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Stormwater Engineering Report:

**FORESTWAY SHOPPING CENTRE
22 FOREST WAY FRENCHES FOREST NSW**

Prepared for:
Revelop Building & Developments Pty Ltd

Development Application Submission
Revision 3

October 2024

Job No.: 21J51

Report Amendment Register



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Rev No.	Section & Page No.	Issue/Amendment	Author	Project Engineer	Reviewer	Date
01	All	Issued for DA	FZ	TR	TR	25/09/2023
02	All	Issued for DA	DF	FZ	TR	30/08/2024
03	All	Issued for DA	DF	FZ	TR	31/10/2024

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1 INTRODUCTION

1.1 General

This Engineering Report has been prepared to supplement the Development Application (DA) to Northern Beaches Council (Council) for the proposed redevelopment of the Forestway Shopping Centre. The report has been prepared on behalf of Revelop Building & Developments Pty Ltd.

The site is currently in operation and consists of a supermarket and various specialty tenancies along the western side of the site and a multi storey carpark along the eastern side of the site.

This report will outline the Civil Engineering proposal and in particular the stormwater management strategy developed for managing stormwater runoff from the proposed development and that the proposed concepts meet Council's specifications and requirements.

1.2 Site Description

The address of the Forestway Shopping Centre is 22 Forest Way Frenches Forest (DP1209801), see Figure 1 below. It is located within the Northern Beaches Local Government Area (LGA) and covers an area of approximately 2.041ha. The site is enclosed by Forest Way to the east, Russell Avenue to the North, Grace Ave to the west and Frenchs Forest Public School to the south. Customer parking to the multistorey carpark is via Forest Way and Russel Avenue and the on-grade carpark is accessed via Grace Ave.

A review of the survey conducted by Realserve shows the site generally falls towards the north eastern corner of the site.



Figure 1: Forestway Shopping Centre locality plan (Six Maps)



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1.3 Proposed Development

The proposed development involves upgrading the multi storey carpark to include an additional basement level and an extension to the shopping center. The basement level will extend towards the north and extend under the extended section of the shopping centre. Refer to enclosed civil drawings and the architectural plans for details.

2 STORMWATER MANAGEMENT PLAN

2.1 General Stormwater

Drainage connection points from the existing building roof will be largely maintained with the exception of some minor drainage lines that will need diversion and reconnection.

The drainage system for the extension and multi-levelled carpark upgrade will be designed to collect all concentrated flows from impermeable surfaces such as roof areas and parking areas.

Another aspect of the stormwater system is to ensure that the design takes into account water sensitive urban design (WSUD) measures. The stormwater network has been designed such that it incorporates proprietary pit baskets and secondary treatment devices as a means of treating stormwater before it leaves the site to ensure there is no adverse impact on the downstream drainage system.

Water quality and quantity will be calculated only for the proposed areas (refer to Appendix A for catchment calculations).

2.2 Stormwater Quantity

The Northern Beaches Council's Water Management for Development Policy notes:

'For all developments except single residential dwelling developments the PSD is to be calculated on the maximum allowable impervious fraction of 0%. That is, discharge off the site is to be restricted to the "state of nature" condition.'

As such, On-site Stormwater Detention (OSD) tanks were designed to ensure the proposed development site discharge was reduced to the undeveloped flow rates. Due to spatial configurations/restrictions within the site, a combined total of three OSDs are proposed. Two of which are located in the multi-levelled carpark which will drain into Forest Way and the third OSD located within the Mini Major which will drain into Grace Ave.

The stormwater systems were modelled using the DRAINS software using the ARR 2019 storms and procedures for an Initial Loss/Continual Loss model. The site discharge rates for the 5, 20 and 100yr ARI storm events into Forest Way and Grace Ave are shown in Table 1 and 2 respectively.

The two OSDs located in the carpark have a combined area of 100m² and a volume of 235m³. Refer to Appendix A for more details of these OSD tanks.



Table 1: Site discharge rates to Forest Way

ARI (yr)	Pre (L/s)	Post(L/s)
5	174	173
20	295	251
100	434	419

The OSD located within the Mini Major has an area of 39.8m² and a minimum volume of 71.6m³.

Table 2: Site discharge rates to Grace Ave

ARI (yr)	Pre (L/s)	Post(L/s)
5	53	53
20	85	66
100	123	80

2.3 Stormwater Quality

Urban developments have the potential to increase gross pollutants, sediments, hydrocarbons and nutrient concentrations in stormwater runoff. To limit the impact on the downstream water quality, water quality measures at the source and end of line-treatments will be provided. This section describes the specific implementation of these measures for the proposed development.

As per Northern Beaches Council's Water Management Policy, water quality treatment will be required. The required pollutant reduction target rates are shown in Table 3.

Pollutant	Pollutant Reduction rates
Total Phosphorus (TP)	65%
Total Nitrogen (TN)	45%
Total Suspended Solid (TSS)	85%

Table 3: Stormwater quality requirements

It is proposed to provide pit baskets such as Ocean Protect Ocean Guards or an approved equivalent for all inlet pipes draining into the OSD. These pit baskets will assist in the water quality treatment for the site by capturing a large portion of gross pollutants, large sediment particles and organic matter that may also contain nutrients.

Secondary treatment devices such as Ocean Protect storm filter PSORB cartridges will also be provided within the OSD tanks to assist in the removal of phosphorus and nitrogen. Refer to Appendix B for MUSIC modelling.

The software MUSIC has been used to model the site. The stormwater treatment results are presented in Table 4 below. A total of 7 Ocean Protect Ocean Guards and 24 x 690mm PSORBS stormfilter cartridges are required to achieve the required pollutant target removal rates.



Table 4: Achieved pollutant removal rates

Pollutant	Achieved Pollutant Reduction rates
Total Phosphorus (TP)	72.7%
Total Nitrogen (TN)	52.7%
Total Suspended Solid (TSS)	85.0%

3 CONCLUSION

The design of the carparks, circulation ramps and access driveway provide a safe and efficient shopping centre which is sympathetic to the needs of the users and greatly improves on the existing safety of the car park.

Appropriate stormwater management practices will be implemented that minimise the impact of development on the existing stormwater system in terms of water quality whilst ensuring safe and efficient conveyance of runoff and conveyance through the site safely.

Whilst it is inevitable that the development will have an impact on the existing landform and stormwater runoff characteristics due to earthworks, change of land form and changes in impervious areas; by providing a safe and efficient design, and implementing appropriate measures during construction and operation of the development, it can be ensured that there will be minimal impact on the existing environment as a result of the proposed development.

4 References

- Landcom - "Soils and Construction Volume 1 – 4th Edition", March 2004
- Institution of Engineers, Australia - "Australian Rainfall and Runoff 3rd Edition", 2019
- Northern Beaches Council - Water Management for Development Policy

APPENDIX A: CIVIL PLANS



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1. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL SPECIFICATION. CONTRACTOR TO OBTAIN AND RETAIN A COPY ON SITE DURING THE COURSE OF THE WORKS.
2. ALL NEW WORKS ARE TO MAKE A SMOOTH JUNCTION WITH EXISTING CONDITIONS AND MARRY IN A 'WORKMANLIKE' MANNER.
3. THE CONTRACTOR IS TO VERIFY THE LOCATION OF ALL SERVICES WITH EACH RELEVANT AUTHORITY. ANY DAMAGE TO SERVICES SHALL BE RECTIFIED BY THE CONTRACTOR OR THE RELEVANT AUTHORITY AT THE CONTRACTOR'S EXPENSE. SERVICES SHOWN ON THESE PLANS ARE ONLY THOSE EVIDENT AT THE TIME OF SURVEY OR AS DETERMINED FROM SERVICE DIAGRAMS. H & H CONSULTING ENGINEERS PTY. LTD CANNOT GUARANTEE THE INFORMATION SHOWN NOR ACCEPT ANY RESPONSIBILITY FOR INACCURACIES OR INCOMPLETE DATA.
4. SERVICES & ACCESSSES TO THE EXISTING PROPERTIES ARE TO BE MAINTAINED IN WORKING ORDER AT ALL TIMES DURING CONSTRUCTION.
5. ADJUST EXISTING SERVICE COVERS TO SUIT NEW FINISHED LEVELS TO RELEVANT AUTHORITY REQUIREMENTS WHERE NECESSARY.
6. REINSTATE AND STABILISE ALL DISTURBED LANDSCAPED AREAS.
7. MINIMUM GRADE OF SUBSOIL SHALL BE 0.5% (1:200) FALL TO OUTLETS.
8. ALL TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES ARE TO BE CONSTRUCTED PLACED AND MAINTAINED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS, EROSION AND SEDIMENTATION CONTROL PLAN AND NORTHERN BEACHES COUNCIL REQUIREMENTS WHERE APPLICABLE.
9. CONTRACTOR TO CHECK AND CONFIRM SITE DRAINAGE CONNECTIONS ACROSS THE VERGE PRIOR TO COMMENCEMENT OF SITE DRAINAGE WORKS.
10. PROPERTIES AFFECTED BY THE WORKS ARE TO BE NOTIFIED IN ADVANCE WHERE DISRUPTION TO EXISTING ACCESS IS LIKELY.

- THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION AND REMOVAL (IF REQUIRED) OF ALL EXISTING SERVICES IN AREAS AFFECTED BY WORKS WITHIN THE CONTRACT AREA OR AS SHOWN ON THE DRAWINGS UNLESS DIRECTED OTHERWISE BY THE SUPERINTENDENT.
- THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES SERVICES TO ALL BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED.
- PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL GAIN APPROVAL OF HIS PROGRAM FOR THE RELOCATION/ CONSTRUCTION OF TEMPORARY SERVICES.
- CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN SUPPLY TO EXISTING BUILDING REMAINING IN OPERATION DURING WORKS TO THE SATISFACTION AND APPROVAL OF THE SUPERINTENDENT. ONCE DIVERSION IS COMPLETE AND COMMISSIONED, THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT.
- INTERRUPTION TO SUPPLY OF EXISTING SERVICES SHALL BE DONE SO AS NOT TO CAUSE ANY INCONVENIENCE TO THE PRINCIPAL. CONTRACTOR TO GAIN APPROVAL FROM THE SUPERINTENDENT FOR TIME OF INTERRUPTION.
- EXISTING SERVICES, BUILDINGS, EXTERNAL STRUCTURES AND TREES SHOWN ON THESE DRAWINGS ARE EXISTING FEATURES PRIOR TO ANY DEMOLITION WORKS.
- EXISTING SERVICES UNLESS SHOWN ON SURVEY PLAN HAVE BEEN PLOTTED FROM SERVICES SEARCH PLANS AND AS SUCH THEIR ACCURACY CANNOT BE GUARANTEED, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLETE A 'DIAL BEFORE YOU DIG' SEARCH AND TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.
- ALL BRANCH GAS AND WATER SERVICES UNDER DRIVEWAYS AND BRICK PAVING SHALL BE LOCATED IN 880 uPVC SEWER GRADE CONDUITS EXTENDING A MINIMUM OF 500mm BEYOND EDGE OF PAVING.



– PROPOSED SCOPE OF WORKS

DRAWING SCHEDULE	
21J51_DA_C000	COVER SHEET, DRAWING SCHEDULE, NOTES AND LOCALITY SKETCH
21J51_DA_C100	GROUND FLOOR GENERAL ARRANGEMENT PLAN
21J51_DA_C101	GROUND FLOOR DETAIL PLAN, SHEET 1 OF 2
21J51_DA_C102	GROUND FLOOR DETAIL PLAN, SHEET 2 OF 2
21J51_DA_C103	BASEMENT DETAIL PLAN
21J51_DA_C200	STORMWATER MISCELLANEOUS DETAILS AND PIT LID SCHEDULE
21J51_DA_C201	OSD TANK DETAILS AND SECTIONS, SHEET 1 OF 2
21J51_DA_C202	OSD TANK DETAILS AND SECTIONS, SHEET 2 OF 2
21J51_DA_C210	STORMWATER LONG SECTIONS
21J51_DA_C250	STORMWATER CATCHMENT PLAN
21J51_DA_SE01	SEDIMENT AND EROSION CONTROL PLAN
21J51_DA_SE02	SEDIMENT AND EROSION CONTROL DETAILS

- DATUM : A.H.D.
- ORIGIN OF LEVELS : REFER TO BENCH OR STATE SURVEY MARKS WHERE SHOWN ON PLAN.
- CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO THE COMMENCEMENT OF WORK.
- ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS & THE DIRECTIONS OF THE SUPERINTENDENT.
- EXISTING SERVICES UNLESS SHOWN ON THE SURVEY PLAN HAVE BEEN PLOTTED FROM SERVICES SEARCH PLANS AND SUCH THEIR ACCURACY CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.
- WHERE NEW WORKS ABOUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS ACHIEVED.
- THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR.
- CARE IS TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATION IS TO BE UNDERTAKEN OVER TELSTRA OR ELECTRICAL SERVICES. HAND EXCAVATE IN THESE AREAS.
- CONTRACTOR TO OBTAIN AUTHORITY APPROVALS WHERE APPLICABLE.
- MAKE SMOOTH TRANSITION TO EXISTING SURFACES AND MAKE GOOD.
- THESE PLANS SHALL BE READ IN CONJUNCTION WITH APPROVED LANDSCAPE, ARCHITECTURAL, STRUCTURAL, HYDRAULIC AND MECHANICAL DRAWINGS AND SPECIFICATIONS OR WRITTEN INSTRUCTIONS THAT MAY BE ISSUED RELATING TO DEVELOPMENT AT THE SITE.
- TRENCHES THROUGH EXISTING ROAD AND CONCRETE PAVEMENTS SHALL BE SAWCUT TO FULL DEPTH OF CONCRETE AND A MINIMUM OF 50mm IN BITUMINOUS PAVING.
- ALL BRANCH GAS AND WATER SERVICES UNDER DRIVEWAYS AND BRICK PAVING SHALL BE LOCATED IN Ø80 uPVC SEWER GRADE CONDUITS EXTENDING A MINIMUM OF 500mm BEYOND EDGE OF PAVING.
- GRADES TO PAVEMENTS TO BE AS IMPLIED BY RL'S ON PLAN. GRADE EVENLY BETWEEN NOMINATED RL'S. AREAS EXHIBITING PONDING GREATER THAN 5mm DEPTH WILL NOT BE ACCEPTED UNLESS IN A DESIGNATED SAC POINT.
- ALL COVERS AND GRATES ETC TO EXISTING SERVICE UTILITIES ARE TO BE ADJUSTED TO SUIT NEW FINISHED SURFACE LEVELS WHERE APPLICABLE.

THE EXISTING SITE CONDITIONS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN INVESTIGATED BY THE SURVEYOR SPECIFIED IN THE TITLE BLOCK. THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN. HENRY AND HYMAS PTY LTD. DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE OR ITS SUITABILITY AS A BASIS FOR CONSTRUCTION DRAWINGS. SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT HENRY AND HYMAS PTY. LTD. THE FOLLOWING NOTES HAVE BEEN TAKEN DIRECTLY FROM ORIGINAL SURVEY DOCUMENTS.

