

Hydraulic Services

PROPOSED EXTENSION WOOD WASTE PROCESSING BUILDING ANL TEA GARDENS, PINDIMAR ROAD, TEA GARDENS, NSW 2324

About Marline Engineering Newcastle

At Marline, we take a comprehensive approach when designing your new development.

With in-house electrical, mechanical and hydraulic engineers, Marline Engineering makes your engineering design needs a breeze. We are able to adjust, implement and create designs on AutoCAD and REVIT which makes it easy for contractors and builders to build our designs.

We advise you on the most affordable, practical and effective solutions and systems based on the site and legal factors.

As consulting engineers, Marline has also expanded the range of services to provide a wide range of building services disciplines including Air-conditioning, Electrical, Hydraulics, Fire Protection and Lift Services.

Marline has seen a huge amount of growth in the Energy sector. We provide services that go above and beyond the standard regulatory requirements and offer unique solutions to your Section J or JV3 Alternative solution reports. We also offer a fast NABERS and BEEC certification that ensures advertising for commercial properties are fully compliant with the CBD advertising rules and regulations.

With engineering consulting experience that dates back as far as 1975, we're one of the best engineering companies in Australia, and have developed the kind of projects that residential and commercial property developers benefit from.

Our Newcastle engineering firm continues to grow, however our team prides itself on every customer receiving the kind of high quality workmanship and personalised service that our company is known for.

To accommodate the expansion and demand for engineering services within Newcastle and throughout New South Wales, Marline Engineering has almost doubled the number of highly trained employees in the last five years.

Our engineering firm currently employs ten engineers, eight technical assistants and an office administrator. As a result, we continue to be leaders amongst engineering companies in Australia, with a large portfolio and a positive attitude.

PROJECT No:
MN14834

CLIENT:
WEDGETAIL PROJECT CONSULTING

MECHANICAL - ELECTRICAL - HYDRAULIC - FIRE - ENERGY - NABERS - STORMWATER - SECTION J - BEEC

DRAWING SCHEDULE

HY-00-000	COVER SHEET
HY-00-001	LEGEND & NOTES
HY-00-002	SITE SERVICES
HY-10-001	WOOD WASTE PROCESSING BUILDING - WATER LAYOUT
HY-20-001	WOOD WASTE PROCESSING BUILDING - GROUND FLOOR - SANITARY DRAINAGE LAYOUT
HY-20-002	WOOD WASTE PROCESSING BUILDING - ROOF - DRAINAGE LAYOUT
HY-30-001	DETAILS

100% ISSUE

LINETYPES - EXISTING

	eCW	COLD WATER
	eHW	HOT WATER
	eWW	WARM WATER
	eFH	FIRE HYDRANT
	eSP	FIRE SPRINKLER
	eG	GAS
	eNP	NON POTABLE
	eRW	RAINWATER REUSE
	eS	SANITARY
	eVP	VENT PIPE OFFSET
	eTW	TRADE WASTE
	eSW	STORMWATER
	eDP	STORMWATER TO RWT
	eOF	STORMWATER OVERFLOW
	eSS	SUBSOIL DRAIN
		DISUSE PIPE

LINETYPES - NEW

	COLD WATER
	HOT WATER
	HOT WATER FLOW
	HOT WATER RETURN
	WARM WATER
	TEMPERED WATER
	HEAT TRACE
	FIRE HYDRANT
	FIRE SPRINKLER
	GAS
	NON POTABLE
	RAINWATER REUSE
	SANITARY
	VENT PIPE OFFSET
	TRADE WASTE
	PUMP DISCHARGE
	STORMWATER
	STORMWATER TO RWT
	BALCONY DRAIN TO STORMWATER
	RECYCLED/RECLAIMED WATER
	STORMWATER OVERFLOW
	SUBSOIL DRAIN

SYMBOLS - OTHER

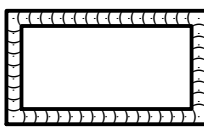
	PIPEWORK CAP
	EXPANSION LOOP
	PIPEWORK PENETRATION TEE
	PIPEWORK PENETRATION RISER
	PIPEWORK PENETRATION DROPPER
	PIPEWORK DROP DOWN
	FIXTURE UNITS
	LOADING UNITS
	MEGA JOULES
	LITRES/SECOND
	FLOW ARROW
	PIPEWORK RISES
	PIPEWORK DROPS
	PIPEWORK RISES & DROPS
	SURFACE LEVEL
	PIPEWORK REDUCER

SYMBOLS - WATER

	ISOLATION VALVE
	BALANCING VALVE
	CHECK VALVE
	REFLUX VALVE IN SHAFT WITH INSPECTION OPENING
	WATER VALVE IN PATH BOX
	CIRCULATING PUMP
	DUAL CHECK VALVES
	REDUCES PRESSURE ZONE DEVICE
	THERMOSTATIC MIXING VALVE
	TEMPERING VALVE
	THERMOSTATIC MIXING VALVE IN WALL BOX
	TEMPERING VALVE IN WALL BOX
	MAIN WATER METER
	PRIVATE WATER METER
	MICRON FILTER
	HOT WATER STORAGE UNIT

SYMBOLS - SANITARY

	AIR ADMITTANCE VALVE
	FLOOR WASTE
	BASKET FLOOR WASTE
	CHROME PLATED BRASS SCREWED CAP
	SEALED FLOOR WASTE
	OVERFLOW GULLY
	CLEAR OUT/INSPECTION OPENING
	SANITARY FIXTURE
	INSPECTION SHAFT
	INSPECTION SHAFT WITH BOUNDARY TRAP
	INDUCT PIPE MICA FLAP
	TUNDISH ON WALL
	TUNDISH INWALL
	SEWER ACCESS CHAMBER
	SEWER MAINTENANCE SHAFT
	PLASTER TRAP
	SWIVEL EXPANSION JOINT
	PIPEWORK CAST IN BEAM



