

Proposed Wastewater Treatment Scheme



Tahimana Stagecoach Road

Reference No.6425

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Daily Design Flow :

Input Design Parameters		
Qave	m³	73.3
Qpeak	m³	91.658
Dwellings		
Occupancy	People	252.5
Flow Allowance	L/Person/Day	165
Dwellings		101
DWPF		2
PWWWF		0.1

Note 1 - Occupancy totals from Engineer

Mains Power Supply:

415 VAC
3 phase power
50 Hz

Note: Mains Power by others. Plant motors are a combination of single phase and three phase.

Design Basis

Tahimana Stagecoach Road Subdivision is a 101 Lot residential subdivision located at Stagecoach Road, Nelson. The wastewater scheme shall comprise individual STEP Tanks and a liquid only sewer (LOS) network from the residential lots to an AdvanTex WWTP. Treated effluent shall be discharged via a sub-surface drip irrigation system. All wastewater shall be domestic in nature derived from residential houses.

System Description:

Collection System	= Liquid Only Sewer
Primary Treatment	= 101 x 4,000 L Prelos Processor Tanks (STEP)
Pre-Anoxic Treatment	= 2 x 23,000 L Pre-Anoxic Tank
Stage 1 Process:	
Secondary Treatment	= 4 x 23,000 L Recirculation Tank
AdvanTex	= 12 x AX100 Packed Bed Filters
Stage 2 Process:	
Post-Anoxic Treatment	= 4 x 23,000 L Post-Anoxic Tank
Secondary Treatment	= 1 x 23,000 L Recirculation Tank
AdvanTex	= 3 x AX100 Packed Bed Filters
Treated Effluent Tank	= 2 x 23,000 L Tank + Pump Tank (24 hrs storage)
Land Treatment	= 45,830 m² Pressure Compensating Drip
Alkalinity Dosing	= 1 x 23,000L Alkalinity Tank (magnesium hydroxide)
Carbon Dosing	= 1000 L IBC (sucrose)
TCOM Controls	

Treatment Limits:

Final Effluent Quality			
		90%ile (less than)	maximum (less than)
cBOD ₅	mg/L	20	30
TSS	mg/L	30	45
TN	mg/L	34	50
NH ₃	mg/L	-	-
TP	mg/L	-	-
E.Coli	cfu/100 mL	-	-

Maximum Influent Strength Influent:

Raw Influent Strength (Maximum Dry Weather)		
BOD ₅	mg/L	515
TSS	mg/L	576
TKN	mg/L	94
NH ₃	mg/L	47
TP	mg/L	18
FOG	mg/L	165
Alkalinity as CaCO ₃	mg/L	-

Project Notes

1. An Operation & Maintenance Manual is to be provided by InnoFlow.
2. All property/user occupants are to follow the operation and Maintenance/Homeowner Manual recommendations
3. InnoFlow assume incoming wastes will not contain high concentrations of toxic substances that may adversely affect the performance of the biological processes required for the system to operate, these typically include but are not limited to:
 - Chlorine (pool and spa pool overflow)
 - Waste Dairy Products
 - Quaternary Ammonium Compounds (disinfectants, cleaning products)
 - Formaldehyde (disinfectant, chemical toilet treatment)
 - Dichlorobenzene (urinal tablets, sanitisers)
 - Petrochemicals (waste oil, diesel, turpentine etc)
 - Pharmaceuticals (drugs and or medicines)
4. In addition to the above, Water softener brine discharge is strongly prohibited from being discharged into the AdvanTex advanced treatment system. Failure to adhere to this policy will void manufacturers warranty.
5. All installations are to follow manufacturer's instructions and recommendations for tank installation and/or watertight testing.
6. Once a facility is placed into operation, the flows and waste strengths to the facility should be monitored. If flow or any of the influent waste strengths exceed those listed in the design parameters, measures should be taken to reduce these parameters to those listed on the plan set. Otherwise additional treatment capacity and plant expansion will be necessary.

Recommended Recirculation Timer Settings:

Stage 1 Process

Recirc ratio 4:1 Qave, 4:1 Qpeak

PF(50Hz)752034Pumps

R ON: 1.5 min

R OFF 6.00 min

R Ovr ON 1.5 min

R Ovr OFF 4.50 min

Stage 2 Process

Recirc ratio 2:1 Qave, 2:1 Qpeak

PF(50Hz)752034 Pumps

R ON: 1.5 min

R OFF 4.75 min

R Ovr ON 1.5 min

R Ovr OFF 3.50 min

Recommended Filtrate Return Timer Settings:

FR ON: 5.0 min

FR OFF 6.8min

Recommended TET Timer Settings:

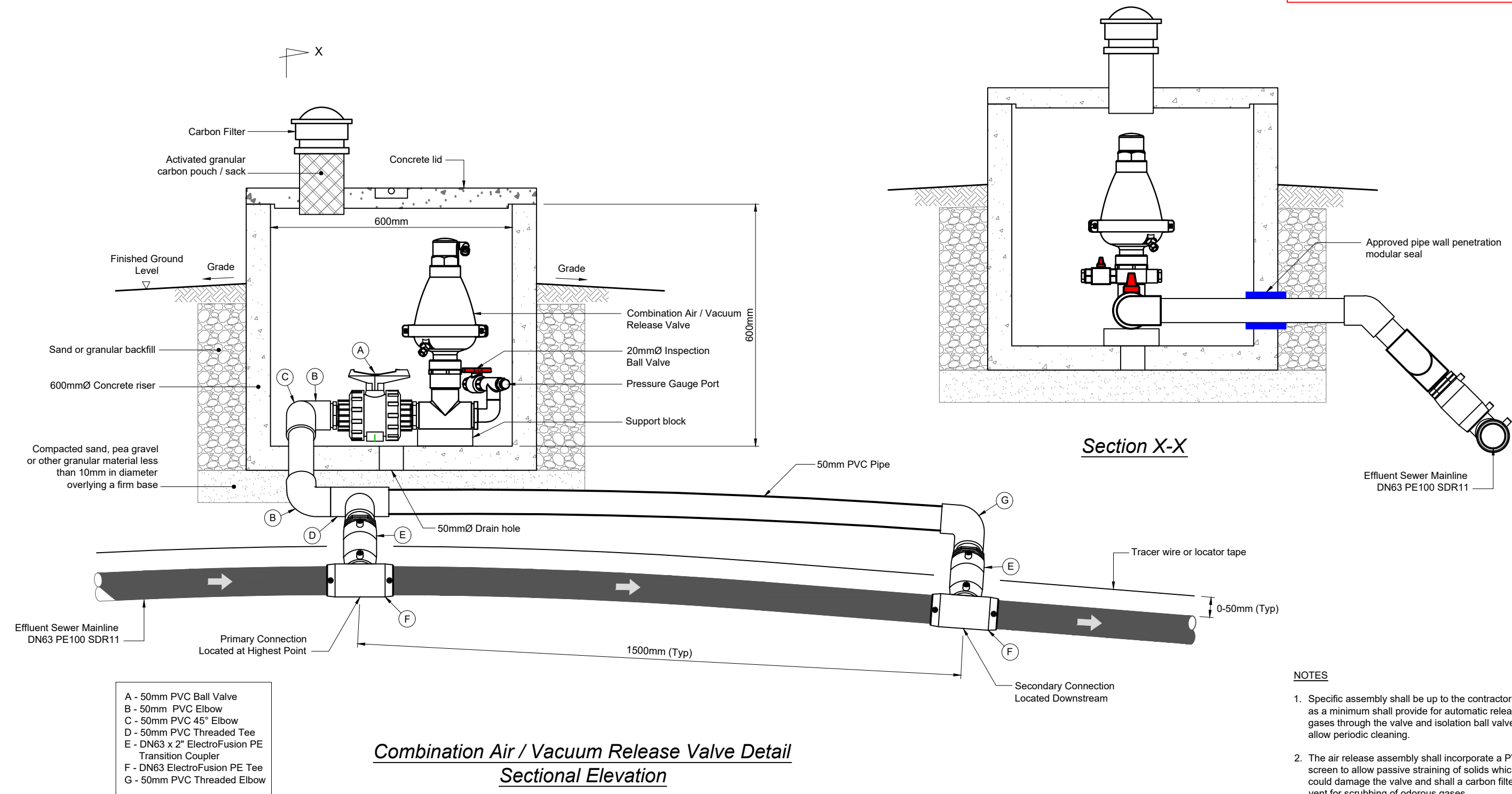
TET ON: 30 min

TET OFF 15 min

TET Ovr ON 30 min

TET Ovr OFF 10min

26th May 2026



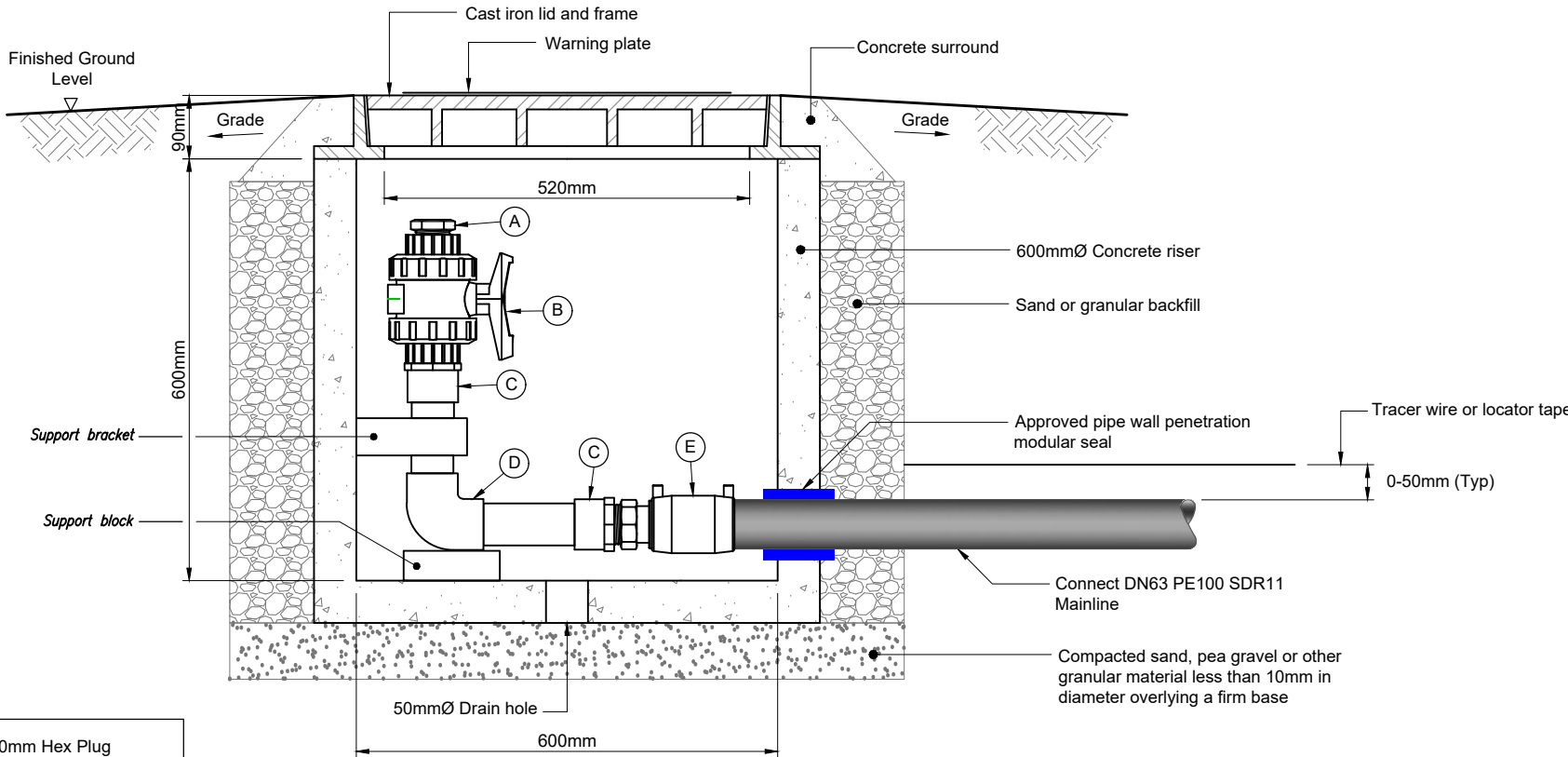
- NOTES
1. Specific assembly shall be up to the contractor, and as a minimum shall provide for automatic release of gases through the valve and isolation ball valves to allow periodic cleaning.
 2. The air release assembly shall incorporate a PVC screen to allow passive straining of solids which could damage the valve and shall a carbon filtered vent for scrubbing of odorous gases.
 3. Tapping Band or approved equivalent take-off, sized at mainline pipe outside diameter, reduced on take-off end to 50mm. Point of takeoff to be at highest point in mainline, and at a point 1.5m down slope toward treatment plant end of mainline.