FOR DA ONLY

[illegible]



SORLIE PLACE

GRACE AVE

21J51_DA_C102

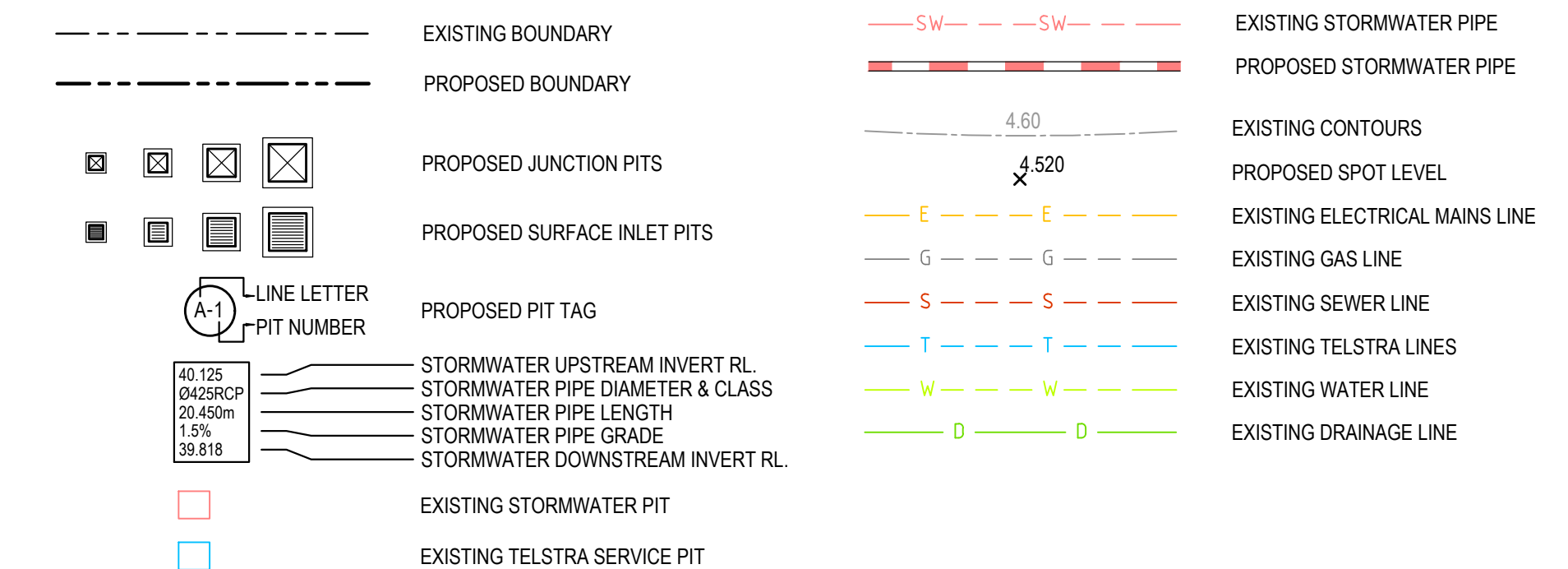
21J51_DA_C103

FOREST WAY

GROUND FLOOR GENERAL ARRANGEMENT PLAN

SCALE: 1:400

LEGEND



FOR DA ONLY

DATUM: AHD
ORIGIN OF LEVELS: PM 300

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Architect
nettletontribe

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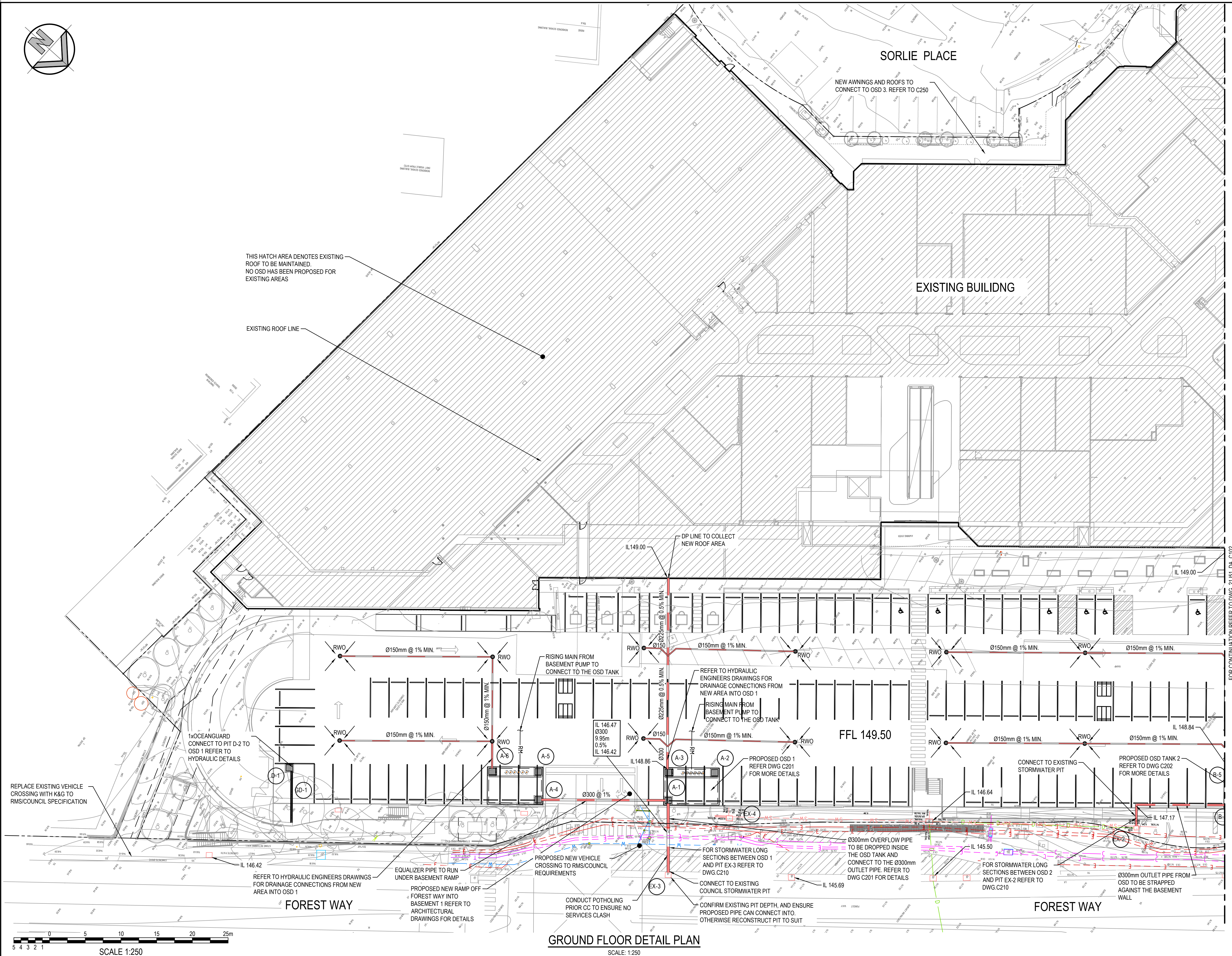
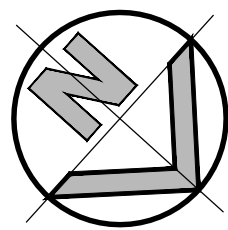
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Title	GROUND FLOOR GENERAL ARRANGEMENT PLAN
-------	--

Checked	Approved	Scale @A1
F.Zhou	T.Rozehnal	1:400

21J51_DA_C100	04
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LEGEND

- EXISTING BOUNDARY
- PROPOSED BOUNDARY
- PROPOSED JUNCTION PITS
- PROPOSED SURFACE INLET PITS
- PROPOSED PIT TAG
- STORMWATER UPSTREAM INVERT RL
- STORMWATER PIPE DIAMETER & CLASS
- STORMWATER PIPE LENGTH
- STORMWATER PIPE GRADE
- STORMWATER DOWNSTREAM INVERT RL
- EXISTING STORMWATER PIT
- EXISTING TELSTRA SERVICE PIT
- EXISTING STORMWATER PIPE
- PROPOSED STORMWATER PIPE
- EXISTING CONTOURS
- PROPOSED SPOT LEVEL
- EXISTING ELECTRICAL MAINS LINE
- EXISTING GAS LINE
- EXISTING SEWER LINE
- EXISTING TELSTRA LINE
- EXISTING COMM LINE
- EXISTING WATER LINE
- PROPOSED RAINWATER OUTLET

FOR CONTINUATION REFER TO DWG 21J51_DA_C102

FOR DA ONLY

SURVEY
INFORMATION
SURVEYED BY
REAL SERVE
DATUM: AHD
ORIGIN OF LEVELS: PM 300

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
04	ISSUED FOR DA ONLY	AFe	DF	31.10.2024					
03	ISSUED FOR DA ONLY	MS	DF	29.08.2024					
02	ISSUED FOR DA ONLY	AFe	TC	25.09.2023					
01	PRELIMINARY ISSUE	SC	TC	12.11.2021					

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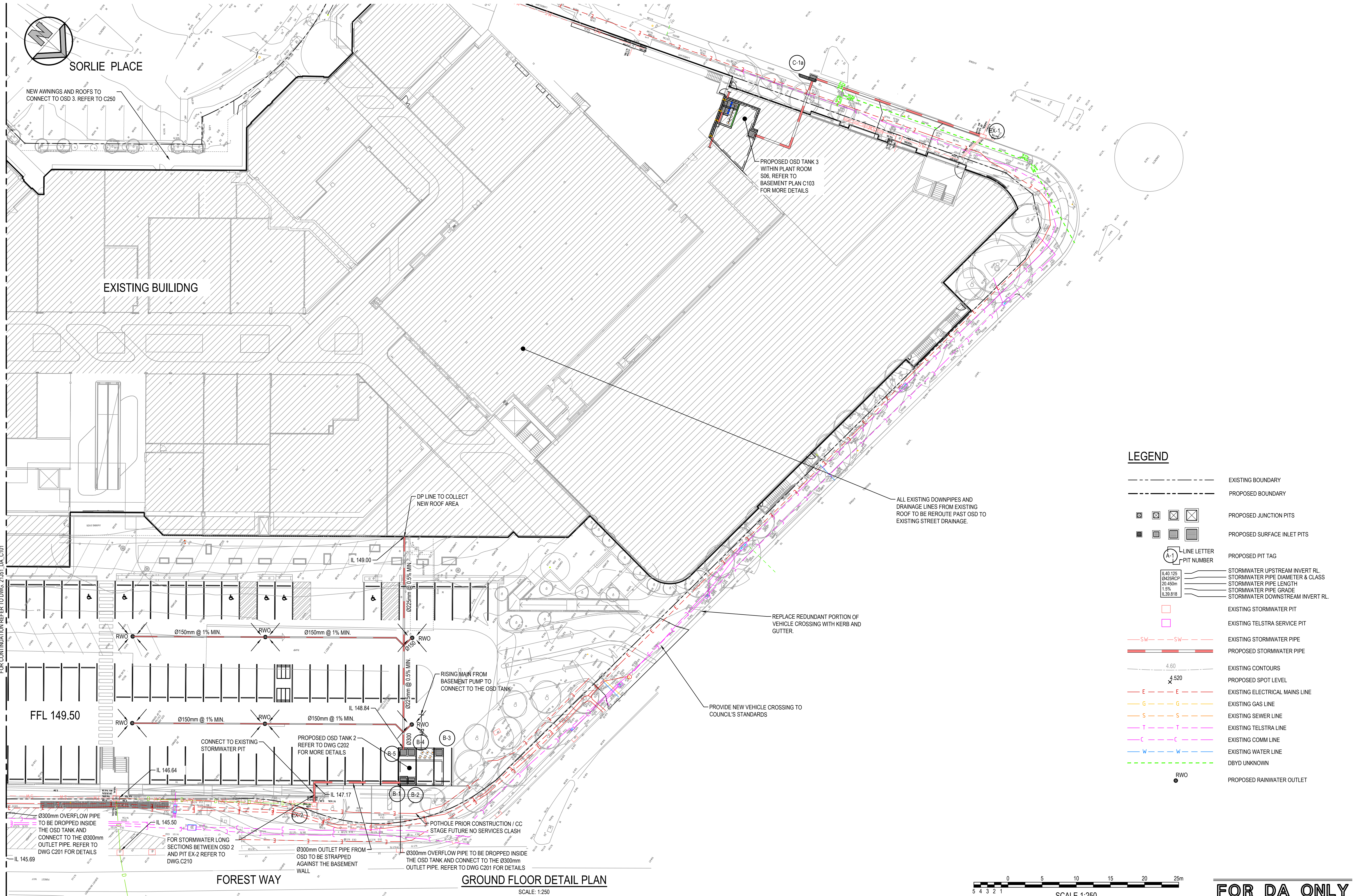
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Project
**PROPOSED RETAIL DEVELOPMENT
22 FOREST WAY, FRENCHS FOREST, NSW**
Title
**GROUND FLOOR DETAIL PLAN
SHEET 1 OF 3**

Drawn S.Chen	Designed D.Feng	Date OCT 2021
Checked F.Zhou	Approved T.Rozehnal	Scale @A1 1:250
Drawing number 21J51_DA_C101		Revision 04



SURVEY INFORMATION
SURVEYED BY
REAL SERVE
DATUM: AHD
ORIGIN OF LEVELS: PM 300

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
04	ISSUED FOR DA ONLY	AFe	DF	31.10.2024					
03	PRELIMINARY ISSUE	MS	FZ	29.08.2024					
02	PRELIMINARY ISSUE	MS	TC	25.09.2023					
01	PRELIMINARY ISSUE	SC	TC	12.11.2021					

Client
REVELOP

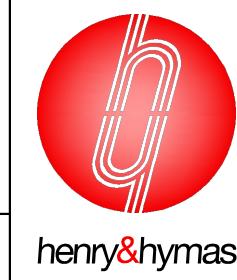
Architect
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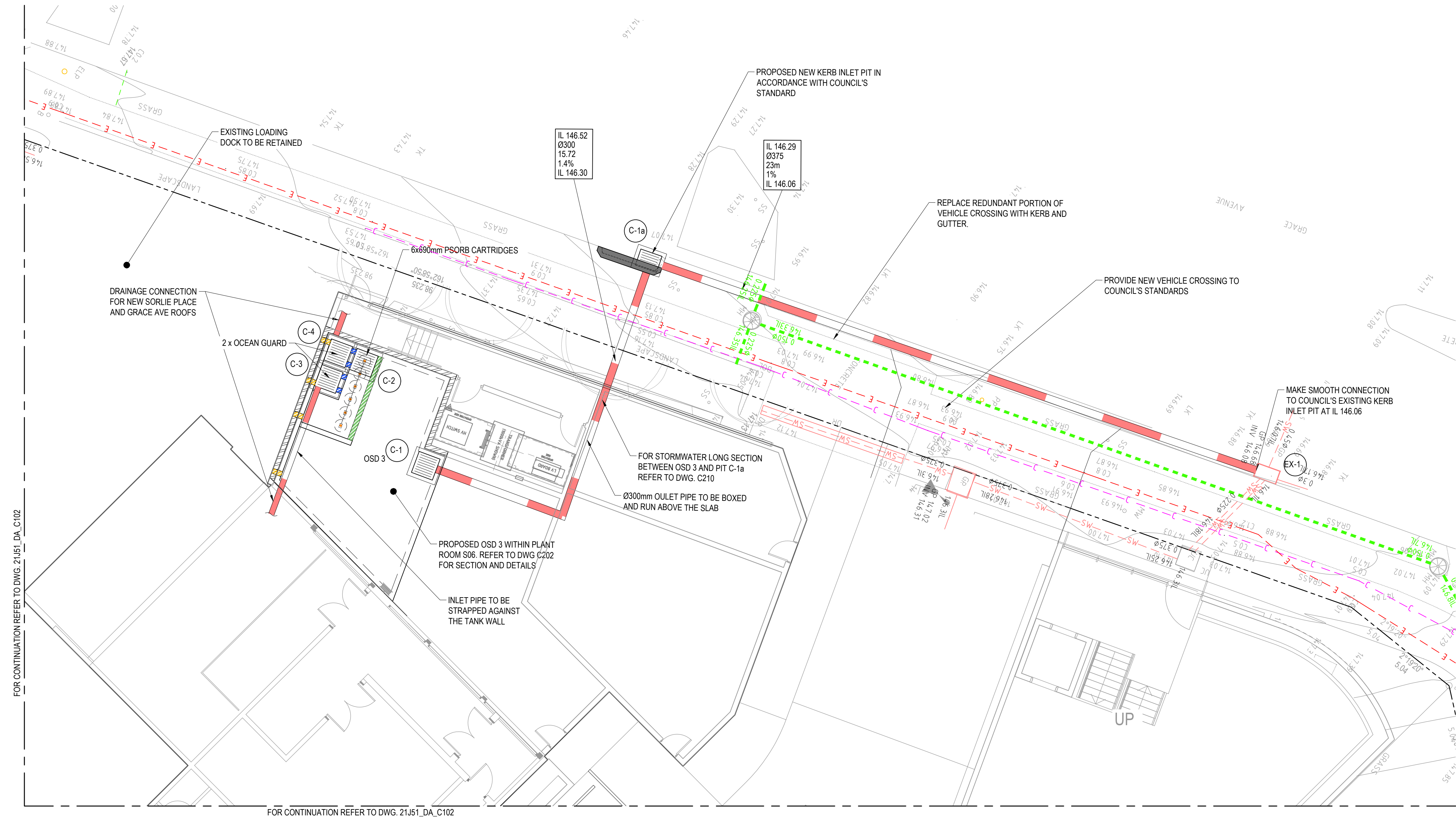
DRAWING TO BE PRINTED IN COLOUR



Project
PROPOSED RETAIL DEVELOPMENT
22 FOREST WAY, FRENCHS FOREST, NSW

Title
GROUND FLOOR DETAIL PLAN
SHEET 2 OF 3

Drawn S.Chen	Designed D.Feng	Date OCT 2021
Checked F.Zhou	Approved T.Rozebral	Scale @A1 1:250
Drawing number 21J51_DA_C102		Revision 04



Legend:

- PROPOSED BOUNDARY
- PROPOSED JUNCTION PITS
- PROPOSED SURFACE INLET PITS
- LINE LETTER
- PIT NUMBER
- STORMWATER UPSTREAM INVERT RL.
- STORMWATER PIPE DIAMETER & CLASS
- STORMWATER PIPE LENGTH
- STORMWATER PIPE GRADE
- STORMWATER DOWNSTREAM INVERT RL.
- EXISTING STORMWATER PIT
- EXISTING TELSTRA SERVICE PIT
- EXISTING STORMWATER PIPE
- PROPOSED STORMWATER PIPE
- EXISTING CONTOURS
- PROPOSED SPOT LEVEL
- EXISTING ELECTRICAL MAINS LINE
- EXISTING GAS LINE
- EXISTING SEWER LINE
- EXISTING TELSTRA LINE
- EXISTING COMM LINE
- EXISTING WATER LINE
- DBYD UNKNOWN

