of water and no catwalk

Installation and Survey complications when working with full or partially full storages.

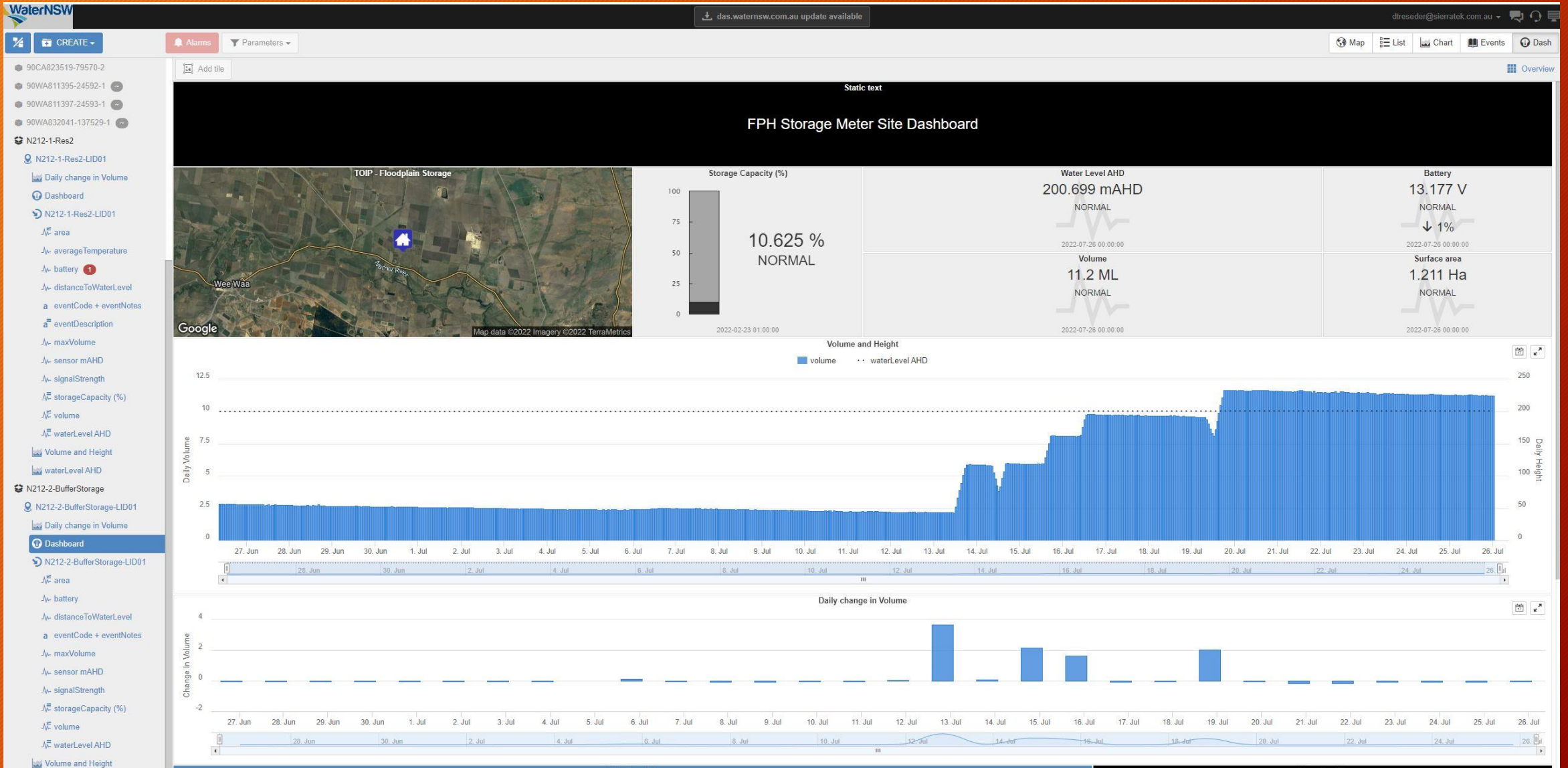
Installing equipment when there is no supporting structure.



Supply of materials/sensors

Due to the impacts of the corona virus, LID components and Sensors are taking considerably longer to procure.

DAS - Dashboard



DAS - Dashboard