SYMBOLS - STORMWATER

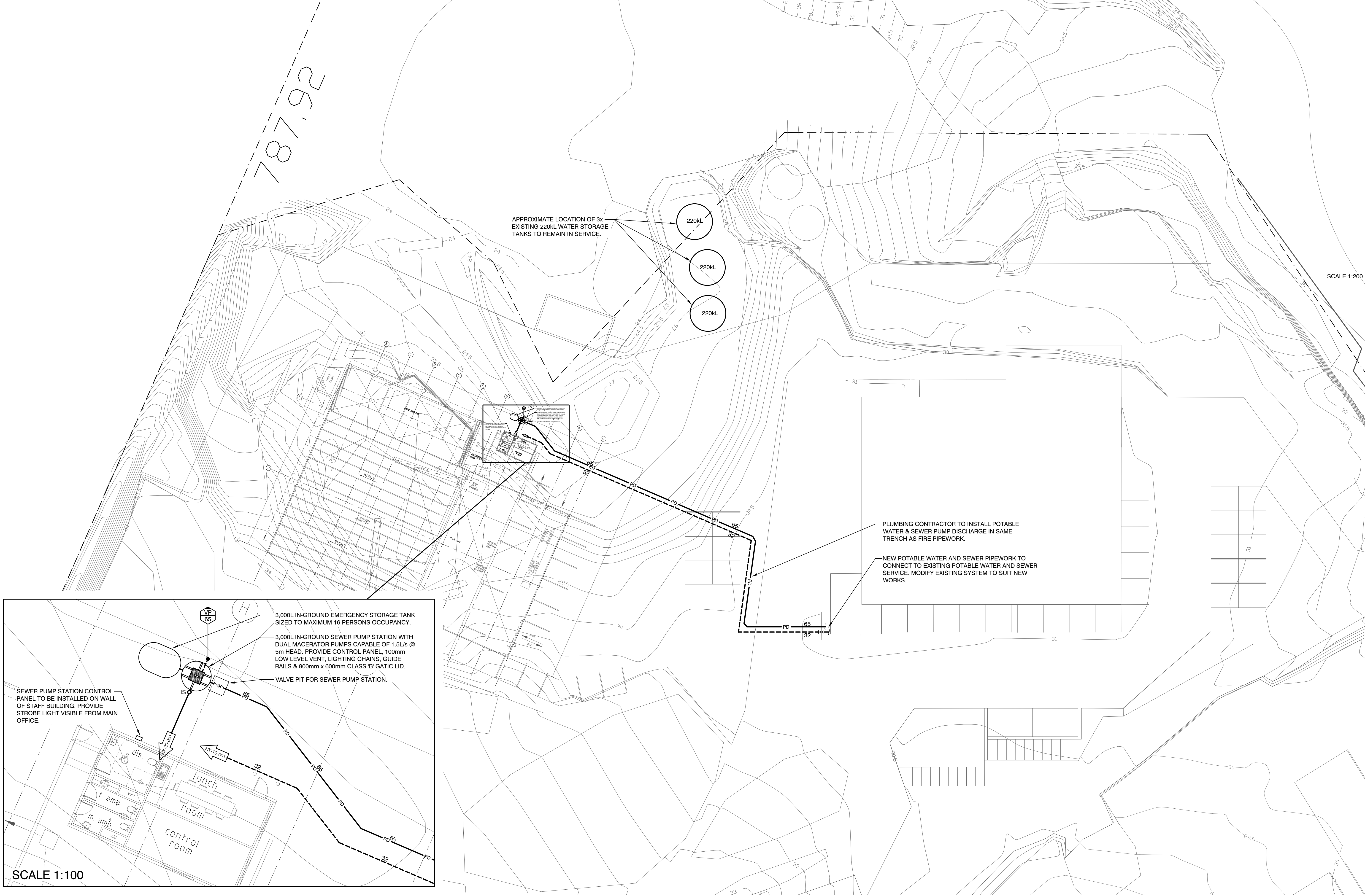
	GRATED DRAIN
	GRATED PIT
	SEALED PIT
	DOWNPIPE WITH SPREADER