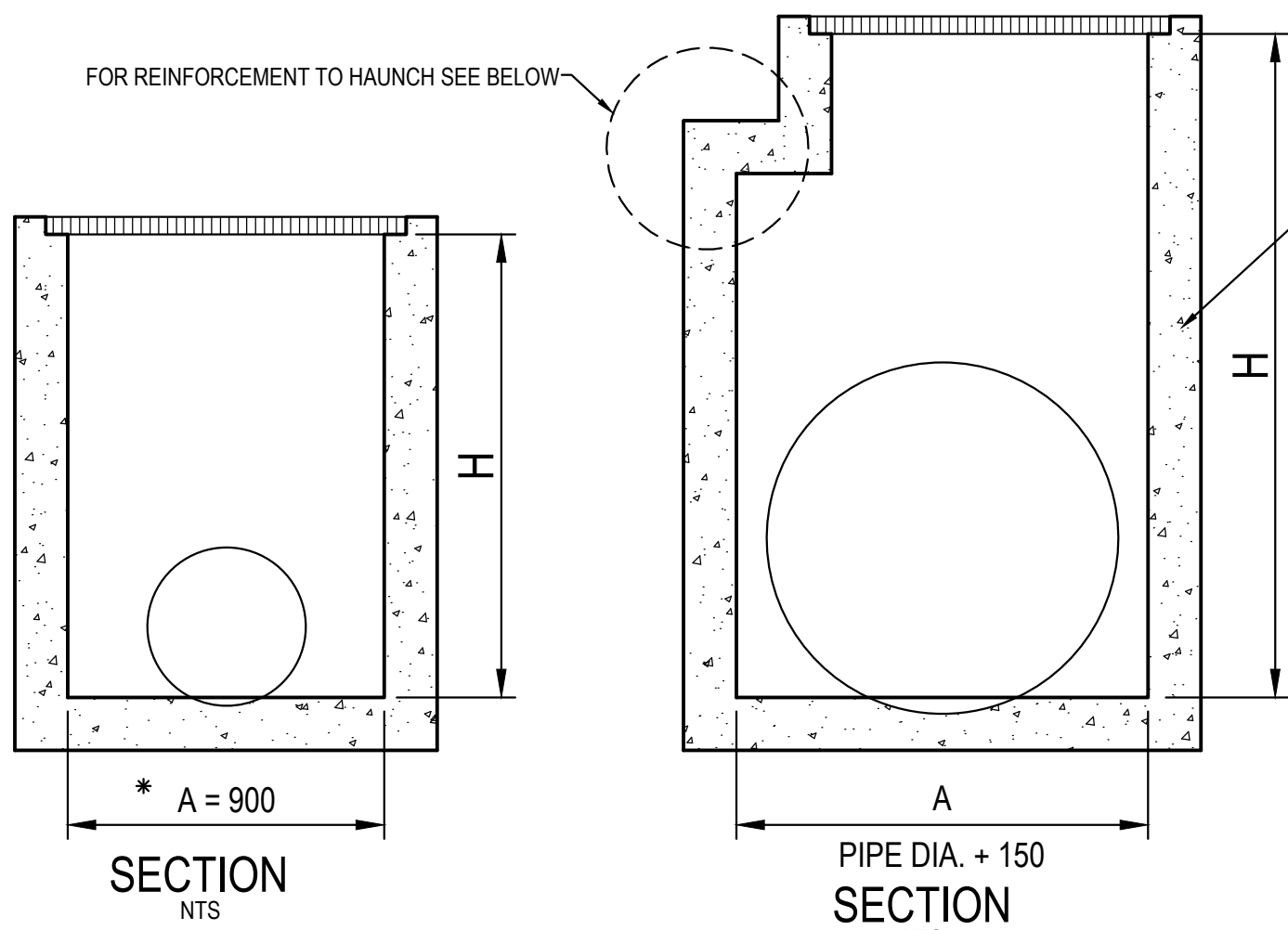
FOR DA ONLY

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TYPICAL PIT CHAMBER SIZES
IT IS THE CONTRACTORS RESPONSIBILITY TO SELECT PIT CHAMBER SIZE WITH REGARDS TO PIPE SIZE, DEPTH TO
INVERT AND SKEW ANGLE. REFER SKETCHES BELOW.

1. SELECT PIT CHAMBER USING THE STEPS BELOW:
2. SELECT PIT CHAMBER SIZE DEPENDING ON THE PIPE DIAMETERS.
3. CHECK PIT CHAMBER SIZE TO SATISFY DEPTH TO INVERT REQUIREMENTS.
4. CHECK PIT CHAMBER DIMENSIONS TO SATISFY THE SKEW ANGLE IN THE TABLE.

FOR B = 600mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 225mm
FOR B = 900mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 375mm
FOR B = 1200mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 600mm
FOR B = 1500mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 825mm
FOR B = 1900mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 1050mm

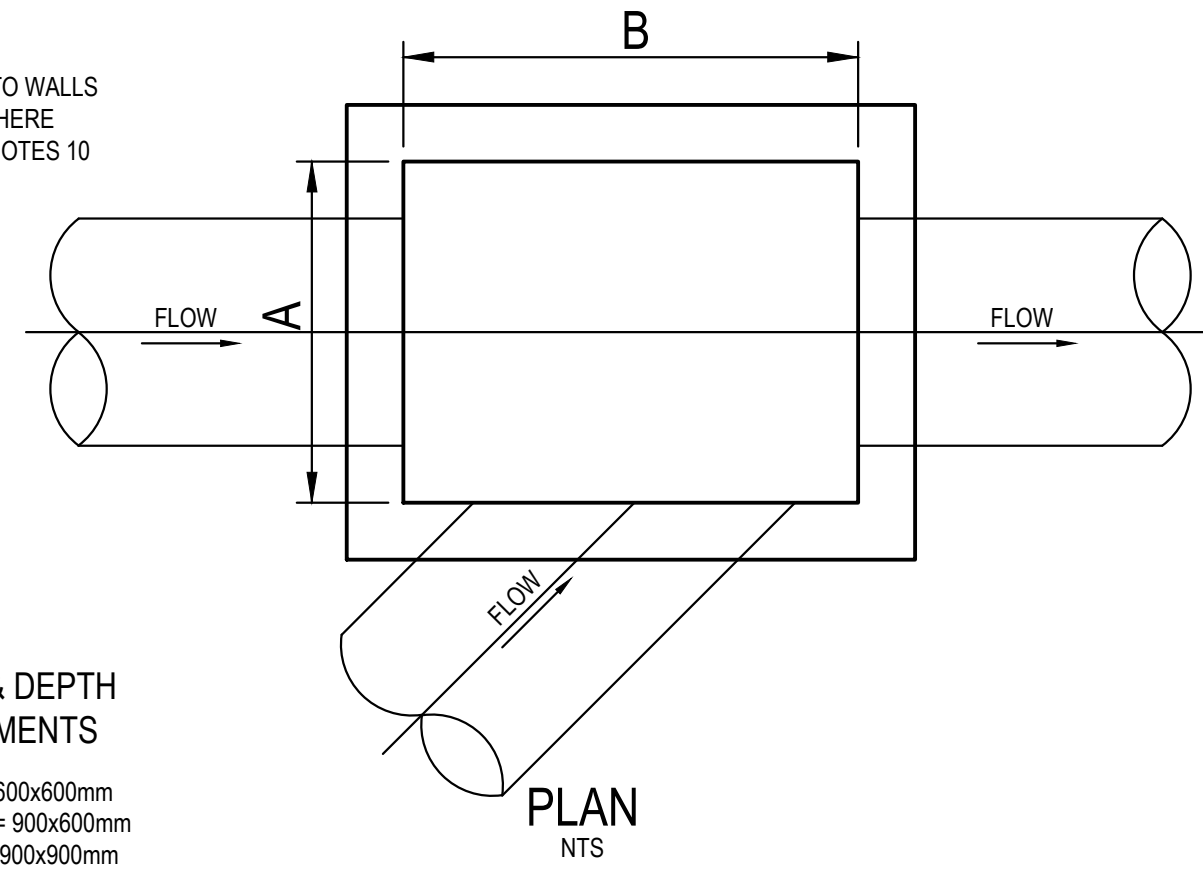


*A = 600 FOR PIPES UP TO 375 DIA.

1. PIT CHAMBER DIMENSIONS FOR PIPES UP TO 600 DIA.

2. PIT SIZE & DEPTH REQUIREMENTS

H = 0-900mm - AxB = 600x600mm
H = 900-1200mm - AxB = 900x600mm
H = >1200mm - AxB = 900x900mm



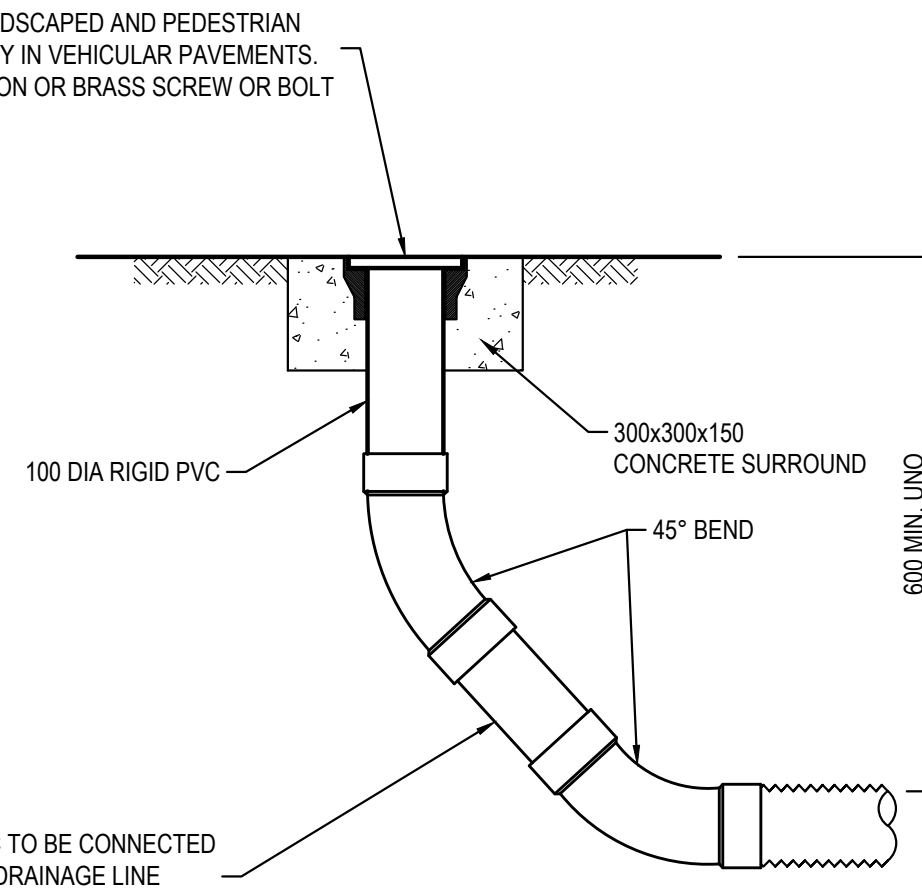
3. PIT CHAMBER FOR SIDE ENTRY ON SKEW

TABLE 1	
SIEVE SIZE (MM)	WEIGHT PASISNG (%)
75.0	100
9.5	100 TO 50
2.36	100 TO 30
0.60	50 TO 15
0.075	25 TO 0

TABLE 2	
SIEVE SIZE (MM)	WEIGHT PASISNG (%)
19.0	100
2.36	100 TO 50
0.60	90 TO 20
0.30	60 TO 10
0.15	25 TO 0
0.075	10 TO 0

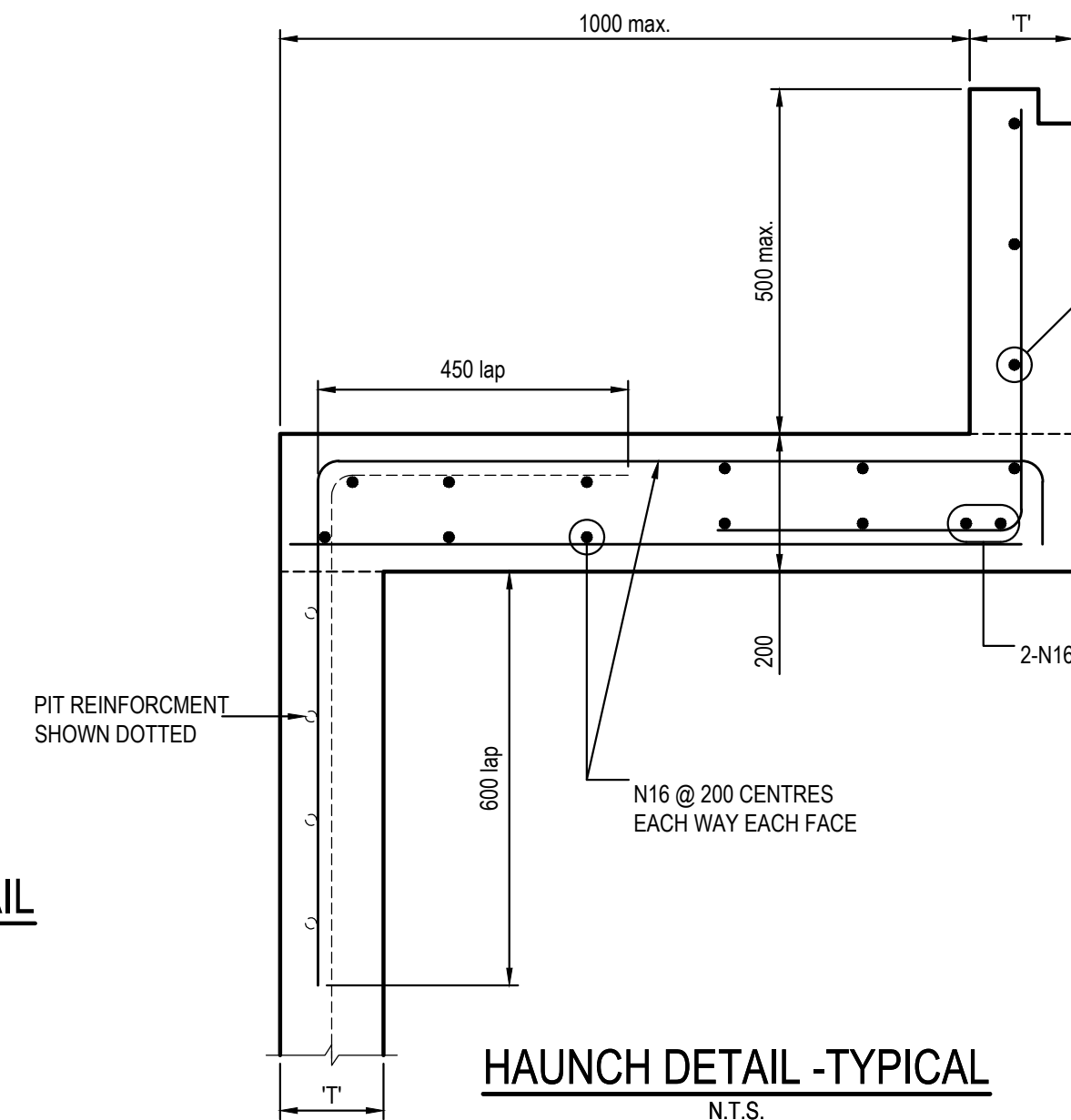
TABLE 3				
SUPPORT TYPE	BED ZONE X	HAUNCH ZONE Y	BED AND HAUNCH ZONES COMPACTION	MAX BEDDING FACTOR
HS1	100 IF D<=1500, OR 150 IF D>=1500	0.1D	50	2.0
HS2		0.3D	60	2.5
HS3		0.3D	70	4.0

LIGHT DUTY IN LANDSCAPED AND PEDESTRIAN AREAS
HEAVY DUTY IN VEHICULAR PAVEMENTS.
AIR TIGHT CAST IRON OR BRASS SCREW OR BOLT DOWN CAP.



FLUSHING POINT (FP)

SCALE 1:10
NOTE: SLOTTED RIGID PVC PIPE AND FITTINGS MAY BE USED



HAUNCH DETAIL -TYPICAL
N.T.S.