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			SCALE N.T.S	CHECKED								
-	-	-		DESIGNED								
REV.	DESCRIPTION	DATE		STATUS Design							TITLE Typical Air Vacuum Valve Detail	REVISION -

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STEP EFFLUENT SEWER
CLEANOUT PORT
DO NOT BURY
NON-VEHICULAR

Typical Cleanout Port
Warning Plate
NTS



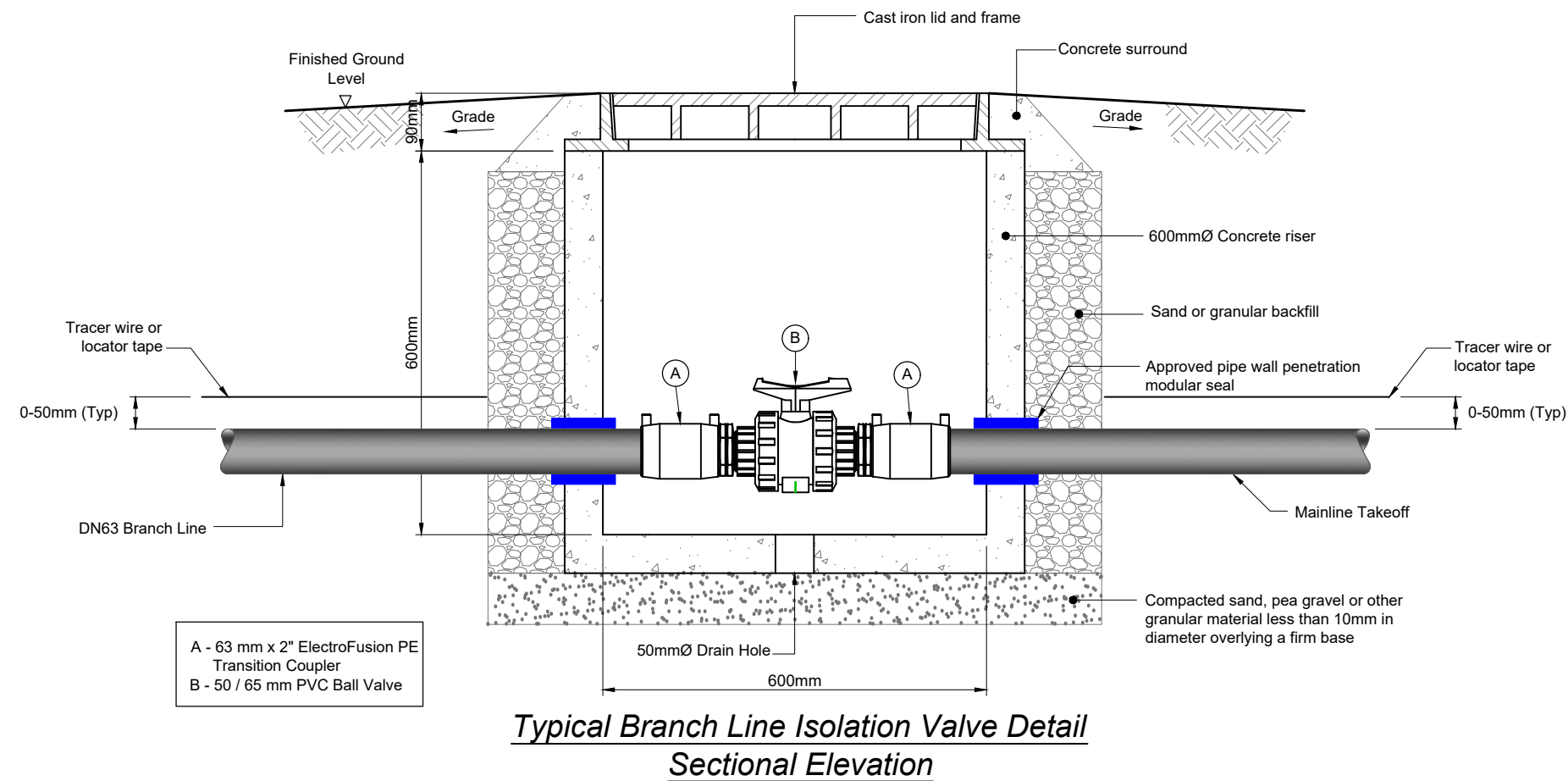
A - 40 / 50mm Hex Plug
B - 50 / 63mm PVC Ball Valve
C - 50mm Valve Socket
D - 50mm PVC Elbow
E - 63mm x 2" ElectroFusion PE
Free Nut Transition Coupler

Typical 50mm Cleanout Port Detail
Sectional Elevation

NOTES

1. All fittings and valves to be PN16.

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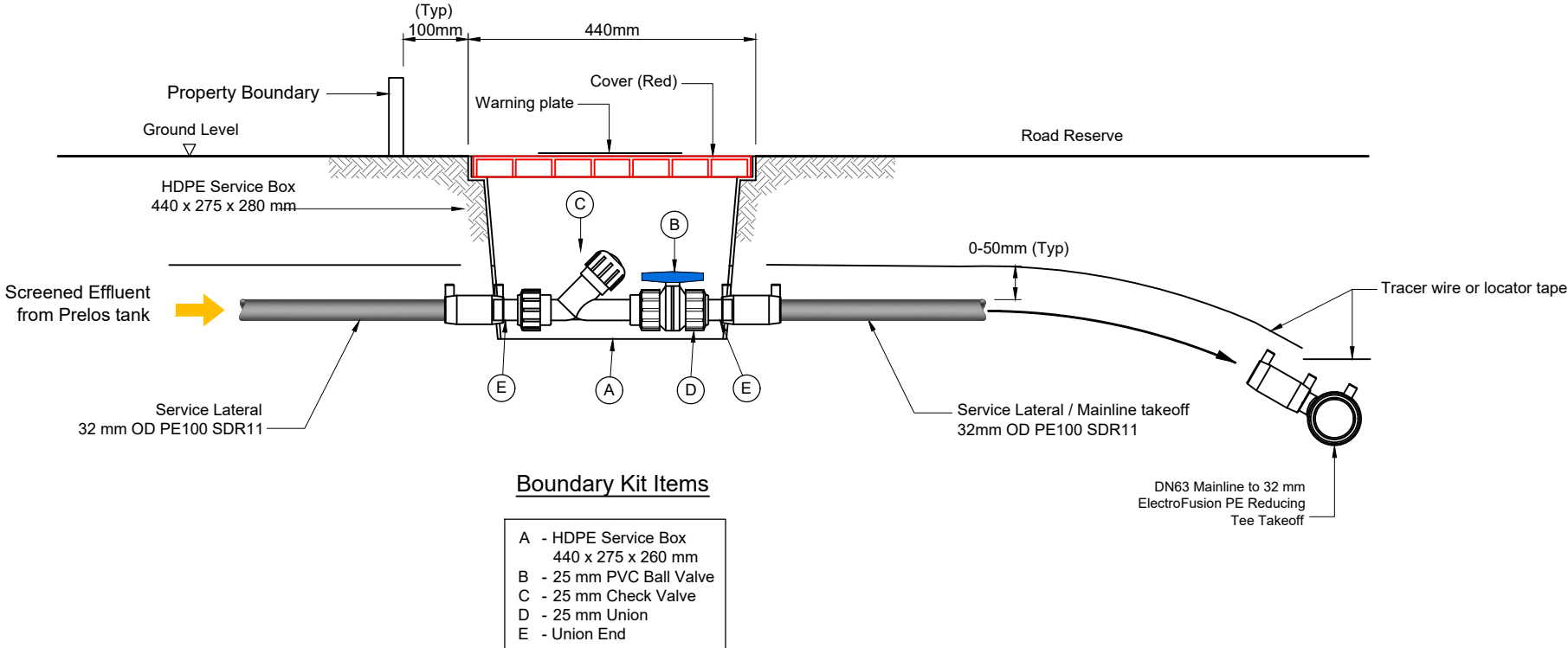
NOTES