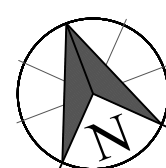
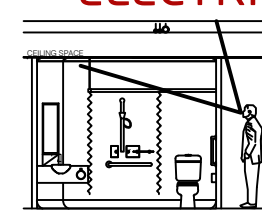
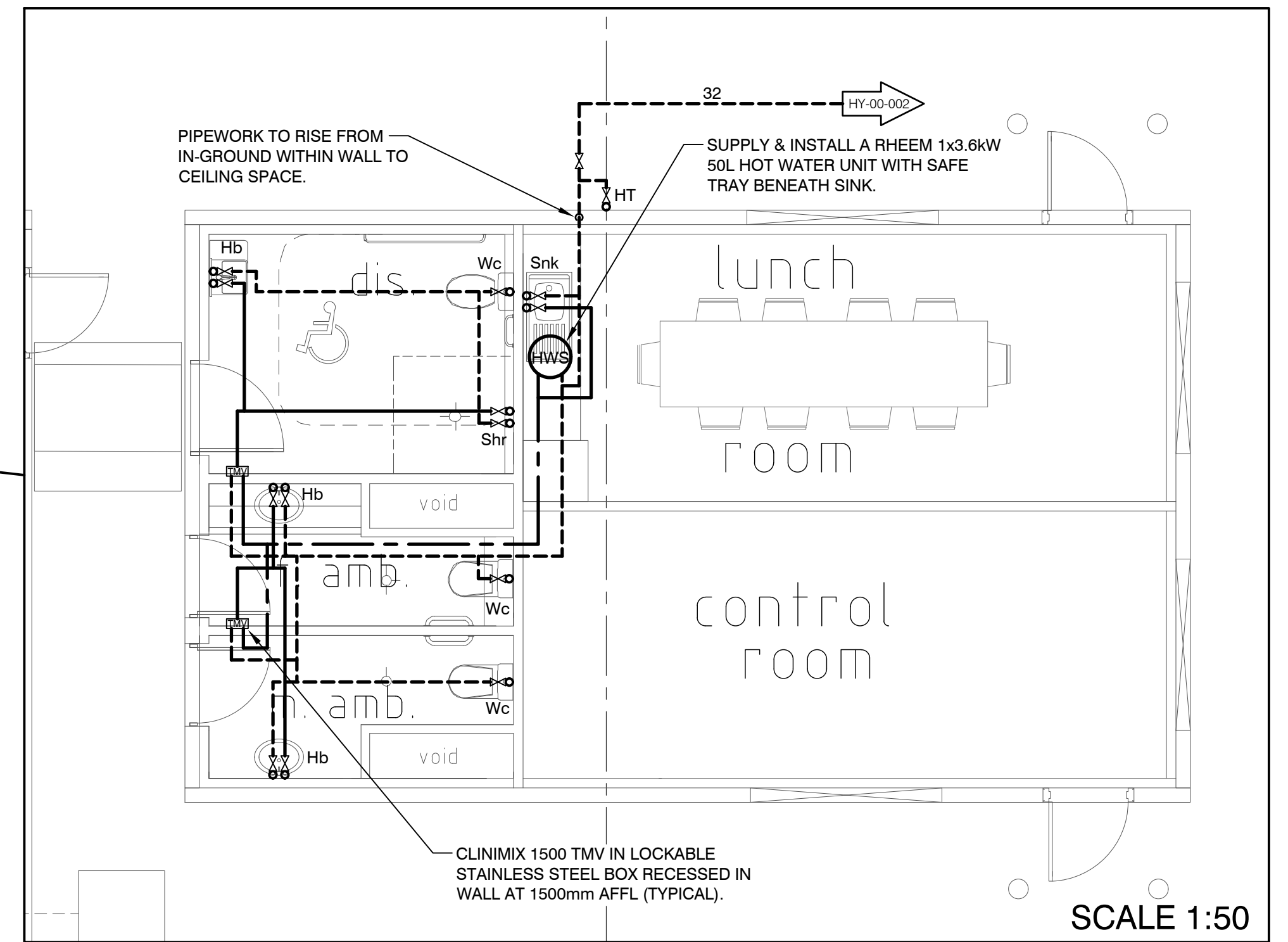
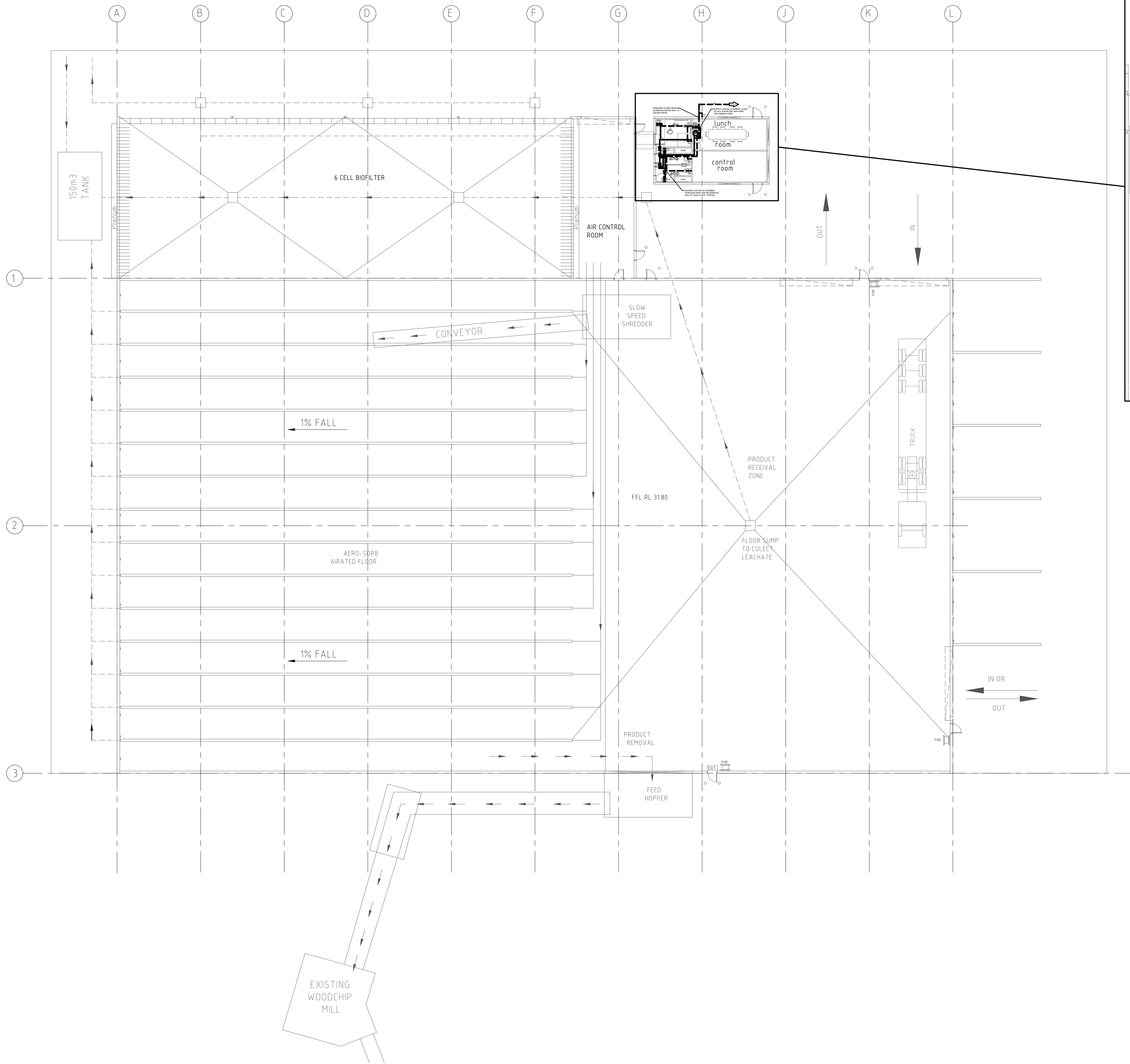
ABBREVIATIONS