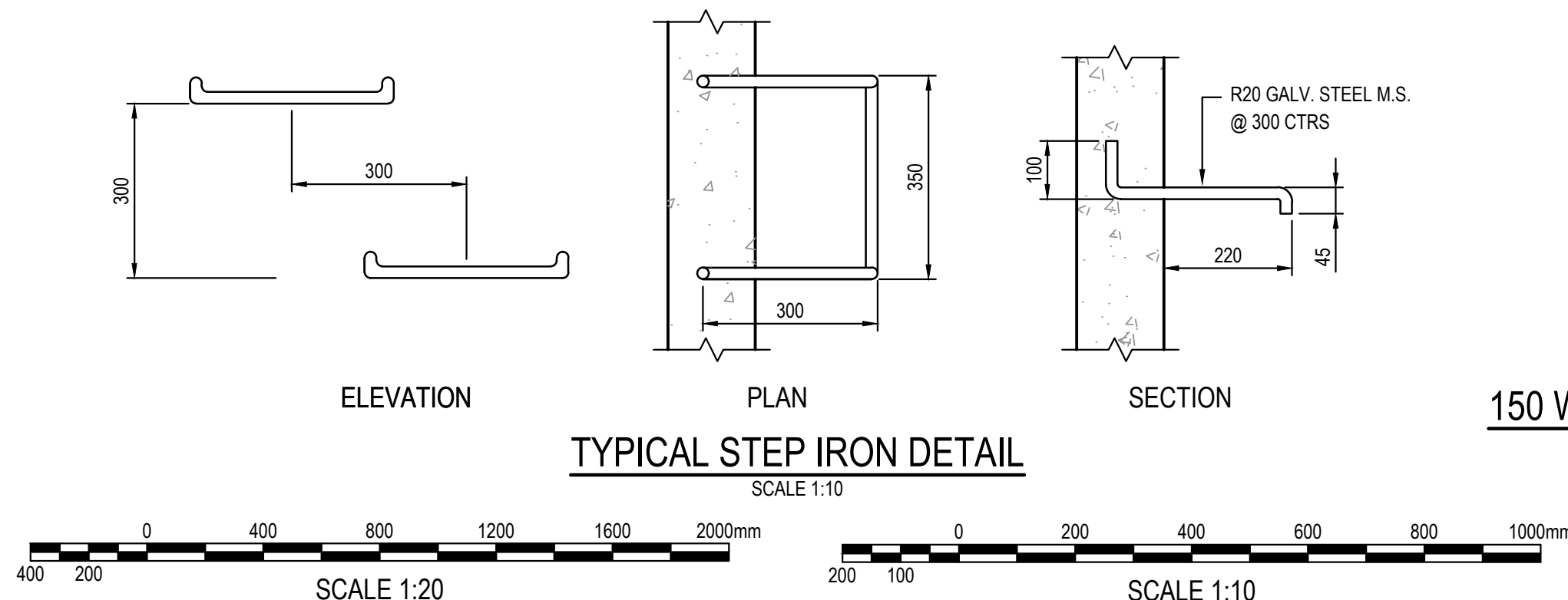
PIT LID SCHEDULE

PIT/STRUCTURE NUMBER	DESCRIPTION
A-6 B-5 A-3 B-4 C-3	PROPOSED HINGED 900x900 MEDIUM DUTY GRATED LID CLASS 'C' WITHIN OSD TANK IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL'S REQUIREMENTS AND TO BE FITTED WITH OCEANGUARD 200 MICRON BASKET PIT BASKET OR APPROVED EQUIVALENT.
A-1 A-2 A-4 A-5 B-1 B-2 B-3 C-1 C-2 C-4	PROPOSED HINGED 900x900 MEDIUM DUTY GRATED LID CLASS 'C' IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL'S REQUIREMENTS.
6D-1	PROPOSED 200mm WIDE GRATED DRAIN MEDIUM DUTY CLASS 'C' IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL'S REQUIREMENTS.
EX-1 EX-2 EX-3	CONNECT TO EXISTING PITS
D-1	PROPOSED SURFACE INLET PIT WITH HINGED 900x900 MEDIUM DUTY GRATED LID CLASS 'C' IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL'S REQUIREMENTS AND TO BE FITTED WITH OCEANGUARD 200 MICRON BASKET PIT BASKET OR APPROVED EQUIVALENT.
C-1a	PROPOSED SURFACE INLET PIT WITH HINGED 900x900 HEAVY DUTY GRATED LID CLASS 'D' IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL'S REQUIREMENTS.

DRAINAGE NOTES:

1. ALL STORMWATER WORK TO COMPLY WITH AS 3500 PART 3.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE MINIMUM COVER OF 600mm ON ALL PIPES.
3. PROTECTION OF PIPES DUE TO LOADS EXCEEDING W7 WHEEL LOAD SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
4. BEDDING TYPE SHALL BE TYPE H2 FOR RCP. WHERE NECESSARY THE OVERLAY ZONE SHALL BE REDUCED TO ACCOMMODATE PAVEMENT REQUIREMENTS. REFER TO THIS DRAWING FOR DETAILS.
5. MINIMUM COVER OVER EXISTING PIPES FOR PROTECTION DURING CONSTRUCTION SHALL BE 800mm.
6. NO CONSTRUCTION LOADS SHALL BE APPLIED TO PLASTIC PIPES.
7. FINISHED SURFACE LEVELS SHOWN ON LAYOUT PLAN DRGS TAKE PRECEDENCE OVER DESIGN DRAINAGE SURFACE LEVELS.
8. ALL PIPES UP TO AND INCLUDING 300 DIA. SHALL BE SOLVENT OR RUBBER RING JOINTED PVC CLASS SH PIPE TO AS1260. ALL OTHER PIPES TO BE RCP USING CLASS 2 RUBBER RING JOINTED PIPE. HARDIES FRC PIPE MAY BE USED IN LIEU OF RCP IF DESIRED IN GROUND. ALL AERIAL PIPES TO BE PVC CLASS SH.
9. ALL PITS IN NON TRAFFICABLE AREAS TO BE PREFABRICATED POLYESTER CONCRETE "POLYCRETE" WITH "LIGHT DUTY" CLASS B GALV. MILD STEEL GRATING AND FRAME. ALL PITS IN TRAFFICABLE AREAS (CLASS "D" LOADING MAX) TO HAVE 150mm THICK CONCRETE WALLS AND BASE CAST IN-SITU f_{cs}=32 MPa, REINFORCED WITH N12-200 BOTH LOADING WAYS CENTRALLY PLACE. U.N.O. ON SEPARATE DESIGN DRAWINGS IN THIS SET. GALV.MILD STEEL GRATING AND FRAME TO SUIT DESIGN LOADING. PRECAST PITS, RECTANGULAR OR CIRCULAR IN SHAPE, MAY BE USED IN LIEU AND SHALL COMPLY WITH RELEVANT AUSTRALIAN STANDARDS.
10. ALL PITS, GRATINGS AND FRAMES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATION AND TO BE IN ACCORDANCE WITH AS3500.3 AND AS3996.
11. PIT CHAMBER DIMENSIONS ARE TO BE SELECTED TO SATISFY THE FOLLOWING:
 - PIPE SIZE
 - DEPTH TO INVERT
 - SKEW ANGLEREFER TYPICAL PIT CHAMBER DETAILS BELOW
IF PIT LID SIZE IS SMALLER THAN THE PIT CHAMBER SIZE THEN THE PIT LID IS TO BE CONSTRUCTED ON THE CORNER OF THE PIT CHAMBER WITH THE STEP IRONS DIRECTLY BELOW. ALTERNATIVELY THE PIT LID TO BE USED, IS TO BE THE SAME SIZE AS THE PIT CHAMBER.
12. FOR PIPE SIZES GREATER THAN Ø300mm, PIT FLOOR IS TO BE BENCHED TO FACILITATE FLOW.
13. GALVANISED STEP IRONS SHALL BE PROVIDED AT 300 CTS FOR PITS HAVING A DEPTH EXCEEDING 1200mm. SUBSOIL DRAINAGE PIPE SHALL BE PROVIDED IN PIPE TRENCHES ADJACENT TO INLET PIPES. (MINIMUM LENGTH 3m).
14. ALL SUBSOIL PIPES SHALL BE 100mm SLOTTED PVC IN A FILTER SOCK, UNO, WITH 3m INSTALLED UPSTREAM OF ALL PITS.
15. ALL PIPEWORK SHALL HAVE MINIMUM DIAMETER 100.
16. MINIMUM GRADE FOR ROOFWATER DRAINAGE LINES SHALL BE 1%.
17. ALL PIPE JUNCTIONS AND TAPER UP TO AND INCLUDING 300 DIA. SHALL BE VIA PURPOSE MADE FITTINGS.
18. ALL ROOF DRAINAGE TO BE INSTALLED IN ACCORDANCE WITH AS3500, PART 3. TESTING TO BE UNDERTAKEN AND REPORTS PROVIDED TO THE SUPERINTENDENT.
19. LOCATION OF THE DIRECT DOWN PIPE CONNECTIONS MAY VARY ON SITE TO SUIT SITE CONDITIONS, WHERE CONNECTION SHOWN ON LONG SECTIONS CHAINAGES ARE INDICATIVE ONLY.
20. PITS IN EXCESS OF 1.5 m DEEP TO HAVE WALL AND FLOOR THICKNESS INCREASED TO 200mm. REINFORCED WITH N12@200 CTS CENTRALLY PLACED BOTH WAYS THROUGHOUT U.N.O.ON SEPARATE DESIGN DRAWINGS IN THIS SET. IF DEPTH EXCEEDS 5m CONTACT ENGINEER.
21. SUBSOIL DRAINAGE LINES FOR LANDSCAPE AREA NOT SHOWN ON THESE DRAWINGS. REFER TO LANDSCAPING PLANS FOR DETAILS.
22. ALL STORMWATER PITS TO HAVE Ø100 uPVC SLOTTED SUBSOIL PIPES CONNECTED TO THEM. THESE SUBSOILS TO EXTEND 3m UPSTREAM OF THE PIT AT A MINIMUM GRADE.

FOR DA ONLY



TYPICAL STEP IRON DETAIL

SCALE 1:10

150 WALL - CORNER DETAIL

SCALE 1:20

200 WALL - CORNER DETAIL

SCALE 1:20

SURVEY INFORMATION
SURVEYED BY
REAL SERVE

DATUM: AHD
ORIGIN OF LEVELS: PM 300

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR DA ONLY		AFe	DF	31.10.2024				
02	ISSUED FOR DA ONLY		AFe	TC	25.09.2023				
01	PRELIMINARY ISSUE		SC	TC	12.11.2021				

Client
REVELOP
nettletontribe

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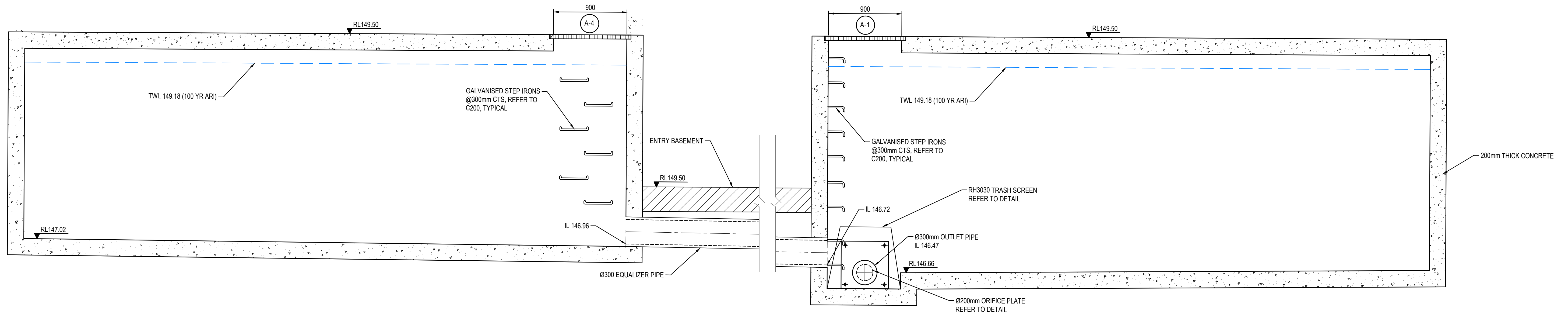
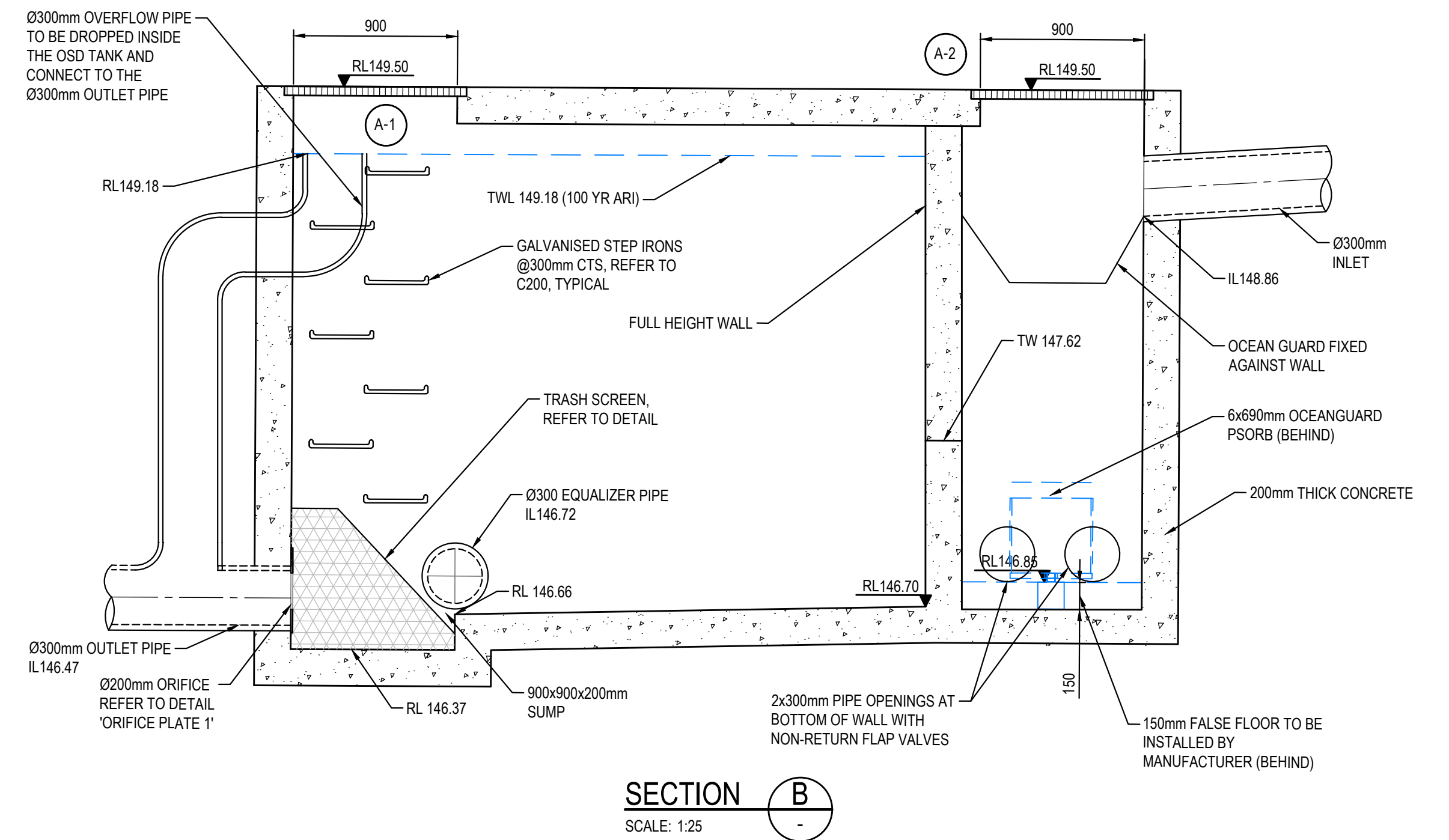


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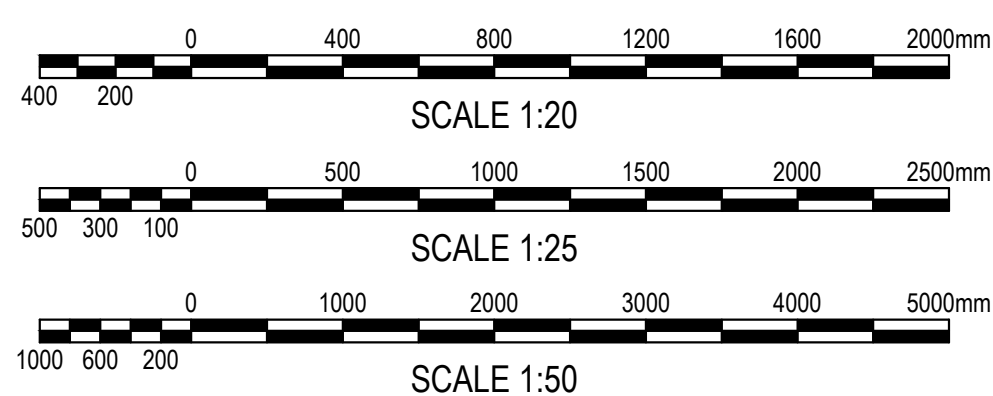
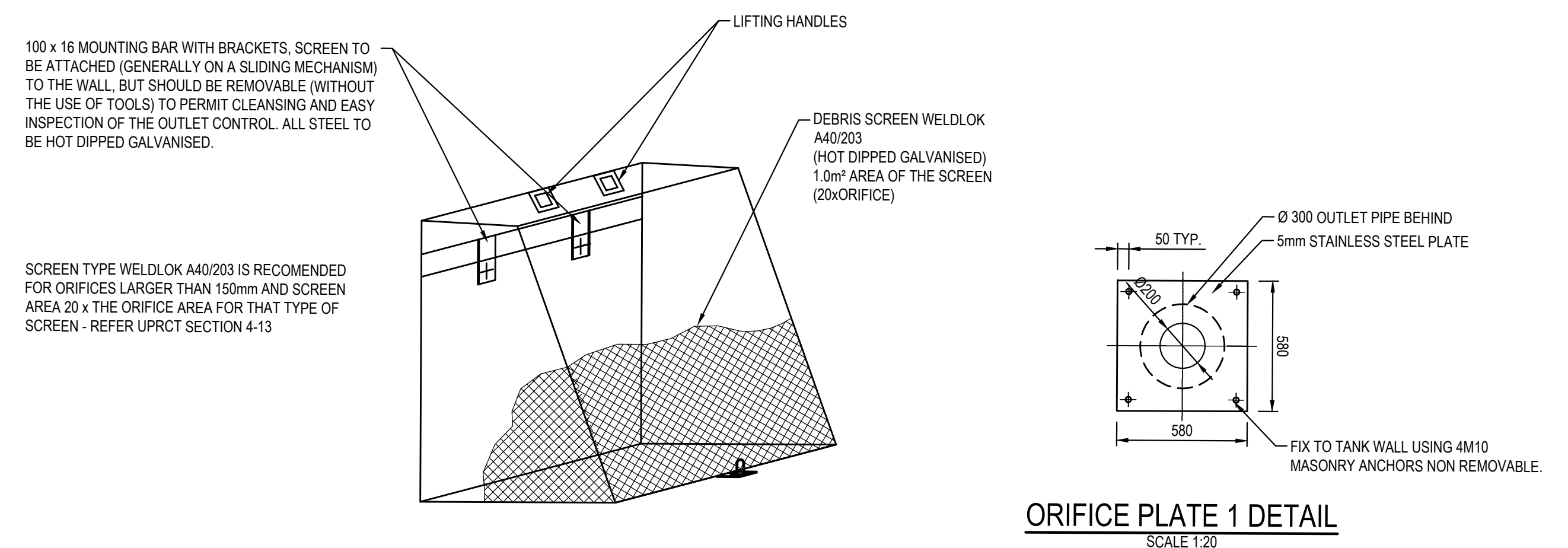