1. Branch Line Isolation valves shall comprise a mainline takeoff.
2. All fittings and valves to be PN16.

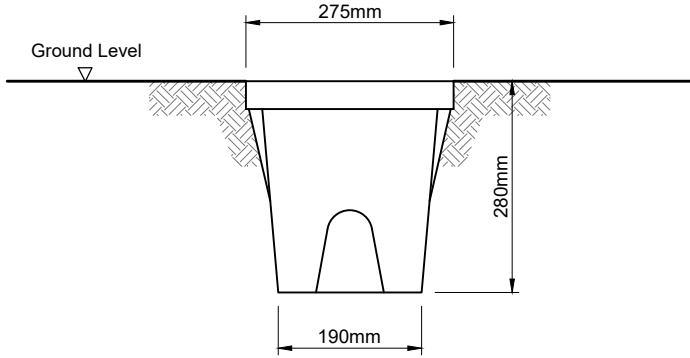
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STEP EFFLUENT SEWER
CONTROL VALVE
DO NOT BURY
NON-VEHICULAR

Typical Service Connection
Warning Plate
NTS



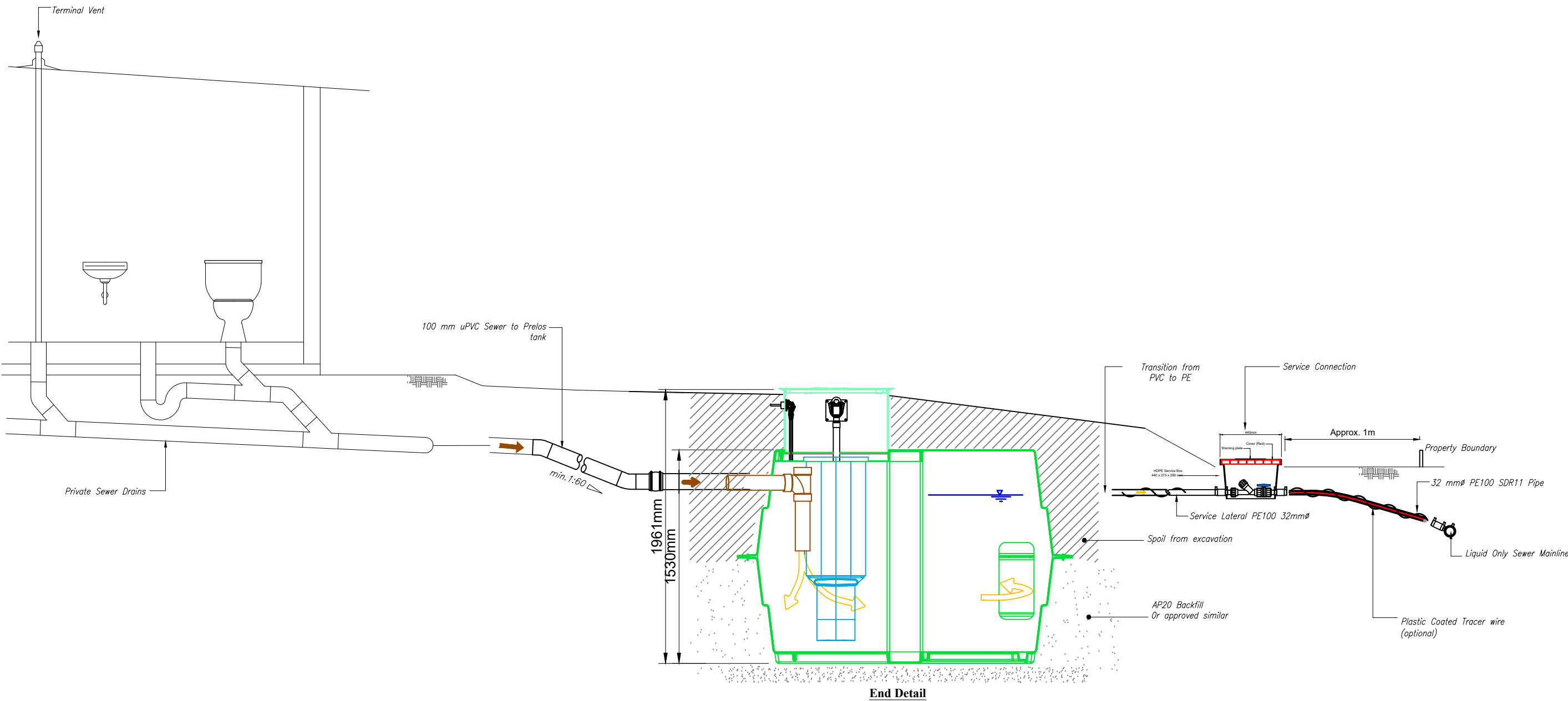
Typical On-lot Service Lateral and Service Connection
Sectional Elevation