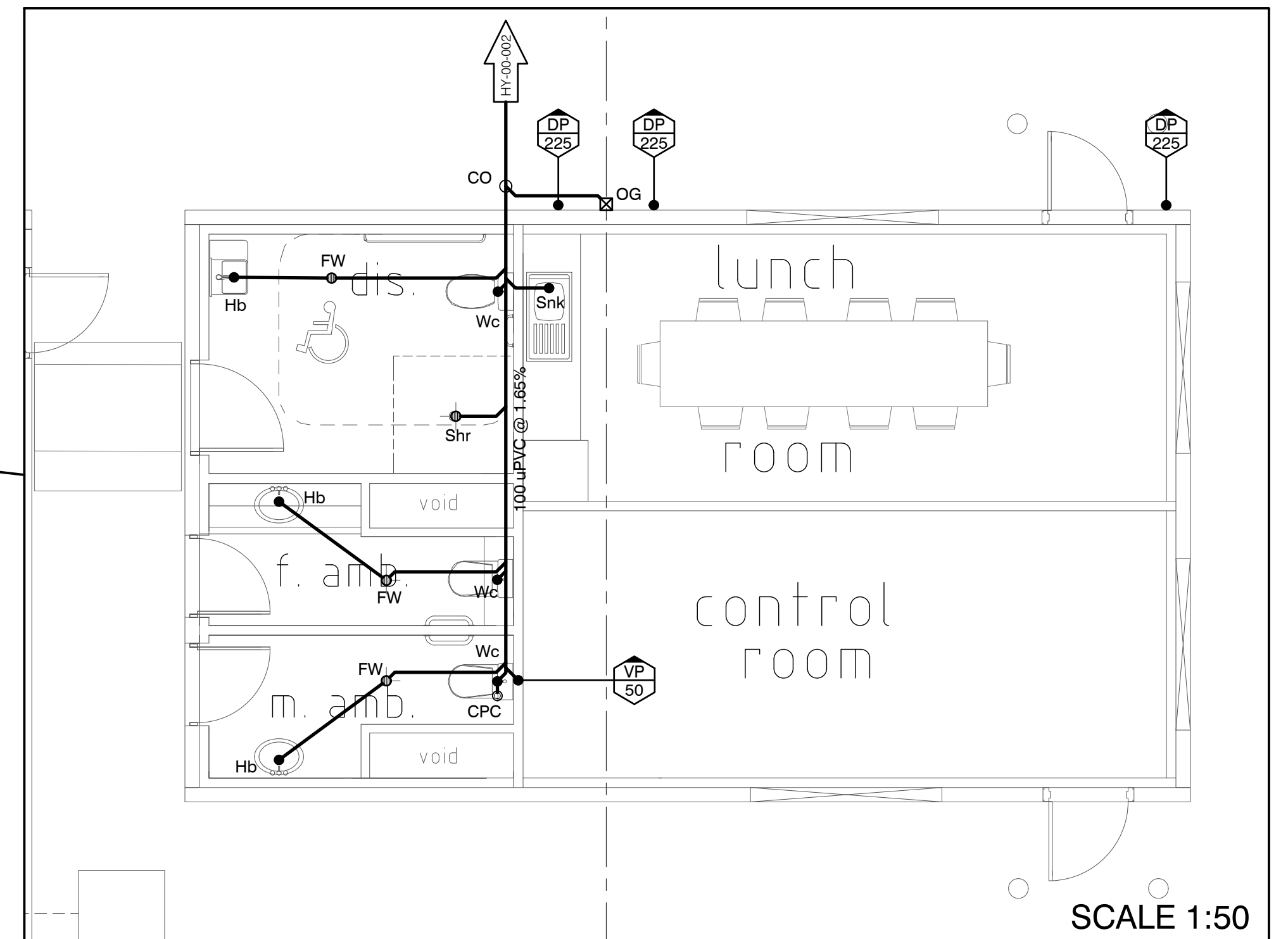
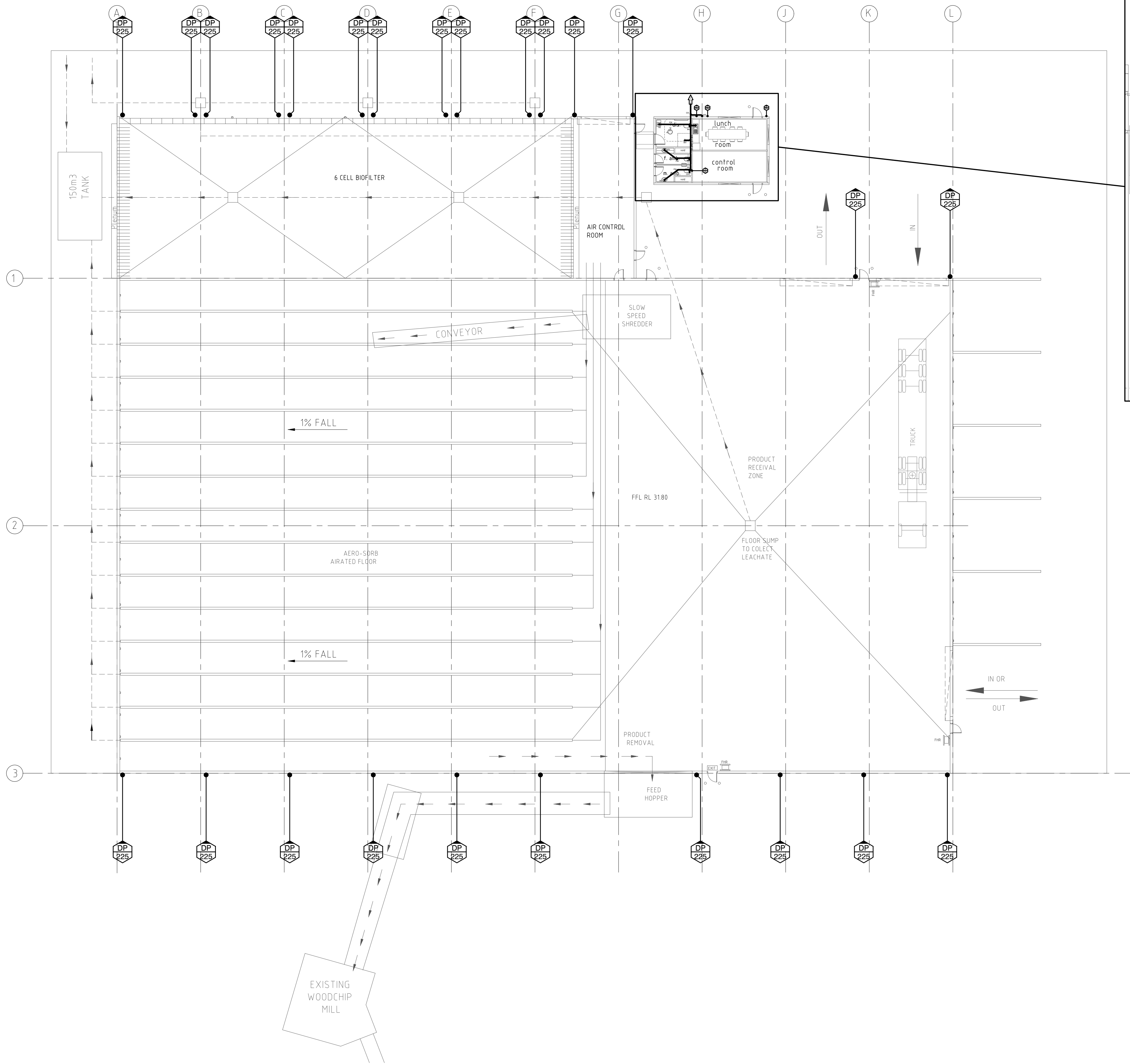
AT	ART TROUGH.
ACU	AIR CONDITIONING UNIT.
AAV	AIR ADMITTANCE VALVE.
B	BATH.
BFW	BUCKET FLOOR WASTE.
BKS	BUCKET SINK.
BS	BAR SINK.
BID	BIDETTE.
BT	BOUNDARY TRAP.
BWU	BOILING WATER UNIT.
CD	CONDENSATE DRAIN.
CO	CLEAROUT.
CPC	CHROME PLATED BRASS SCREWED CLEAROUT.
CS	CLEANERS SINK.
DCV	DOUBLE CHECK VALVE (TESTABLE).
DE	DIESEL EXHAUST.
DF	DRINKING FOUNTAIN.
DN	DIAMETER NOMINAL.
DG	DISCONNECTOR GULLY.
DP	DOWNPIPE.
DPH	DOUBLE PILLAR HYDRANT.
DT	DRINKING TROUGH.
DUCV	DUAL CHECK VALVE.
DW	DISHWASHER.
e	EXISTING.
ED	ELEVATED DRAINAGE.
eSAC	EXISTING SEWER ACCESS CHAMBER.
eSWP	EXISTING STORMWATER PIT.
EW	EYE WASH.
FC	FUME CUPBOARD.
FH	FIRE HYDRANT.
FL	FLOOR LEVEL.
FS	FLUSHER SANITIZER.
FSL	FINISHED SURFACE LEVEL.
FU	FIXTURE UNITS.
FW	FLOOR WASTE.
GB	GAS BAYONET.
GCH	GAS CONVECTION HEATER.
GCT	GAS COOK TOP.
GD	GRATED DRAIN.
GW	GLASS WASHER.
Hb	HANDBASIN.
HT	HOSE TAP.
HWC	HUNTER WATER CORPORATION.
HWU	HOT WATER UNIT.
IL	INVERT LEVEL.
IM	ICE MACHINE.
IO	INSPECTION OPENING.
IS	INSPECTION SHAFT.
IPMF	INDUCT PIPE MICA FLAP.
KIP	KERB INLET PIT.
LPG	LIQUID PETROLEUM GAS.
LS	LABORATORY SINK.
NG	NATURAL GAS.
OG	OVERFLOW GULLY.
PA	PLASTER ARRESTOR.
PAT	PRACTICAL ACTIVITIES TROUGH.
PLD	PLANTER DRAIN.
RL	RELATIVE LEVEL.
RPZD	REDUCED PRESSURE ZONE DEVICE.
RWO	RAIN WATER OUTLET.
RV	REFLUX VALVE.
SAC	SEWER ACCESS CHAMBER.
Shr	SHOWER.
SH	SLOP HOPPER.
SHr	SEALED FLOOR WASTE.
SL	SURFACE LEVEL.
SMS	SEWER MAINTENANCE SHAFT.
Snk	KITCHEN SINK.
SPH	SINGLE PILLAR HYDRANT.
SPR	RAINWATER SPREADER.
SShr	SAFETY SHOWER.
SS	SOIL STACK.
ST	STERILIZER.
SVS	SPRINKLER VALVE SET.
T	TUBS.
TD	TUNDISH.
TMV	THERMOSTATIC MIXING VALVE.
TWV	TRADE WASTE VENT.
UR	URINAL.
Vb	VANITY BASIN.
VP	VENT PIPE.
Wc	WATER CLOSET.
WD	WINDOW DRENCHER.
WM	WASHING MACHINE.
WS	WASTE STACK.
WT	WASH TROUGH.