Project
**PROPOSED RETAIL DEVELOPMENT
22 FOREST WAY, FRENCHS FOREST, NSW**
Title
**STORMWATER MISCELLANEOUS DETAILS
AND PIT LID SCHEDULE**

Drawn	Designed	Date
S.Chen	T.Chan	OCT 2021
Checked	Approved	Scale @A1
T.Rozehnal	A. Francis	AS NOTED
Drawing number		Revision
21J51_DA_C200		03



ARI	PRE-DEVELOPMENT FLOW (L/s)	POST-DEVELOPMENT FLOW(L/s)
5	174	173
20	295	251
100	434	419

[illegible]

Client	REVELOP
Architect	nettletontribe
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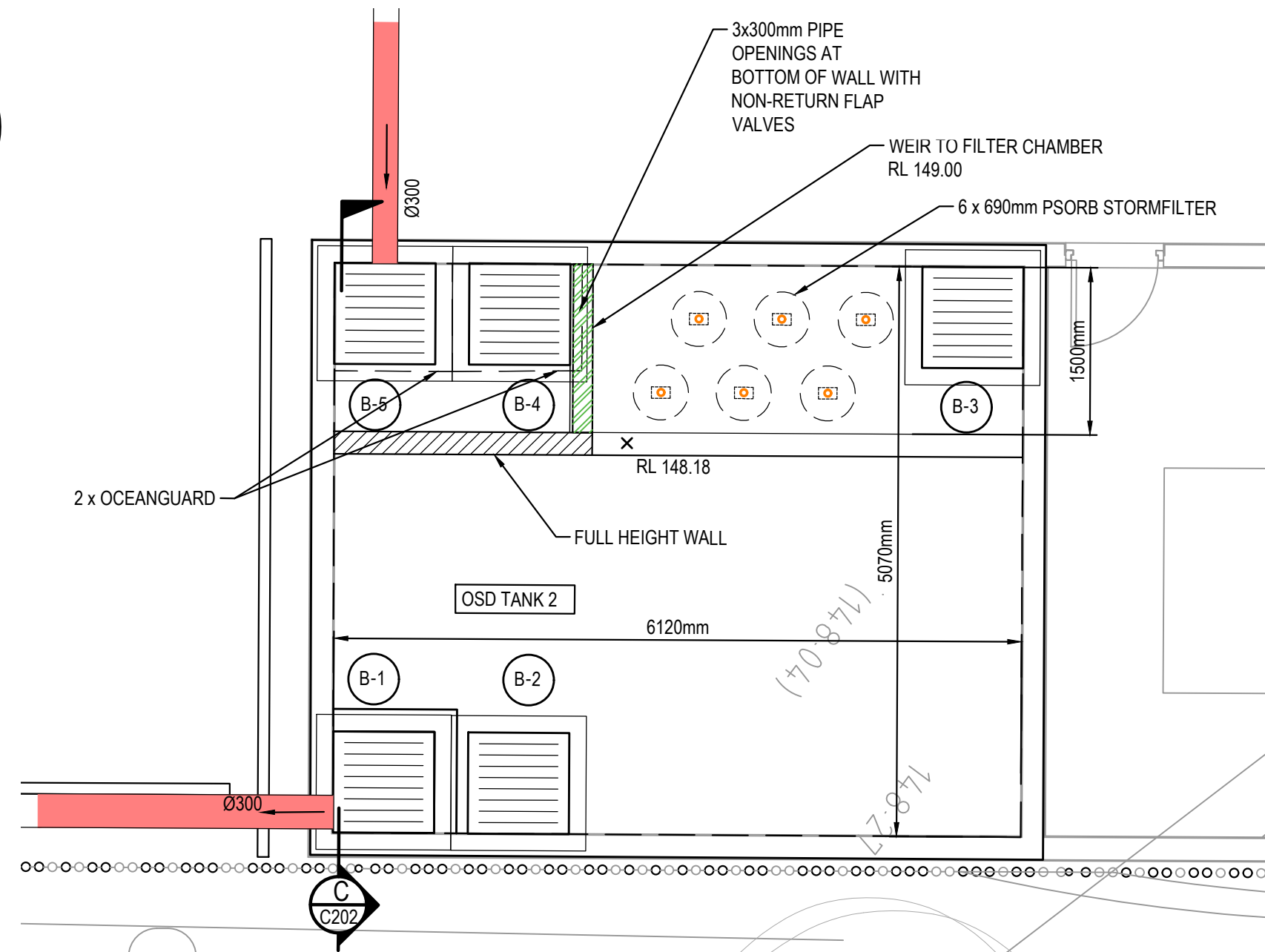
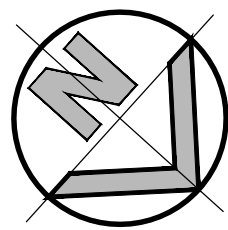
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Project	PROPOSED RETAIL DEVELOPMENT 22 FOREST WAY, FRENCHS FOREST, NSW
Title	OSD TANK DETAILS AND SECTIONS SHEET 1 OF 2

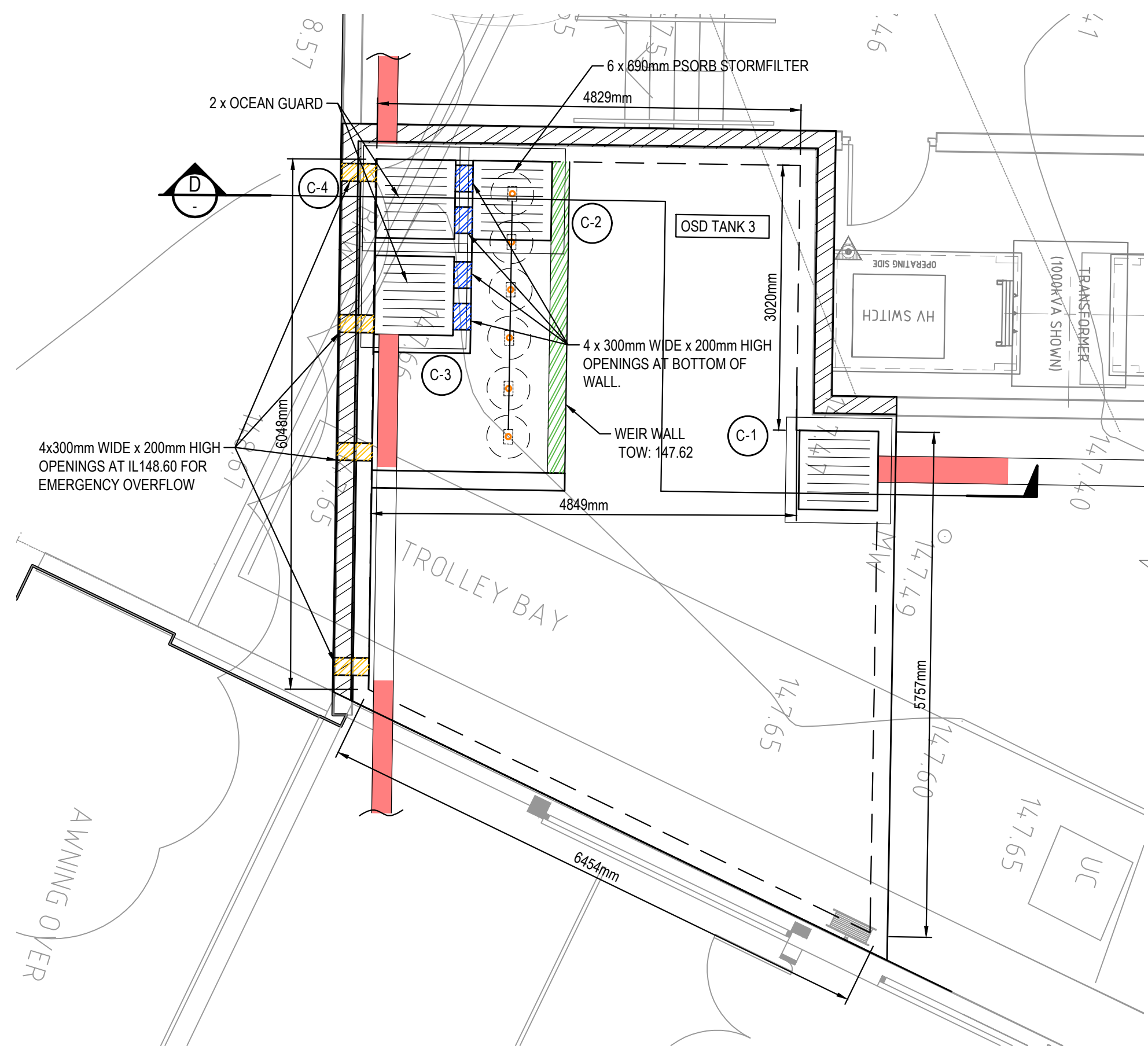
Drawn S.Chen	Designed D.Feng	Date OCT 2021
Checked F.Zhou	Approved T.Rozehnal	Scale @A1 AS NOTED
Drawing number 21J51_DA_C201		Revision 04