Side Elevation
HDPE Service Box

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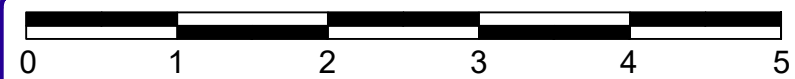
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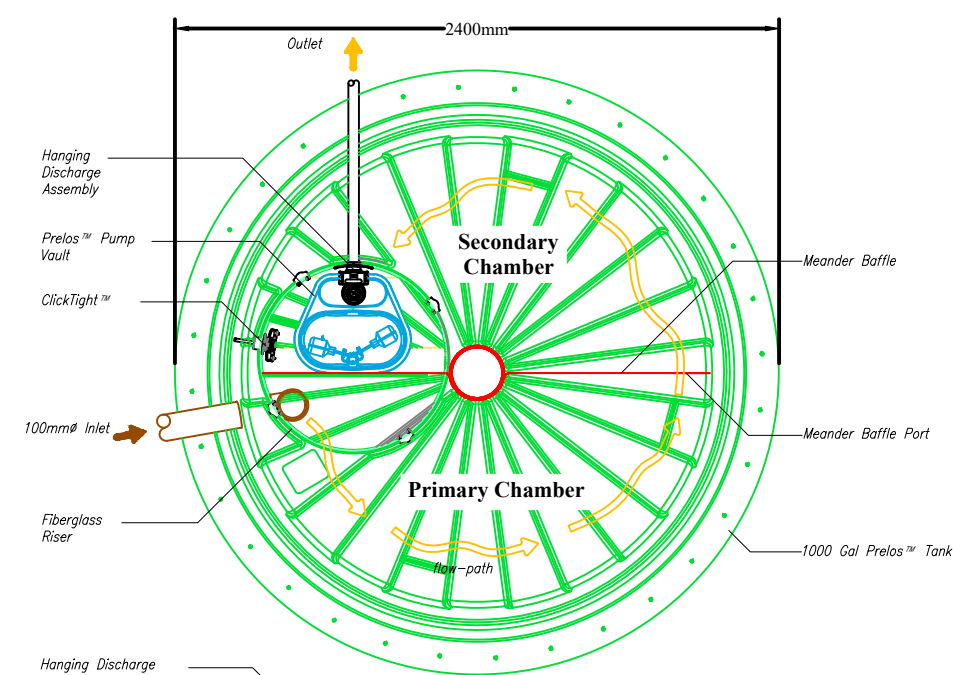
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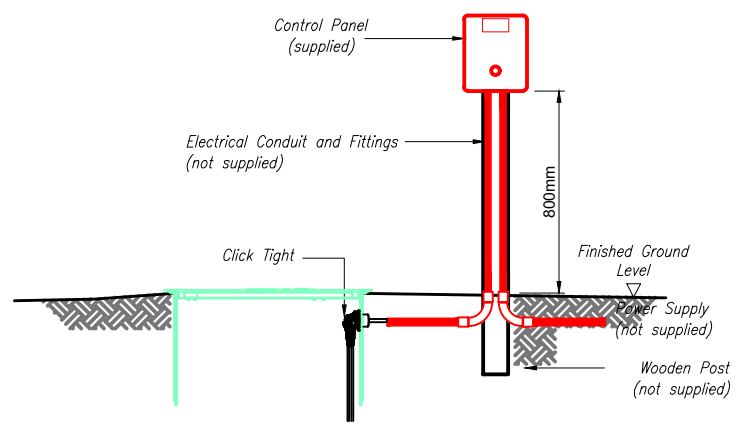


General Notes:

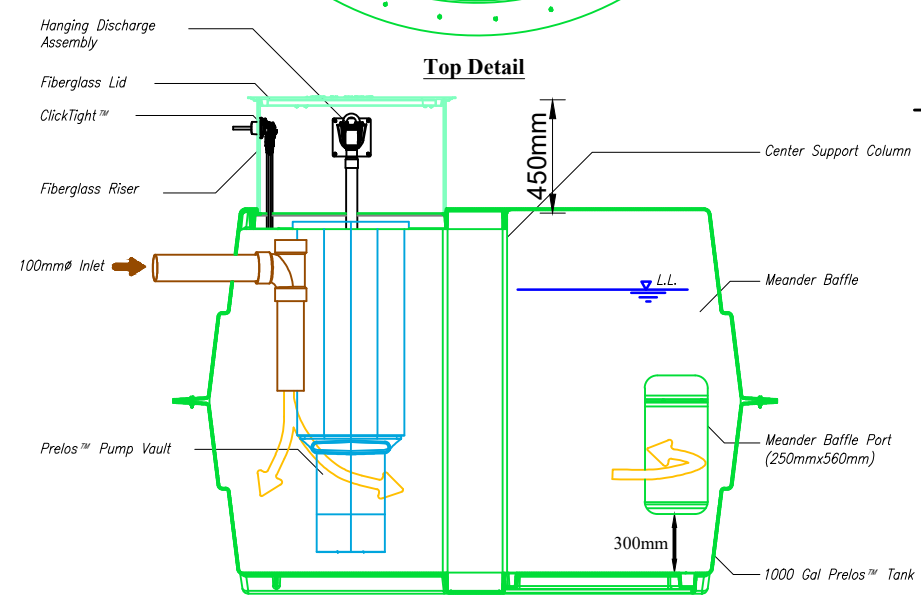
Tank Volumes: Total Volume: 4,630L ±
Operating Volume: 3,808L ± @ 1200mm
Unit volume at typical Operating Depth : 2.98L/mm±

Installation: Installation, bedding, compaction, etc., shall be in "strict" compliance with the manufacturers standards and local rules and or guidelines. All tanks shall be set level on a minimum 100mm thick compacted sand or approved granular bedding overlying a firm uniform base. The base shall be stable and uniform in order to ensure equal bearing across the tank bottom. Installations with 450mm or less of ground cover may require additional buoyancy considerations as described in the manufacturers instructions. A minimum cover of 300mm is required over the tank in areas subject to occasional light wheel loads.

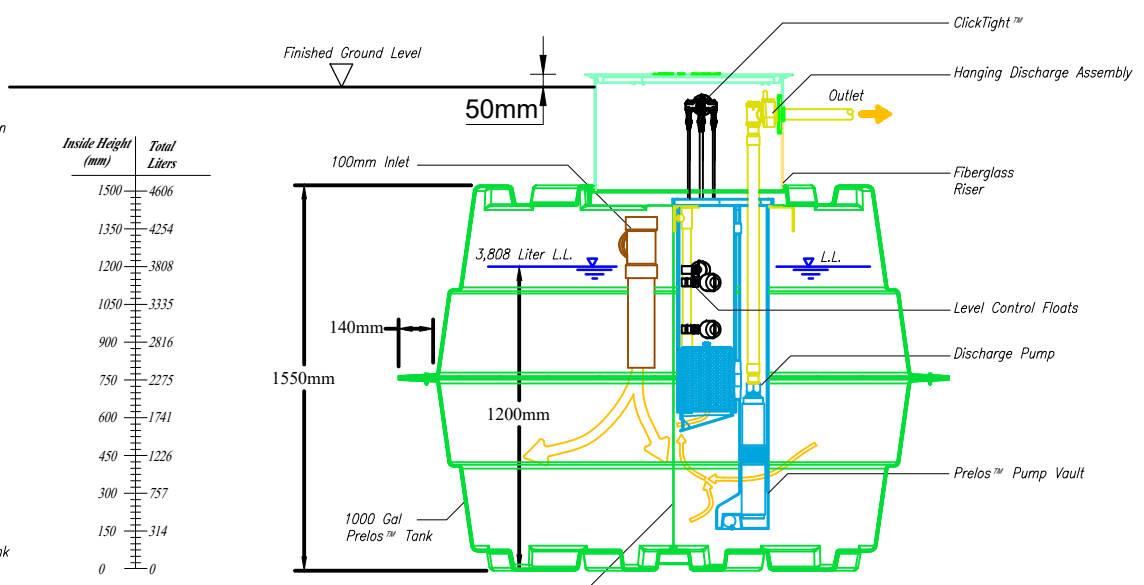
Test: Tanks shall be tested and certified watertight per manufacturers recommendations and or any prevailing rules or guidelines, whichever is more restrictive.