GENERAL NOTES

- IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN A 'DIAL BEFORE YOU DIG' TO ASCERTAIN THE FULL EXTENT OF EXISTING SERVICES SURROUNDING THE SUBJECT PROPERTY. PRIOR TO ANY EXCAVATION THE RELEVANT AUTHORITIES eg TELSTRA OPTUS, AGILITY etc. ARE TO BE NOTIFIED OF ALL WORKS.
- ALLOW TO PAY ALL FEES & CHARGES FOR ALL AUTHORITIES RELATING TO ALL WORKS DESIGNED & SPECIFIED.
- IT IS THE HYDRAULIC CONTRACTORS RESPONSIBILITY TO ENGAGE A SUITABLE QUALIFIED CONTRACTOR TO CARRY OUT A THOROUGH GROUND SEARCH FOR EXISTING SERVICES AROUND AND IN THE PROPOSED BUILDING FOOTPRINT. NOTIFY THE SUPERINTENDENT IMMEDIATELY IF ADDITIONAL SERVICES TO THAT DOCUMENTED ARE LOCATED. THIS IS TO BE CARRIED OUT PRIOR TO ANY WORKS BEING COMMENCED.
- ALL HOT, WARM & COLD WATER ISOLATION VALVES SHOWN ARE TO BE LOCATED IN THE CEILING VOID COMPLETE WITH ACCESS PANEL OTHERWISE 300mm DOWN FROM CEILING IN ROOM USING ENWARE VP356 ISOLATION VALVE WITH CHROME COVERPLATE.
- ALL EXPOSED PIPEWORK TO BE CHROME PLATED OR PAINTED AS PER SPECIFICATION.
- ALLOW TO PREPARE & SUPPLY DETAILED 'AS INSTALLED' DRAWINGS & MAINTENANCE MANUALS FOR ALL ASSOCIATED WORKS AS DETAILED IN THE SPECIFICATION.
- SUPPLY & INSTALL FIRE STOP COLLARS etc. TO COMPLY WITH AS4072.1 TO MAINTAIN THE FIRE RATING INTEGRITY OF THE BUILDING ELEMENT BEING PENETRATED. THE COLLARS MUST COMPLY WITH ALL CLAUSES / PARTS OF AS4072.
- CONTRACTOR TO ENSURE THAT HYDRAULIC SERVICE PENETRATIONS THROUGH FIRE RATED WALLS/CEILINGS & OTHER FIRE RATED ELEMENTS ARE PROTECTED AND MEET THE REQUIREMENTS OF SPECIFICATION 13 OF THE NCC 2022
- ALL HYDRAULIC SERVICES PIPEWORK, EQUIPMENT & VALVES SHOULD BE LABELED TO ENABLE THEM TO BE CLEARLY IDENTIFIED. LOCATIONS OF LABELS TO BE APPROVED BY ARCHITECT.
- ALL HOT/WARM WATER PIPEWORK TO BE INSULATED WITH THERMOTEC INSULATION OR EQUIVALENT WITH R-VALUE ≥ 0.6 IN ACCORDANCE WITH AS/NZS 3500.4. REFER TO SPECIFICATION FOR EXACT REQUIREMENTS.
- ALL DISRUPTIONS TO EXISTING SERVICES FOR NEW CONNECTIONS ARE TO BE COORDINATED ON SITE WITH THE PROJECT SUPERINTENDENT.
- ALL INWALL TUNDISH ARE TO BE MODTEC OR EQUIVALENT. REFER TO DETAILS.
- ALL EXTERNAL HOSE TAPS TO BE ENWARE KEY OPERATED HOSE TAPS FITTED WITH VACUUM BREAKERS.
- ALL LEVELS & LOCATIONS SHOWN ON DRAWINGS FOR EXISTING PITS, SERVICES, SEWER ACCESS CHAMBERS & KERB INLET PITS ARE TO BE CONFIRMED ON SITE PRIOR TO ANY WORKS BEING CARRIED OUT.
- ISOLATION VALVE AT WATER METER ASSEMBLY TO BE SECURED IN THE OPEN POSITION BY A PADLOCKED METAL STRAP AND AN ENGRAVED NON FERROUS METAL LABEL ATTACHED. LABEL TO BE ENGRAVED WITH 8mm UPPER CASE WORDING: 'FIRE SERVICE VALVE - CLOSE ONLY TO SERVICE FIRE HOSE REELS'.
- ALL SERVICES INSTALLED ADJACENT THE BUILDING ARE TO BE LOCATED OUTSIDE THE ZONE OF INFLUENCE AS PER AS3500.
- ALL HYDRANT PIPEWORK TO BE BLUE BRUTE CLASS 16 INGROUND OR GALVANIZED STEEL ABOVE GROUND TO COMPLY WITH AUSTRALIAN STANDARDS. ALL BLUE BRUTE PIPEWORK TO BE SUPPORTED BY THRUST BLOCKS.
- ALL LOCATIONS OF WATER POINTS FOR INTERNAL FITOUT SHOWN ON THESE PLANS ARE FOR CLARITY ONLY. FINAL LOCATIONS ARE TO BE DETERMINED USING ARCHITECTURAL 1:50 INTERNAL LAYOUTS & ELEVATIONS.
- SANITARY DRAINAGE OVERFLOW GULLIES TO BE PROVIDED IN ACCORDANCE WITH AS3500.2 REQUIREMENTS. IF HEIGHTS IN ACCORDANCE WITH AS3500.2.4.6.6.6 CANNOT BE ACHIEVED REFLUX VALVES MUST BE INSTALLED.
- WHERE PIPEWORK IS LIKELY TO BE EXPOSED TO FIRE IN AN AREA WITHIN A BUILDING THAT IS NOT PROTECTED BY SPRINKLERS, PIPE-SUPPORTS SHALL BE INSTALLED WITH A MINIMUM FRL NOT LESS THAN 60/-/. THE PIPE-SUPPORTS ARE REQUIRED TO HAVE A TEMPERATURE RESISTANCE OF NOT LESS THAN 500°C WHEN TESTED IN ACCORDANCE WITH AS1530.4.