OSD TANK 2 PLAN

SCALE: 1:50

TOTAL AREA: 30m² (INTERNAL)
REQUIRED VOLUME: 60.2m³



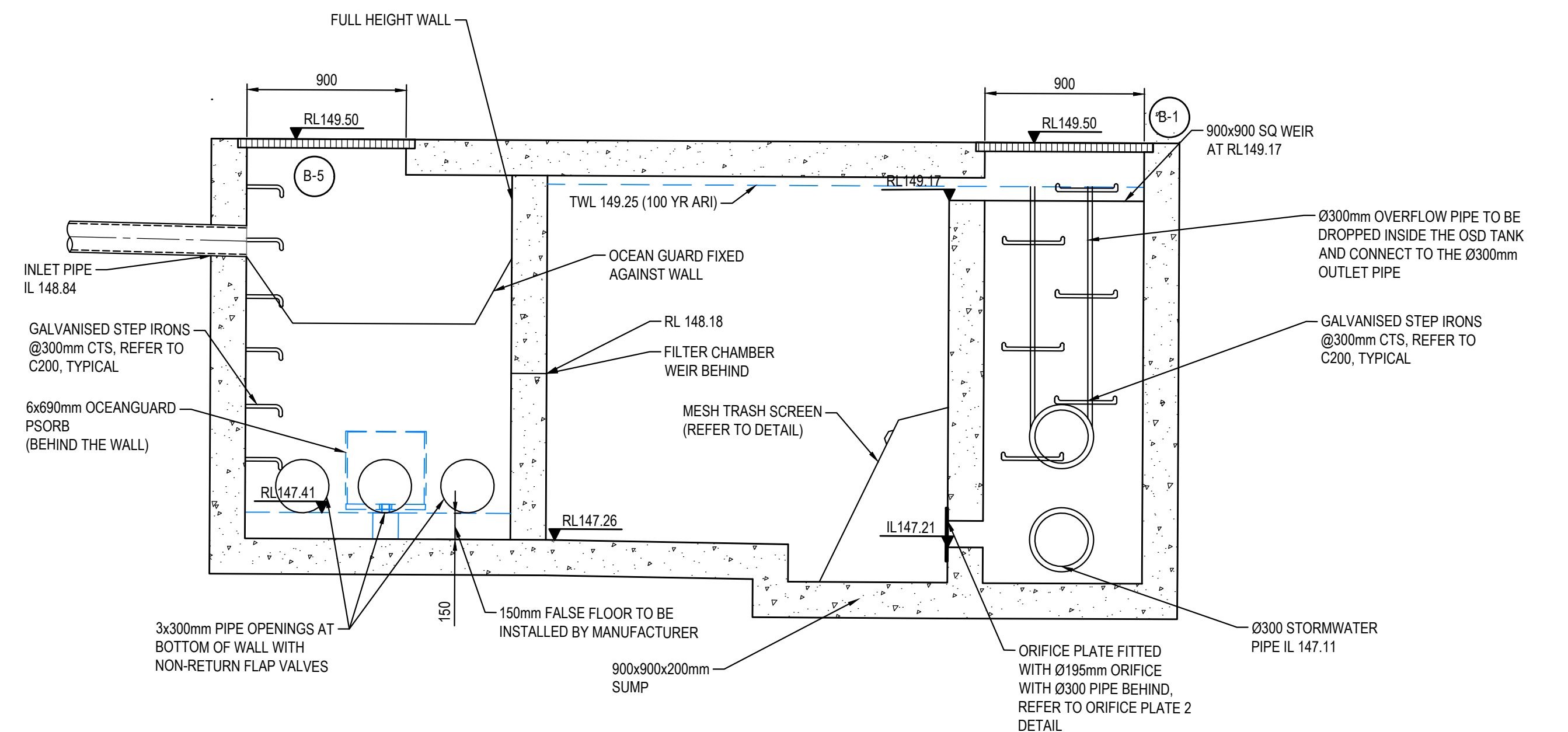
OSD TANK 3 PLAN

SCALE: 1:50

TOTAL INTERNAL AREA OSD 3: 39.8m²
REQUIRED VOLUME: 71.90m³

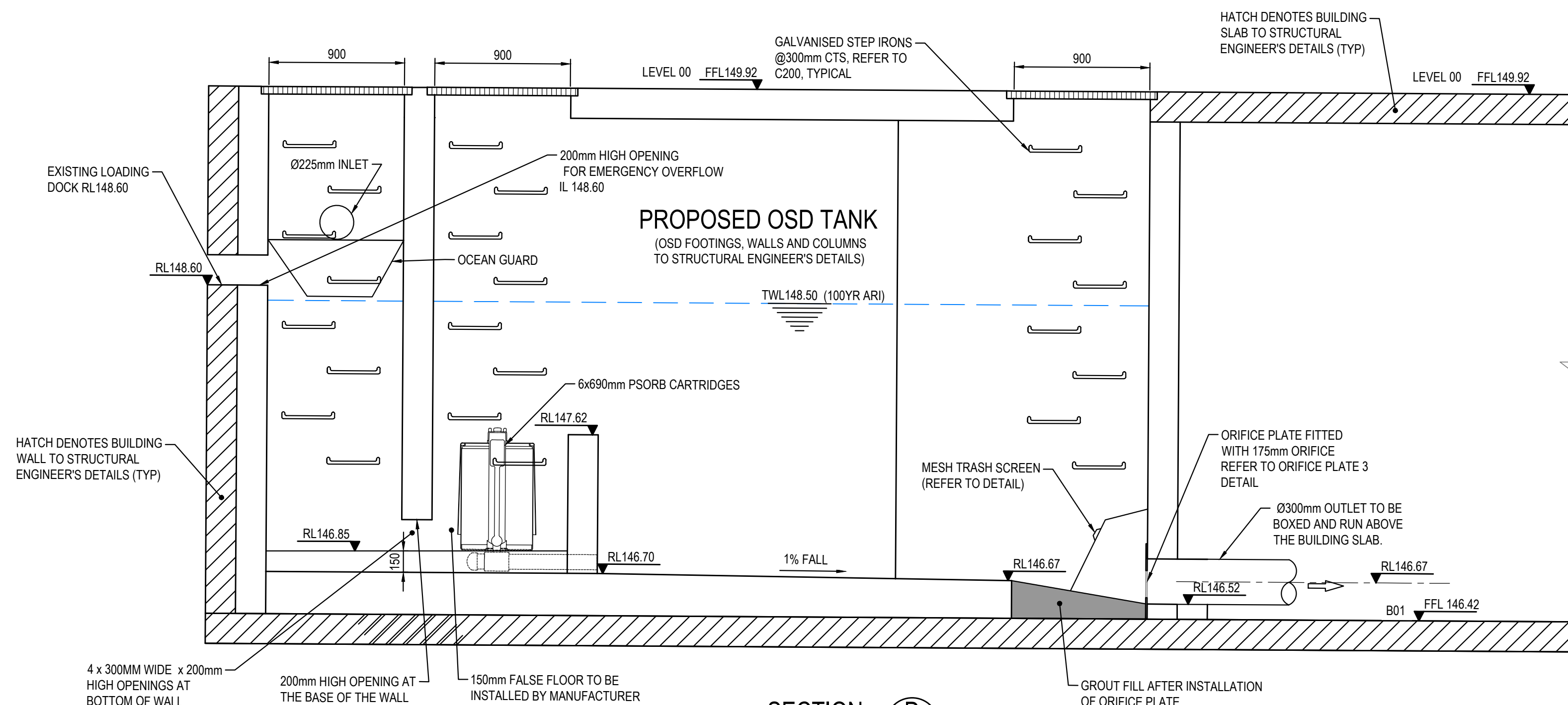
OSD TANK 3 CALCULATION SUMMARY SHEET

ARI	PRE-DEVELOPMENT FLOW (L/s)	POST-DEVELOPMENT FLOW(L/s)
5	60	53
20	101	195
100	149	80



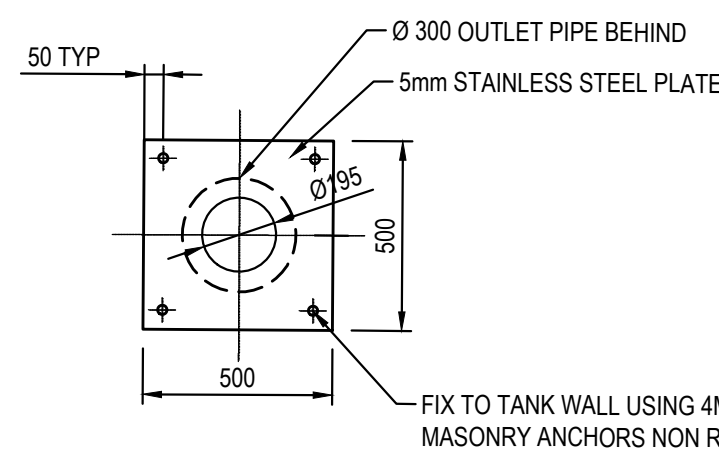
SECTION C

SCALE: 1:25



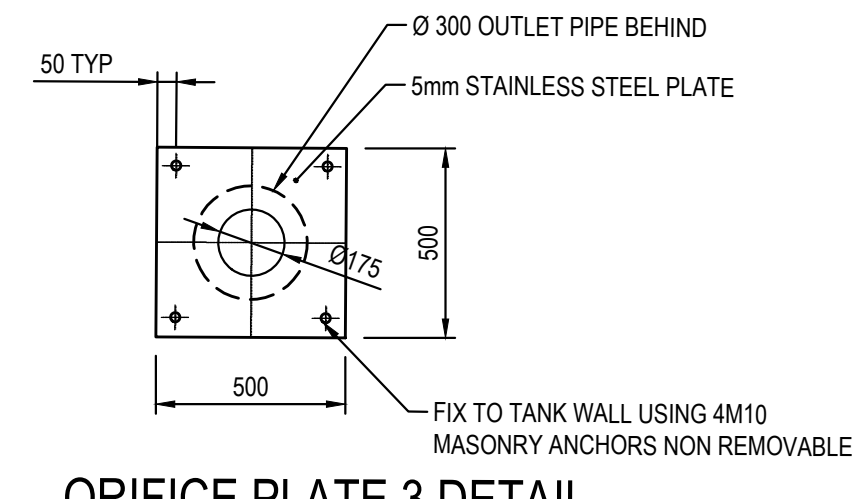
SECTION D

SCALE: 1:25



ORIFICE PLATE 2 DETAIL

SCALE 1:20

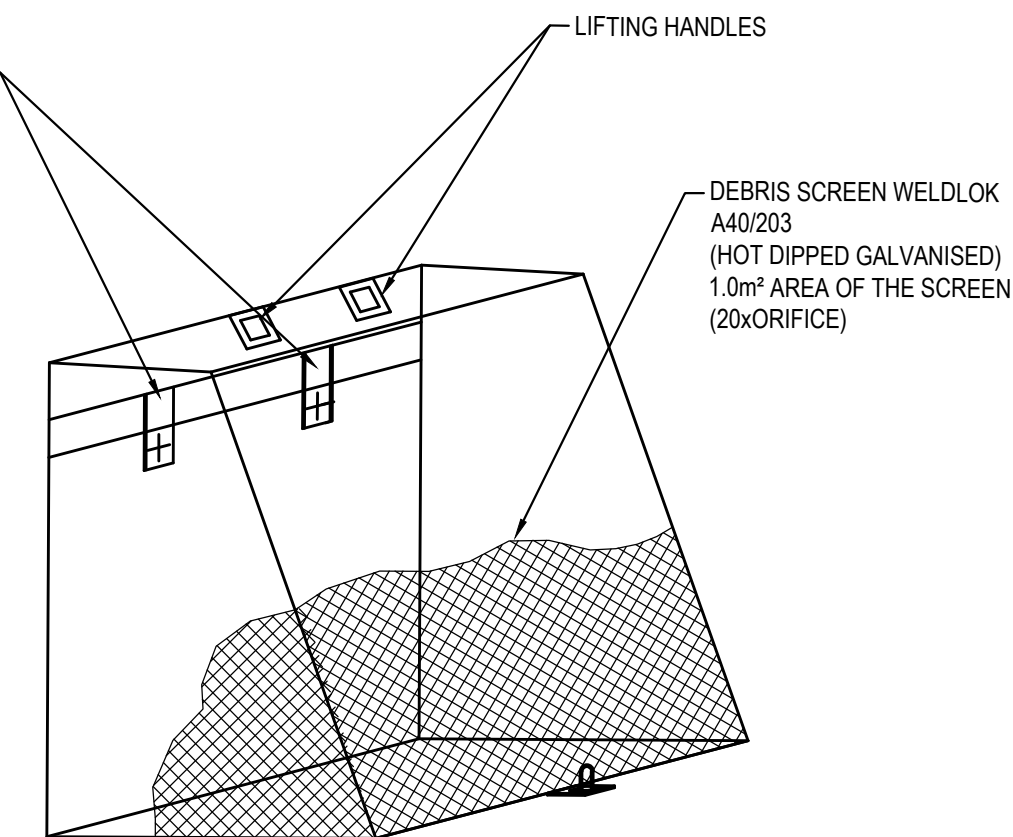


ORIFICE PLATE 3 DETAIL

SCALE 1:20

100 x 16 MOUNTING BAR WITH BRACKETS, SCREEN TO BE ATTACHED (GENERALLY ON A SLIDING MECHANISM) TO THE WALL, BUT SHOULD BE REMOVABLE (WITHOUT THE USE OF TOOLS) TO PERMIT CLEANSING AND EASY INSPECTION OF THE OUTLET CONTROL. ALL STEEL TO BE HOT DIPPED GALVANISED.

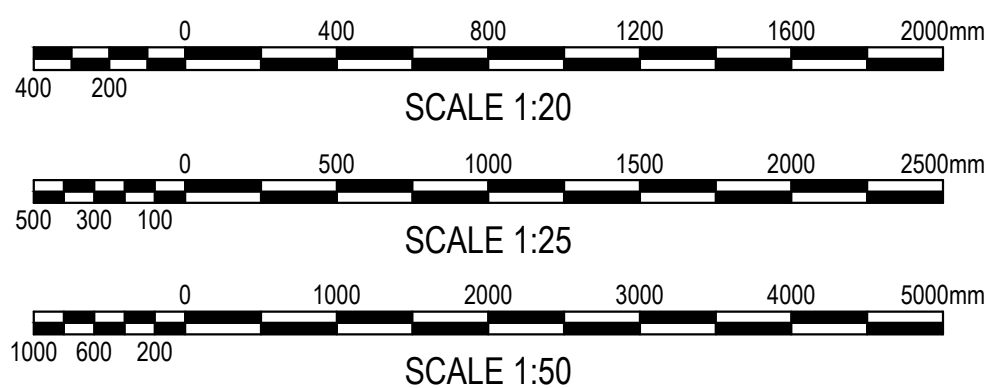
SCREEN TYPE WELDLOK A40/203 IS RECOMMENDED FOR ORIFICES LARGER THAN 150mm AND SCREEN AREA 20 x THE ORIFICE AREA FOR THAT TYPE OF SCREEN - REFER UPRTC SECTION 4-13



DEBRIS SCREEN DETAIL

NOT TO SCALE
ALL STEEL TO BE HOT DIPPED GALVANISED

FOR DA ONLY



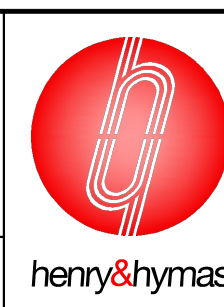
SURVEY
INFORMATION
SURVEYED BY
REAL SERVE

DATUM: AHD
ORIGIN OF LEVELS: PM 300

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
04	ISSUED FOR DA ONLY	AFe	DF	31.10.2024					
03	ISSUED FOR DA ONLY	MS	DF	29.08.2024					
02	ISSUED FOR DA ONLY	AFe	TC	25.09.2023					
01	PRELIMINARY ISSUE	SC	TC	12.11.2021					

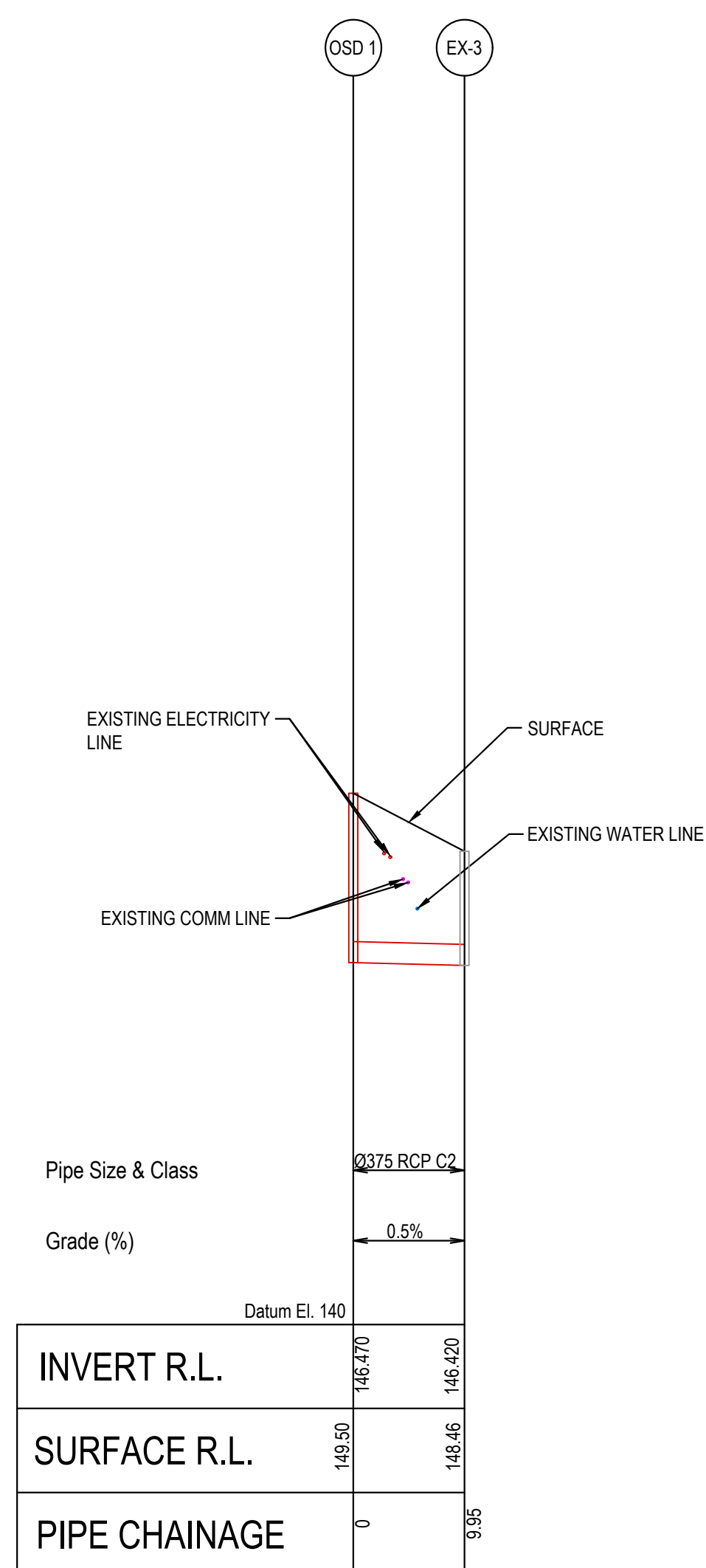
Client	REVELOP
Architect	nettletontribe
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DRAWING TO BE PRINTED IN COLOUR	

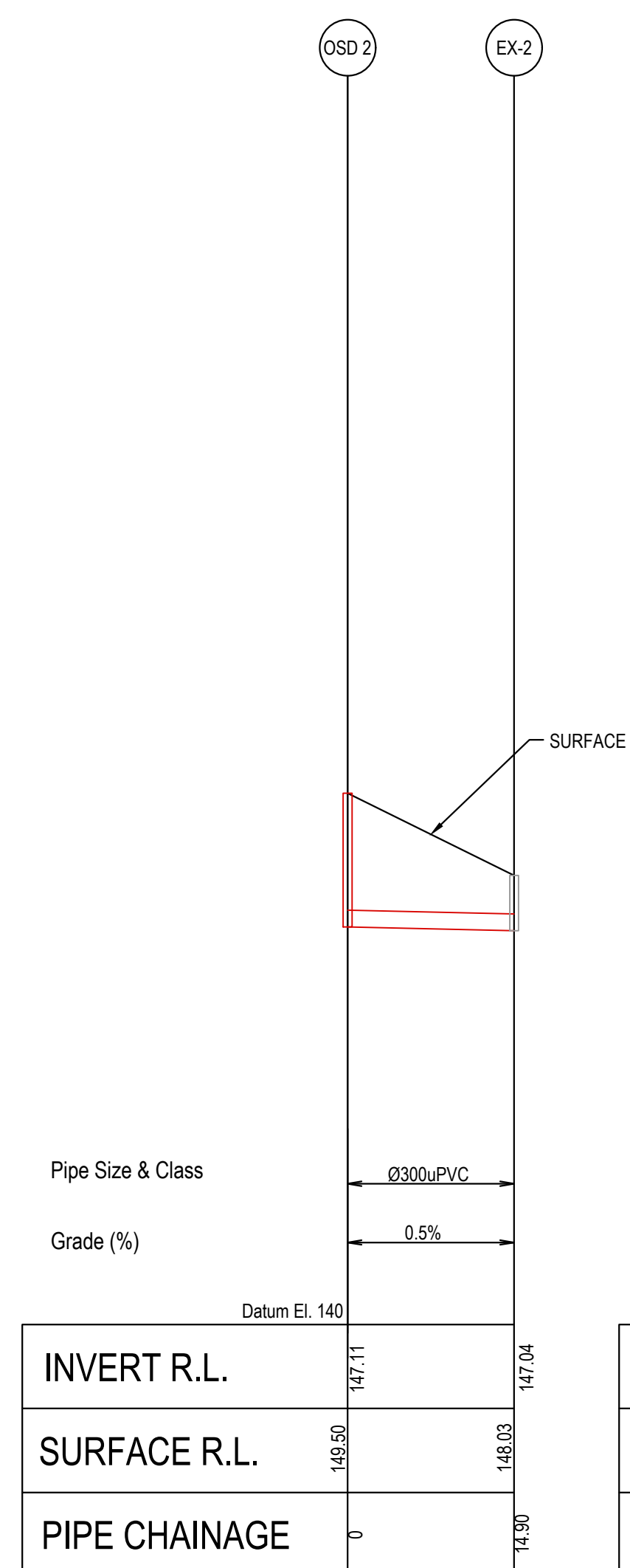


Project	PROPOSED RETAIL DEVELOPMENT 22 FOREST WAY, FRENCHS FOREST, NSW
Title	OSD TANK DETAILS AND SECTIONS SHEET 2 OF 2

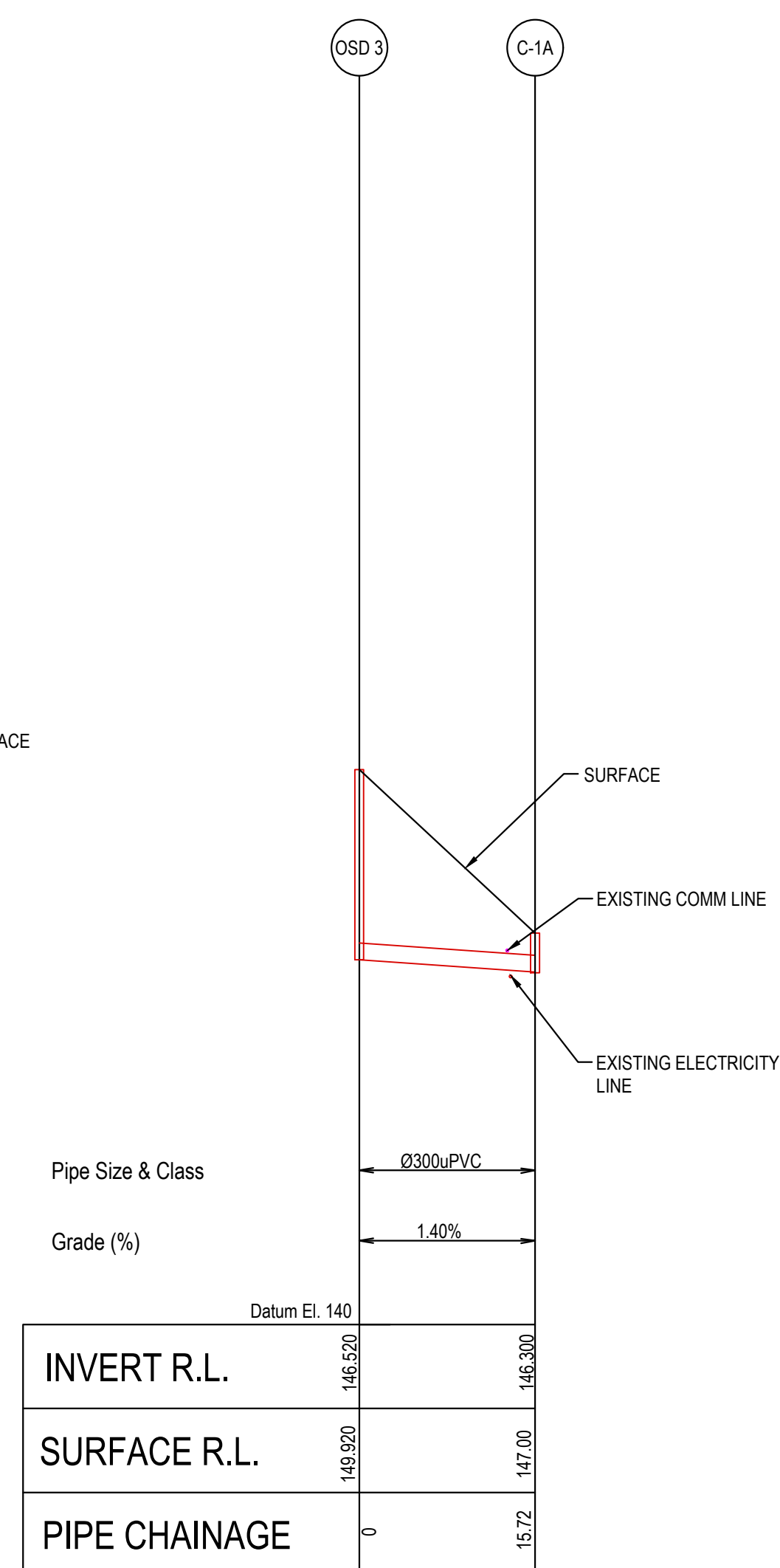
Drawn S.Chen	Designed D.Feng	Date OCT 2021
Checked F.Zhou	Approved T.Rozehnal	Scale @A1 AS NOTED
Drawing number 21J51_DA_C202		Revision 04