Detail 'A'
Elevation



Side Detail



End Detail

Inside Height (mm)	Total Liters
1500	4606
1350	4254
1200	3808
1050	3335
900	2816
750	2275
600	1741
450	1226
300	757
150	314
0	0

NOTES

In all cases, the recommendations described in the Orenco Systems Inc. installation instructions shall take precedent (Document Number NIM-EPS-2 Rev.4.0 02/20)

1. Bedding

At least 100mm thick of compacted sand, pea gravel or other granular material less than 10mm in diameter overlying a firm, compacted and uniform base.

Do not set the tank directly on boulders or rock edges. If sand bedding is used, lightly moisten the sand to compact it, but do not saturate it, or the underlying soil may become unstable.

2. Partial Backfill

Backfill material should have a uniform gradation and be free of stones larger than 25mm diameter. 10mm or smaller crushed rock or pea gravel is required. Do not use sand. If use flowable concrete material instead of granular material, the layering and compacting steps are not necessary.

Place a 400mm layer of backfill, using a mechanical compactor, thoroughly compact the fill, especially in the haunch zone, to minimize settlement and to provide support for the tank walls.

3. Final Backfill and Grading

Complete the remaining backfill and compaction above the midseam flange to the finish grade in maximum 600mm layers. Place the backfill material gently if you poured a concrete collar that day.

Flowable concrete material may be used above the midseam for the backfill, as can native soil if it does not contain rocks.

Make sure the risers extend a minimum of 75mm above the original grade to allow for settling and to ensure drainage away from risers.

Backfill and compact around the inlet and outlet fittings by hand.

4. Determine whether an Antibuoyancy Collar is needed

The requirement for an antibuoyancy collar shall be at the sole discretion of the installation contractor.

If groundwater is present or if there is any other condition that is likely to cause the tank to become buoyant, you may need to pour a reinforced concrete concrete collar around the tank as supplemental ballast.

If backfill material used is cohesive (cohesive soils include clayey silt, sandy clay, silty clay, clay and organic clay). supplemental ballast may not be necessary.

If the backfill material used is noncohesive (soils including gravel, sand, or silt with little or no clay content) no supplemental ballast is necessary as long as the minimum depth of bury is 800 mm or greater. For tanks set more shallowly, you'll need to add a concrete collar.

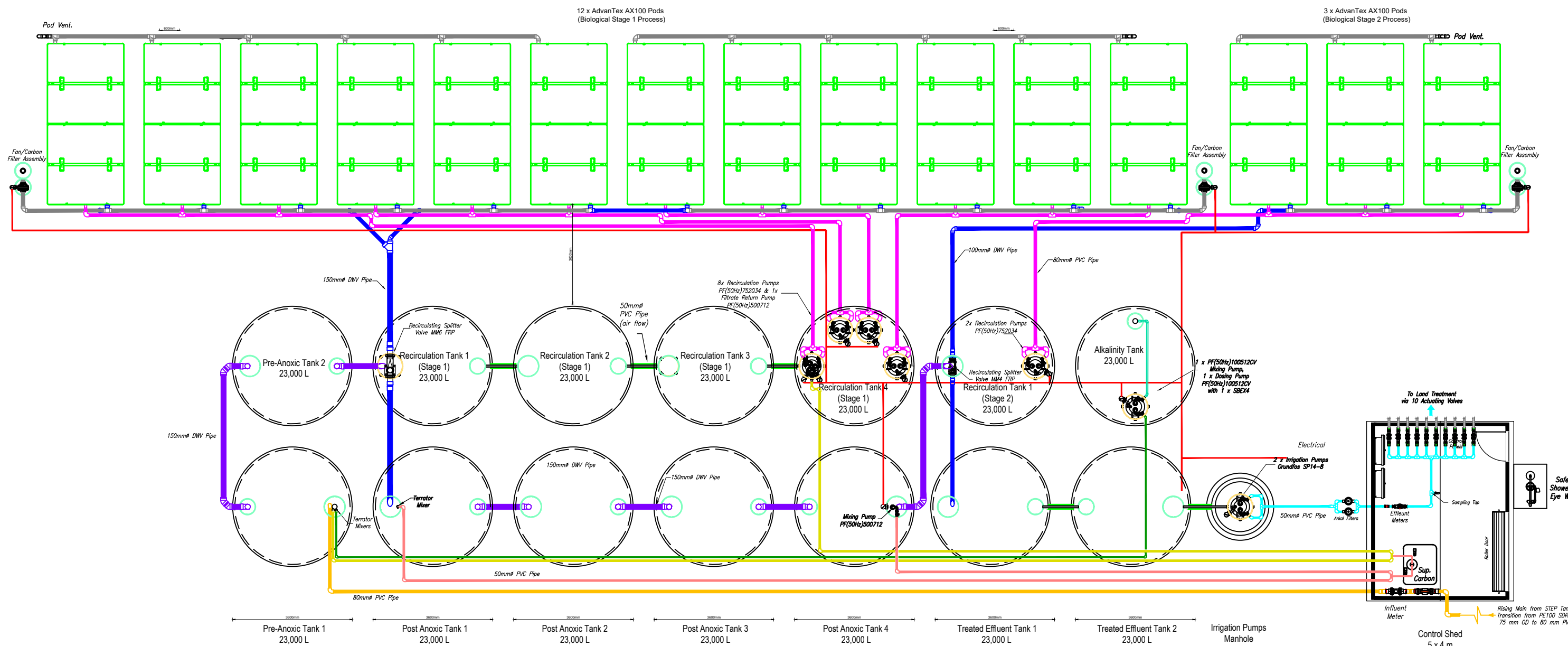
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Plan