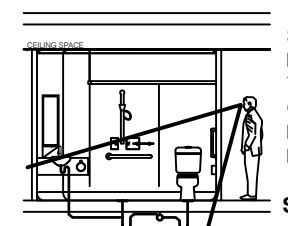






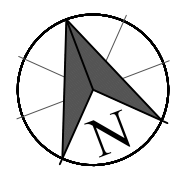
SCALE 1:50

NOTE:
STORMWATER DOWNPIPES TO CONNECT TO
IN-GROUND CIVIL STORMWATER SYSTEM.
REFER TO CIVIL DOCUMENTATION.



SANITARY PLUMBING,
DOWNPIPES, ETC. SERVING
THIS FLOOR SUSPENDED IN
CEILING SPACE OF FLOOR
BELOW OR INSTALLED
BELOW FLOOR SLAB

SERVICES ORIENTATION



2	21.08.24	100% ISSUE
1	09.07.24	90% ISSUE
Rev	Date	Reason for Issue

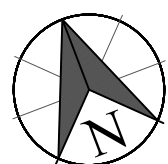
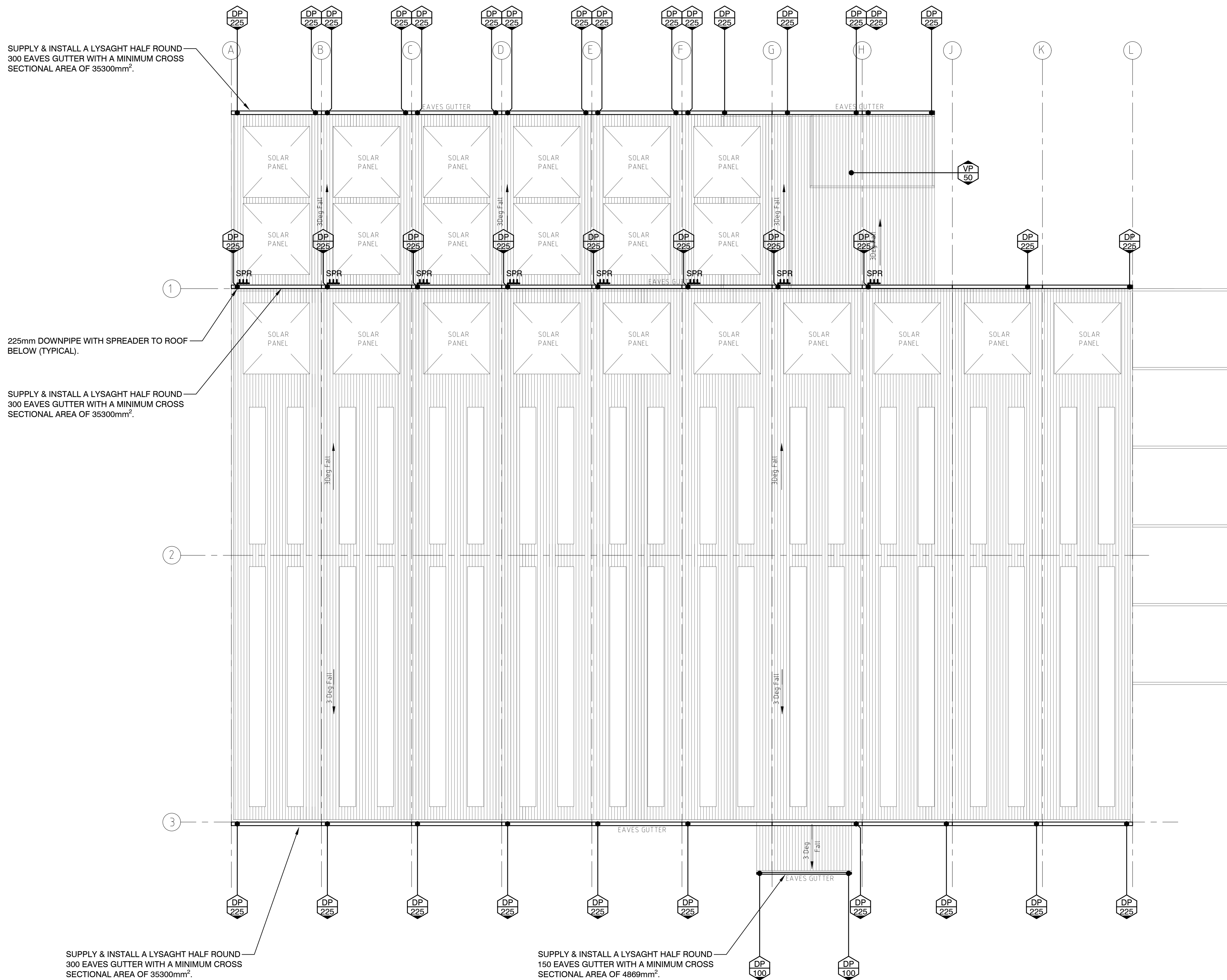
CM	CB	DW
Drawn	Design	Verify