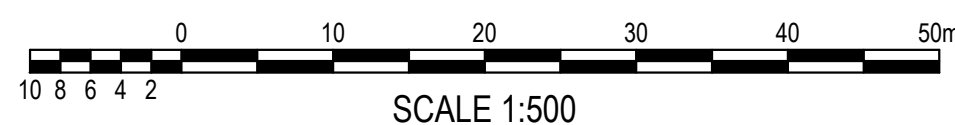
OSD 1
HORIZONTAL SCALE 1:500 @ A1
VERTICAL SCALE 1:100 @ A1



OSD 2
HORIZONTAL SCALE 1:500 @ A1
VERTICAL SCALE 1:100 @ A1

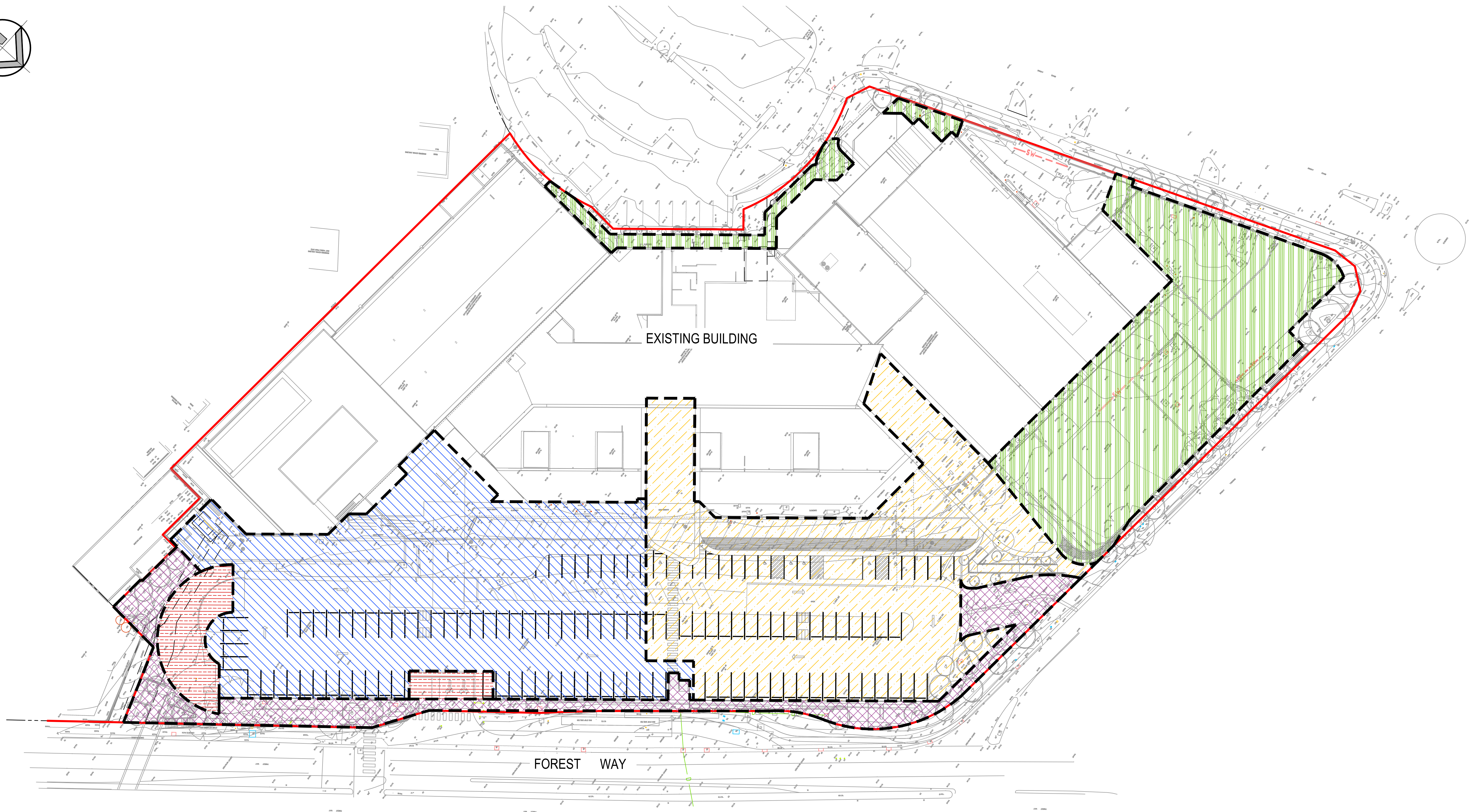
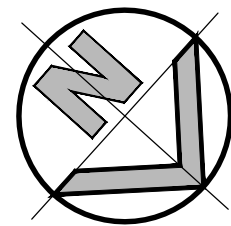


OSD 3
HORIZONTAL SCALE 1:500 @ A1
VERTICAL SCALE 1:100 @ A1



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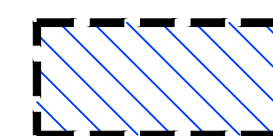
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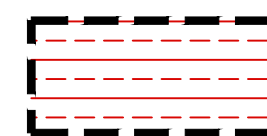
STORMWATER CATCHMENT PLAN
SCALE: 1:400

TOTAL CATCHMENT AREA: 10837.88m²

NOTE:
1. WORKS ASSUMED AS ALTERATIONS AND ADDITIONS, NO OSD PROVIDED FOR EXISTING ROOF/AREAS



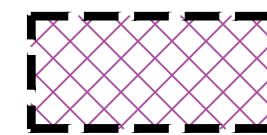
DRAINS TO OSD TANK 1 = 3439.18m²



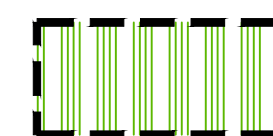
BASEMENT AREA = 389.3m²



DRAINS TO OSD TANK 2 = 3190m²



BYPASS AREA = 1049.4m²



DRAINS TO OSD TANK 3 = 2770m²



SCALE 1:400

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
REAL SERVE

DATUM: AHD
ORIGIN OF LEVELS: PM 300

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR DA ONLY		AFe	TC	31.10.2024				
02	ISSUED FOR DA ONLY		AFe	TC	26.09.2023				
01	PRELIMINARY ISSUE		SC	TC	12.11.2021				

Client
REVELOP
ARCHITECT
nettletontribe

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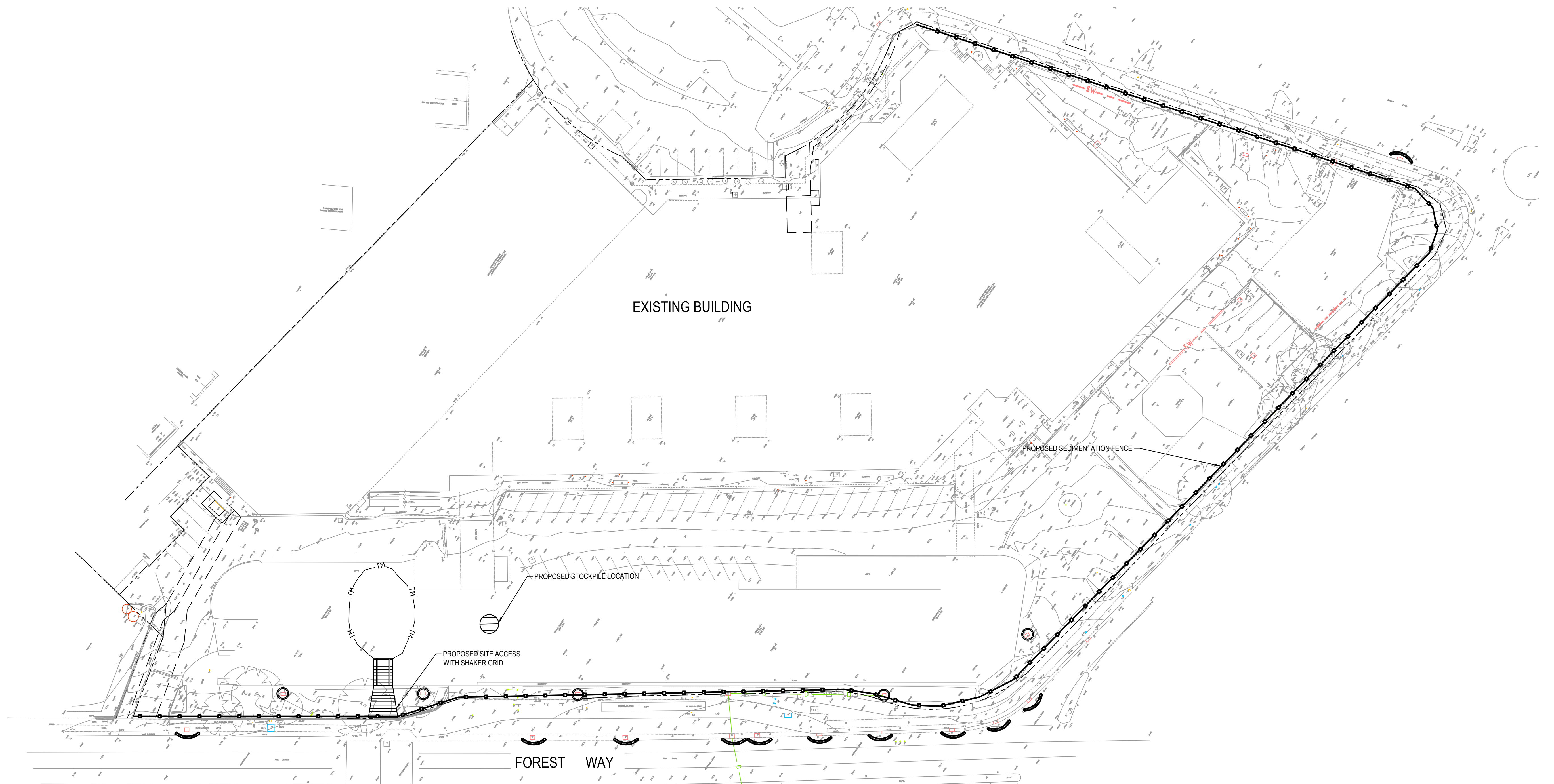


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Project
**PROPOSED RETAIL DEVELOPMENT
22 FOREST WAY, FRENCHS FOREST, NSW**
Title
STORMWATER CATCHMENT PLAN

Drawn S.Chen	Designed T.Chan	Date OCT 2021
Checked T.Rozehnal	Approved A.Francis	Scale (B1) 1:400
Drawing number 21J51_DA_C250		Revision 03



SCALE: 1:400

- ALL SEDIMENT CONTROL DEVICES ARE TO BE CONSTRUCTED, PLACED AND MAINTAINED IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL'S SPECIFICATIONS AND LANDCOM'S "SOIL AND CONSTRUCTION" MANUAL.
- ALL PERIMETER & SILTATION CONTROL MEASURES ARE TO BE PLACED PRIOR TO, OR AS THE FIRST STEP IN EARTH WORKS AND/OR CLEARING.
- THE SEDIMENT & EROSION CONTROL PLAN MAY REQUIRE FUTURE ADJUSTMENT TO REFLECT CONSTRUCTION STAGING. IT IS ALSO THE CONTRACTORS RESPONSIBILITY TO PREPARE THEIR OWN SEDIMENT AND EROSION CONTROL PLAN WHICH SUITS THE DESIGNED CONSTRUCTION STAGING.
- FILTRATION BUFFER ZONES ARE TO BE FENCED OFF AND ACCESS PROHIBITED TO ALL PLANT AND MACHINERY.
- ALL TEMPORARY EARTH BERMS, DIVERSIONS & SILT DAM EMBANKMENTS ARE TO BE MACHINE COMPACTED, SEEDED & MULCHED FOR TEMPORARY VEGETATION COVER AS SOON AS THEY HAVE BEEN FORMED.
- ALL SEDIMENT TRAPPING STRUCTURES AND DEVICES ARE TO BE INSPECTED AFTER STORMS FOR STRUCTURAL DAMAGE OR CLOGGING. TRAPPED MATERIAL IS TO BE REMOVED TO A SAFE LOCATION.
- ALL TOPSOIL IS TO BE STOCKPILED ON SITE FOR REUSE (AWAY FROM TREES AND DRAINAGE LINES). MEASURES SHALL BE APPLIED TO PREVENT EROSION OF THE STOCKPILES.

- ALL EARTHWORK AREAS SHALL BE ROLLED EACH EVENING TO SEAL THE EARTHWORKS.
- ALL FILLS ARE TO BE LEFT WITH A LIP AT THE TOP OF THE SLOPE AT THE END ALL CUT AND FILL SLOPES ARE TO BE SEEDED AND STRAW MULCHED WITHIN 14 DAYS OF COMPLETION OF FORMATION U.N.O. BY LANDSCAPE ARCHITECTS.
- UPON COMPLETION OF ALL EARTHWORKS OR AS DIRECTED BY COUNCIL SOIL CONSERVATION TREATMENTS SHALL BE APPLIED SO AS TO RENDER AREAS THAT HAVE BEEN DISTURBED. EROSION PROOF WITHIN 14 DAYS.
- EROSION AND SILT PROTECTION MEASURES ARE TO BE MAINTAINED AT ALL TIMES.
- THESE DRAWINGS SHOW THE INITIAL STAGES OF THE SITE CONSTRUCTION AND EROSION CONTROLS. AS CONSTRUCTION CONTINUES IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL PITS ARE PROGRESSIVELY FITTED WITH MESH AND GRAVEL INLET FILTERS AS REQUIRED
- ALL EXISTING COUNCIL PITS WITHIN 50m OF THE SITE BOUNDARIES ARE TO BE FITTED WITH MESH AND GRAVEL INLET FILTERS

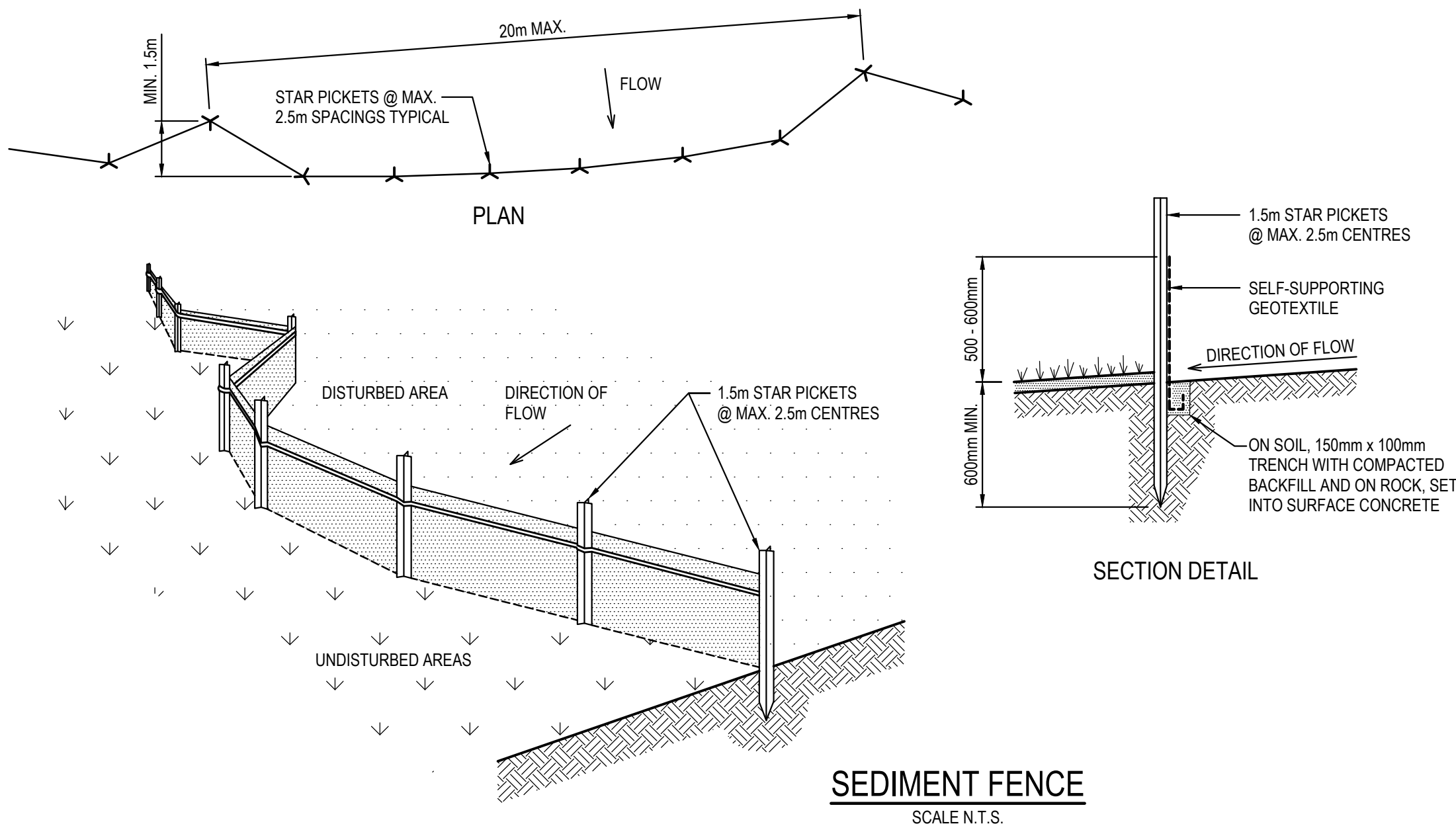
	EXISTING BOUNDARY
	PROPOSED SEDIMENTATION FENCE
	TRAFFIC MANOEUVRING
	PROPOSED VEHICLE SHAKER GRID
	PROPOSED STABILISED SITE ACCESS
	PROPOSED GEOTEXTILE INLET

PROPOSED STOCKPILE LOCATION

Plan view of the proposed sewerage network. The diagram shows several infrastructure lines: EXISTING SEWER LINE (indicated by a line with 'S'), EXISTING STORMWATER PIPE (indicated by a line with 'SW'), EXISTING ELECTRICAL MAINS LINE (indicated by a line with 'E'), EXISTING TELSTRA LINES (indicated by a line with 'T'), EXISTING WATER LINE (indicated by a line with 'W'), and EXISTING DRAINAGE LINE (indicated by a line with 'D'). A PROPOSED MESH & GRAVEL INLET FILTER is shown as a semi-circular structure. A dimension line indicates a distance of 4.60 between two points on the drainage line.