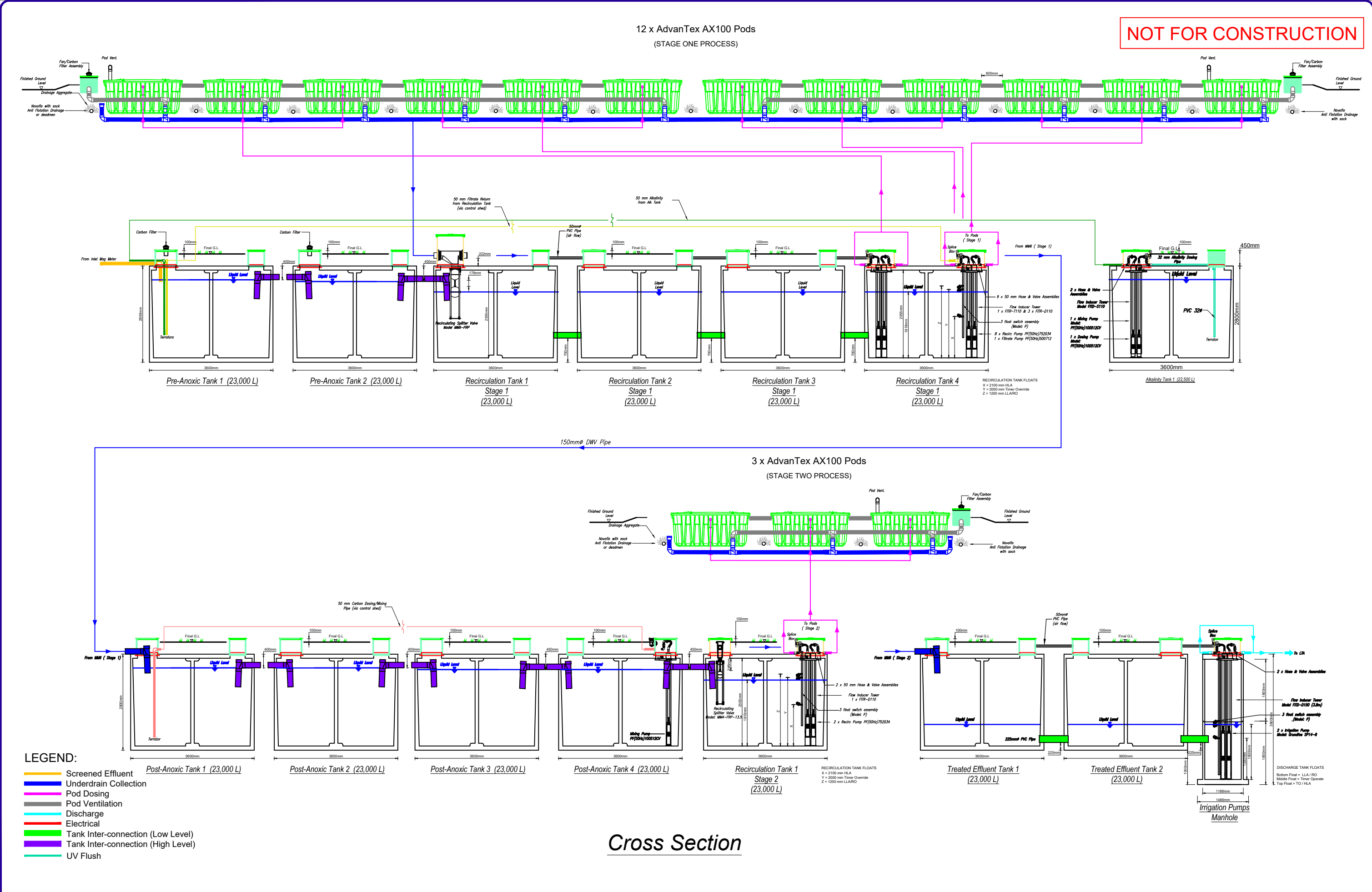
LEGEND:

- Screened Effluent
- Underdrain Collection
- Pod Dosing
- Pod Ventilation
- Discharge
- Electrical
- Tank Inter-connection (Low Level)
- Tank Inter-connection (High Level)
- UV Flush



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																TITLE AdvanTex Wastewater Treatment Plant Plan	REVISION -



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			SCALE	DESIGNED							STATUS Design				TITLE AdvanTex Wastewater Treatment Plant Cross Section	REVISION -
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CLIENT