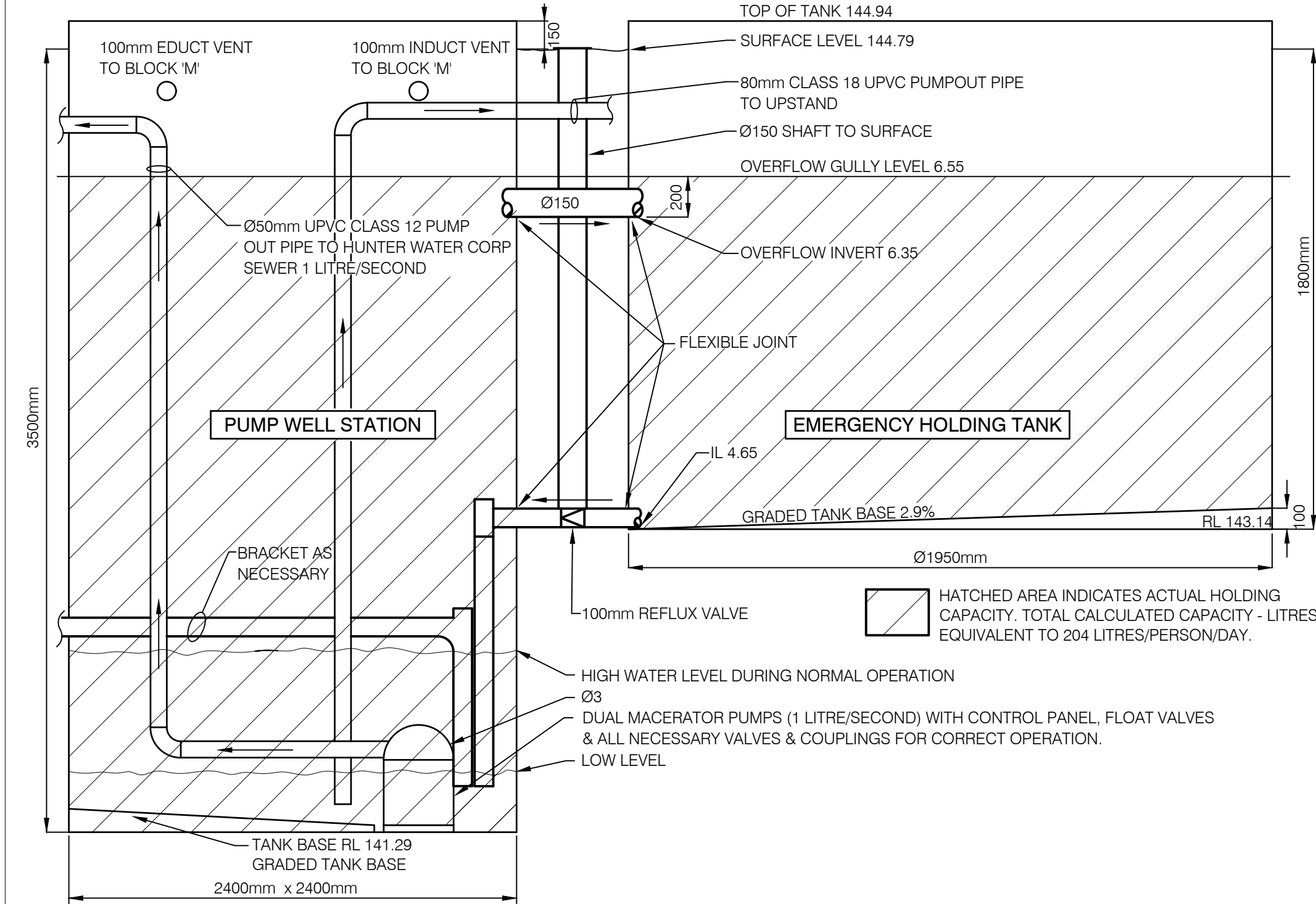
Project
**PROPOSED EXTENSION WOOD
WASTE PROCESSING BUILDING**
ANL TEA GARDENS
PINDIMAR ROAD, TEA GARDENS, NSW 2324

Drawing Title
**WOOD WASTE PROCESSING
BUILDING - GROUND FLOOR
SANITARY DRAINAGE LAYOUT**

Discipline
HYDRAULIC SERVICES

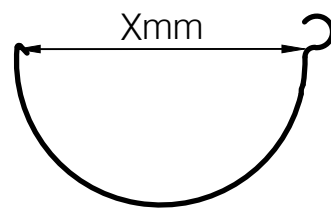
Job No. Drawing No. Rev
MN14834 HY-20-001 2





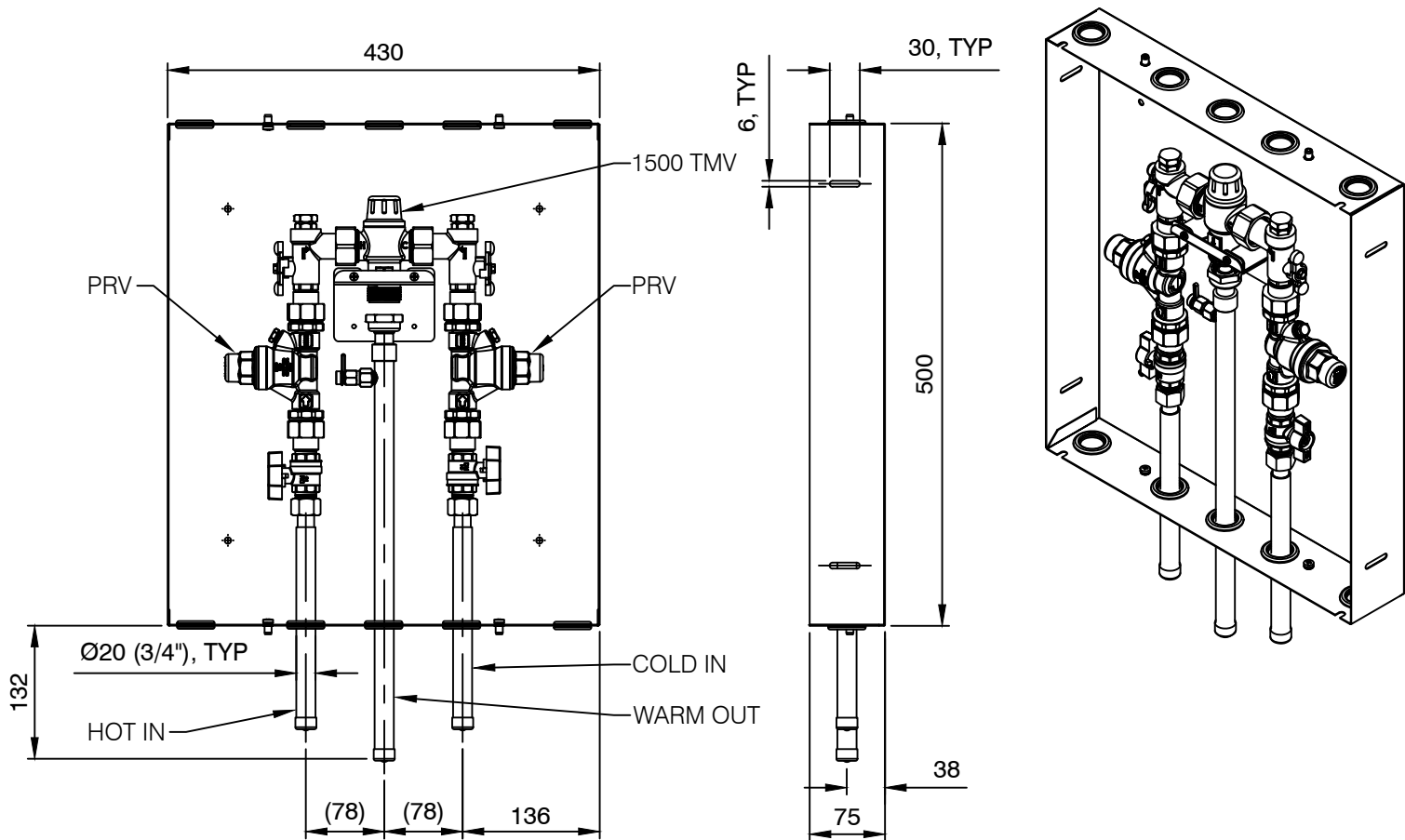
PUMP WELL AND HOLDING TANK SECTION DETAIL

- NOTES:
1. PUMPS TO BE ON BRACKETED SLIDING RAILS WITH CHAINS TO TOP OF PUMP STATION.
2. TANKS TO BE FITTED WITH STAINLESS STEEL STEP IRONS.

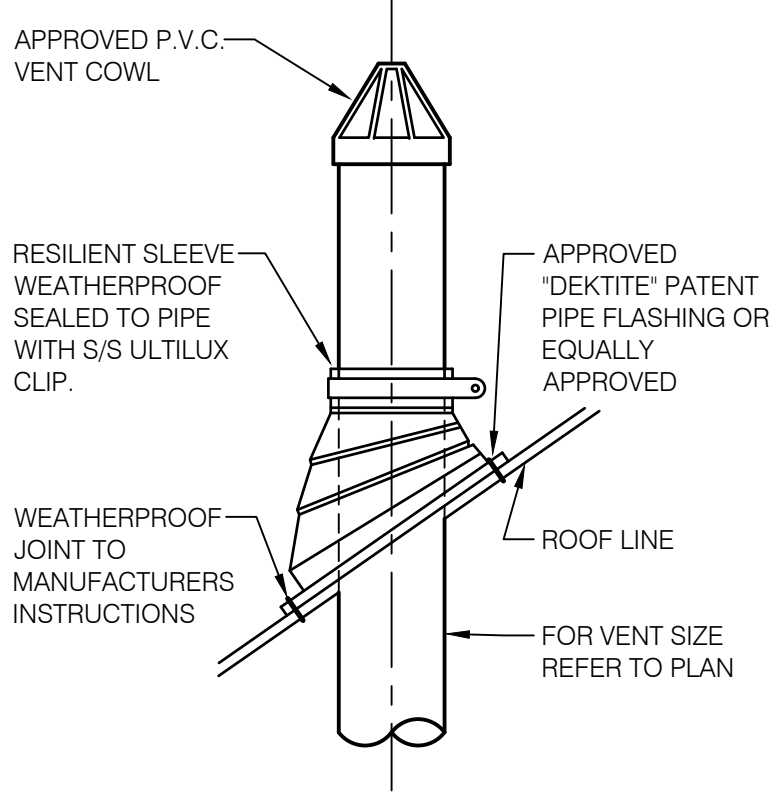


GUTTER	X	HALF ROUND GUTTER CROSS SECTIONAL AREA mm ²
HALF ROUND	100	4300mm ²
HALF ROUND	125	6300mm ²
HALF ROUND	150	9200mm ²
HALF ROUND	200	14500mm ²
HALF ROUND	250	24500mm ²
HALF ROUND	300	35300mm ²

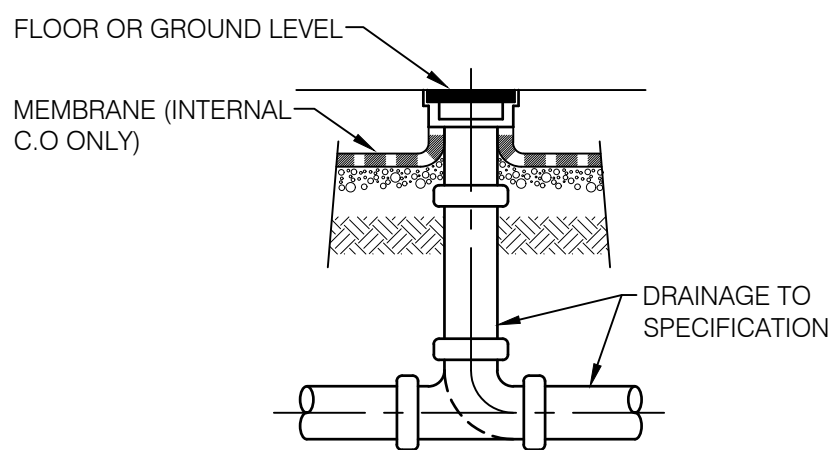
LYSAGHT HALF ROUND GUTTER



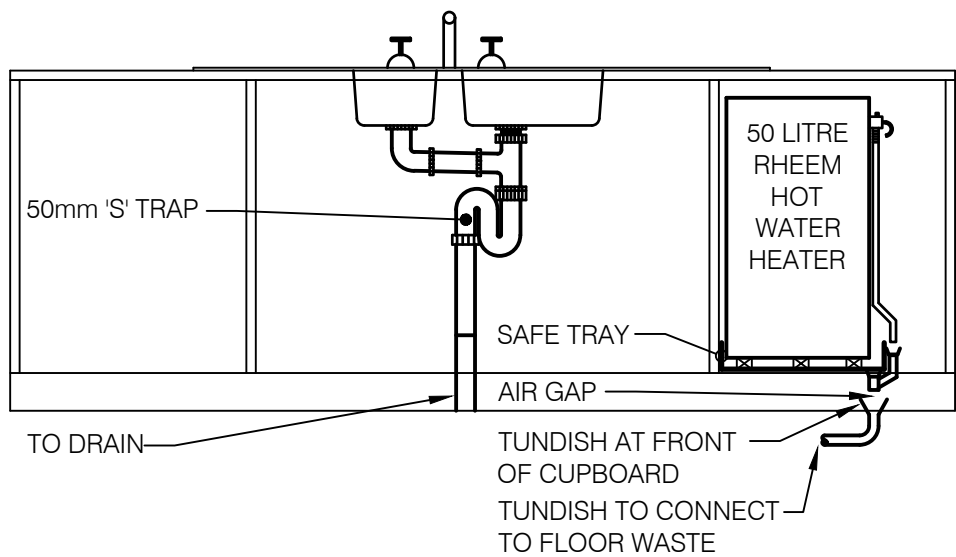
THERMOSTATIC WATER MIXING VALVE & WATER CONNECTIONS



TYPICAL VENT TERMINATION DETAIL



TYPICAL CLEAROUT



50 LITRE HOT WATER HEATER UNDER SINK