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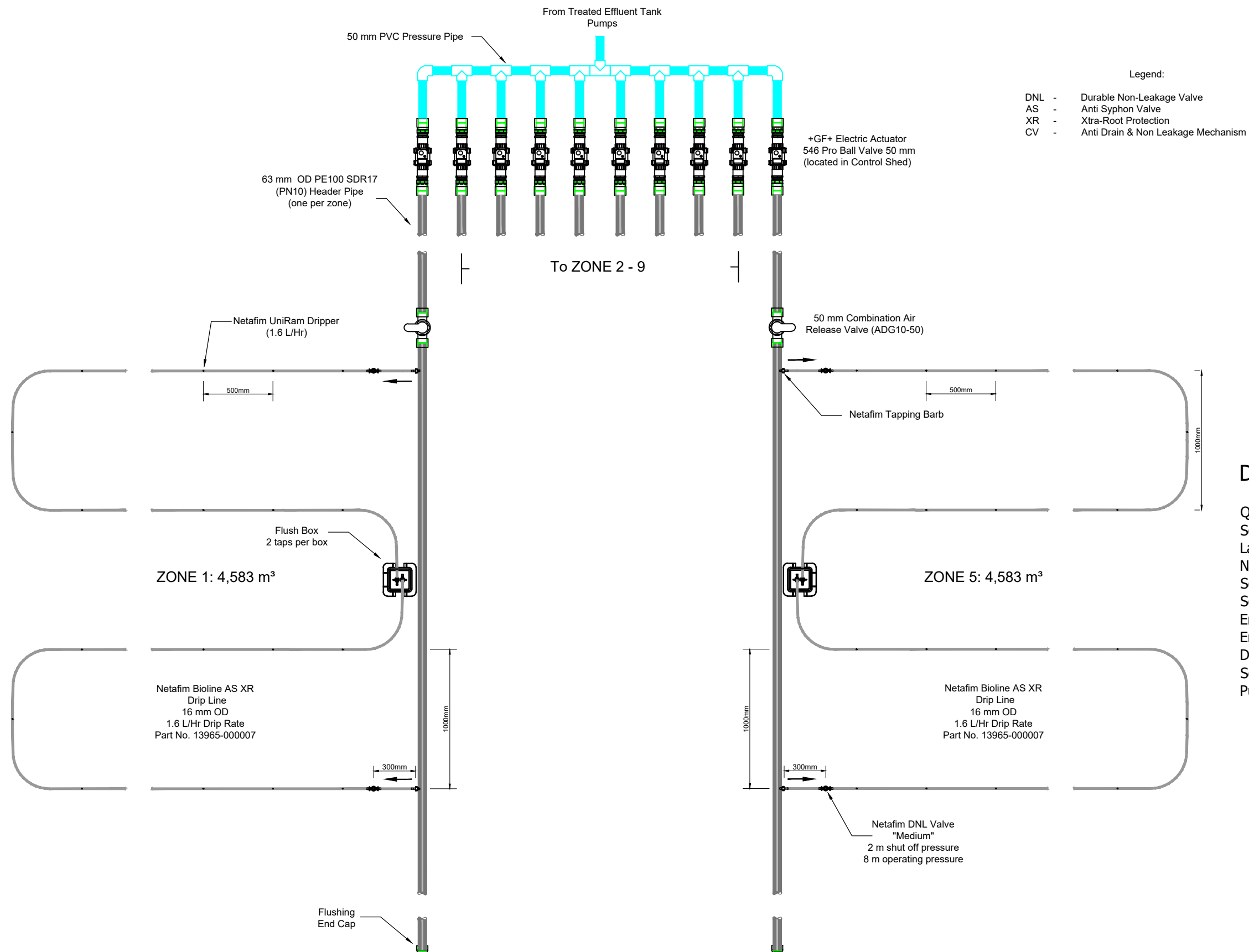
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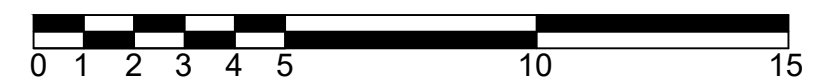
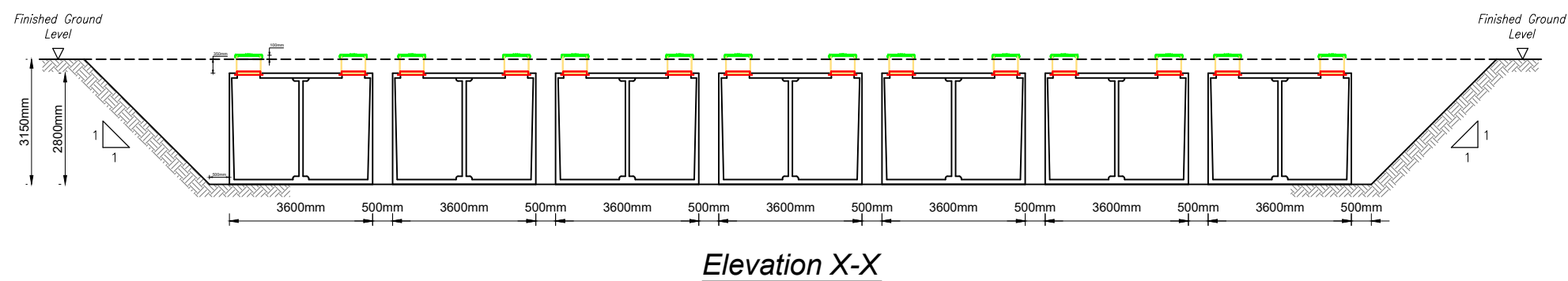
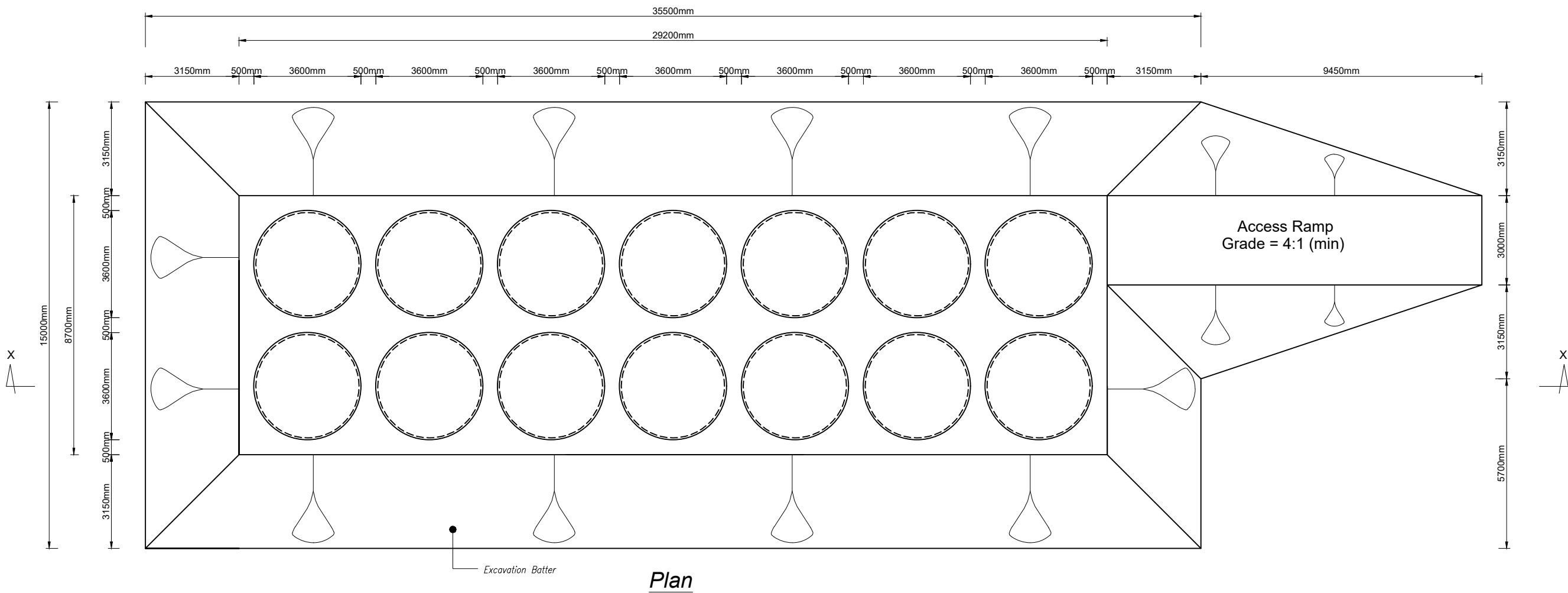


Design Parameters:

Qpeak	=	91,658 LPD
Soil Loading Rate	=	2 mm/day
Land Treatment Area	=	45,829 m ²
Number of Zones	=	10
Sector Size	=	4,583 m ²
Sector Sequencing	=	Electric Actuating Ball Valves
Emitter flow rate	=	1.0 L/hr
Emitter spacing	=	0.5 m
Dripline spacing	=	1.0 m
Sector flow rate	=	9,165 L/hr
Pump Duty	=	2.6 L/sec @ 25 m TDH

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			DESIGNED						
-	-		STATUS Design						
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