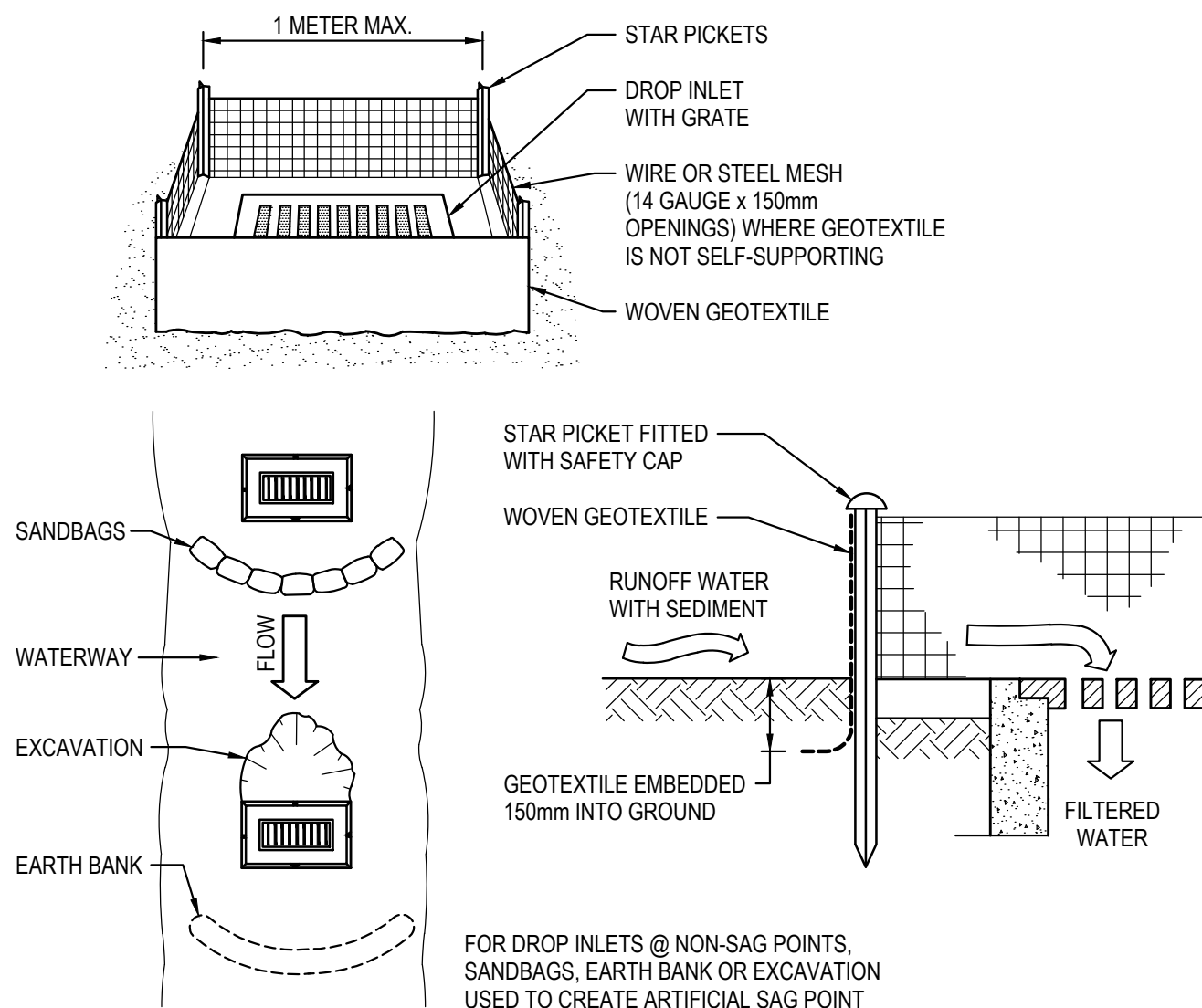
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SEDIMENT FENCE CONSTRUCTION NOTES:

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.
2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.5m LONG STAR PICKETS INTO GROUND @ 2.5m INTERVALS (MAX.) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP. 6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

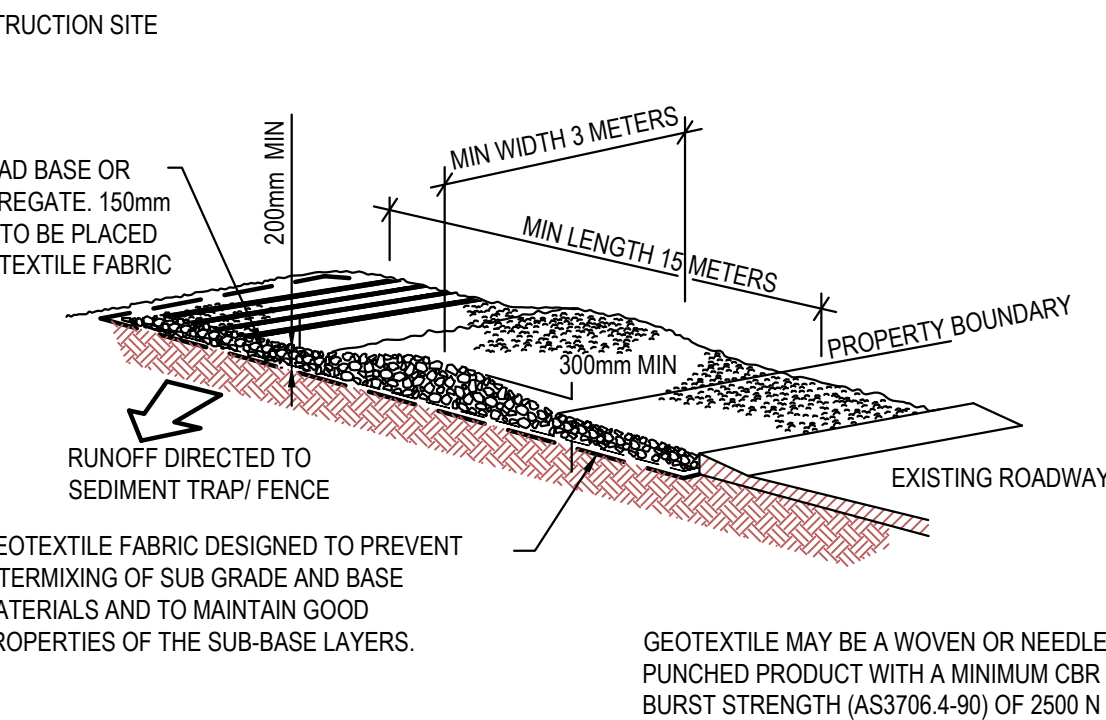
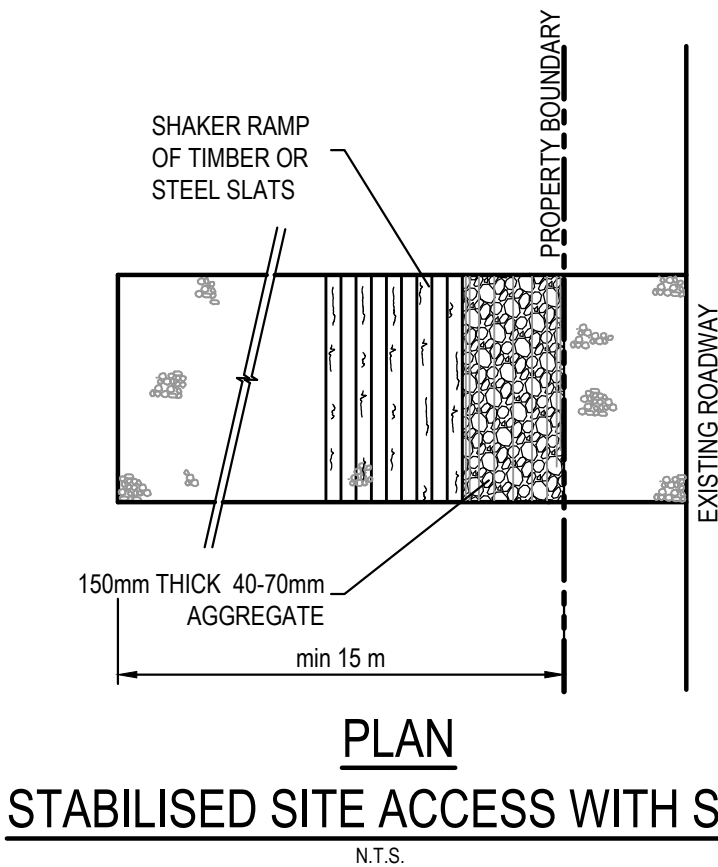


GEOTEXTILE INLET FILTER CONSTRUCTION NOTES:

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE.
2. PICKET SPACING TO BE MAXIMUM 1.0m.
3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
4. DO NOT COVER THE INLET WITH GEOTEXTILES UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

GEOTEXTILE INLET FILTER

SCALE N.T.S.

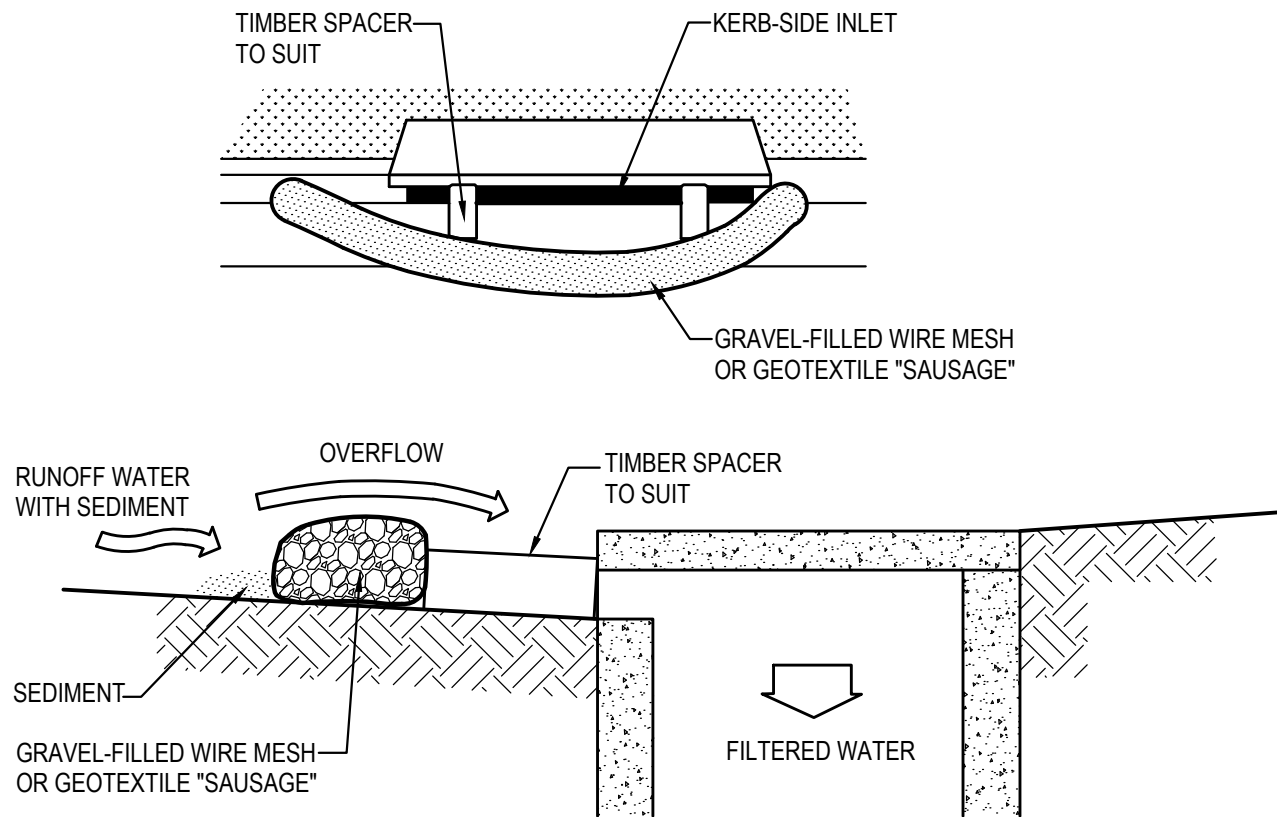


STABILISED SITE ACCESS WITH SHAKER RAMP

N.T.S.

NOTES:

1. THIS DEVICE IS TO BE LOCATED AT ALL EXITS FROM CONSTRUCTION SITE.
2. THIS DEVICE IS TO BE REGULARLY CLEANED OF DEPOSITED MATERIAL SO AS TO MAINTAIN A 50mm DEEP SPACE BETWEEN PLANKS.
3. ANY UNSEALED ROAD BETWEEN THIS DEVICE AND NEAREST ROADWAY IS TO BE TOPPED WITH 100mm THICK 40-70mm SIZE AGGREGATE.
4. ALTERNATIVELY, THREE(3) PRECAST CONCRETE CATTLE GRIDS (AS MANUFACTURED BY "HUMES CONCRETE MAY BE USED. 1, 2 & 3 ABOVE ALSO APPLY.

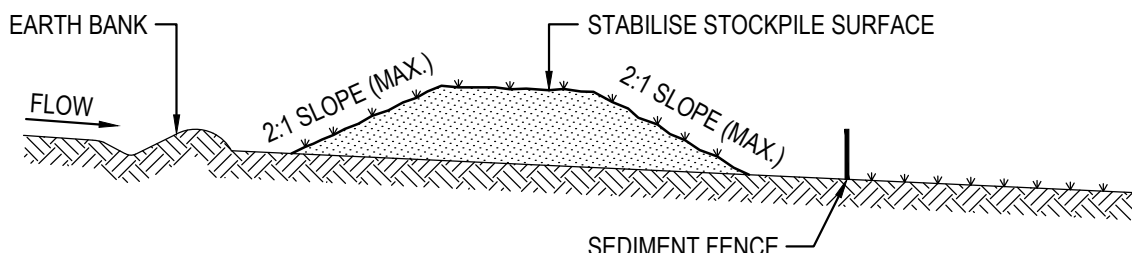


MESH & GRAVEL INLET FILTER CONSTRUCTION NOTES:

1. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT AND FILL IT WITH 25mm TO 50mm GRAVEL.
2. FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150mm HIGH x 400mm WIDE.
3. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET. MAINTAIN THE OPENING WITH SPACER BLOCKS.
4. FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BYPASSING THE FILTER.
5. SANDBAGS FILLED WITH GRAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDING THEY ARE PLACED SO THAT THEY CAN FIRMLY ABUT EACH OTHER AND SEDIMENT / LADEN WATERS CANNOT PASS BETWEEN.

MESH & GRAVEL INLET FILTER

SCALE N.T.S.



STOCKPILE CONSTRUCTION NOTES:

1. PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
4. WHERE THEY ARE TO BE PLACED FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED E.S.C.P. OR S.W.M.P. TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
5. CONSTRUCT EARTH BANKS ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES 1 TO 2 METRES DOWNSLOPE.

STOCKPILES

SCALE N.T.S.

FOR DA ONLY

SURVEY
INFORMATION
SURVEYED BY
REAL SERVE

DATUM: AHD
ORIGIN OF LEVELS: PM 300

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
02	ISSUED FOR DA ONLY	Afe	TC	25.09.2023					
01	PRELIMINARY ISSUE	SC	TC	12.11.2021					

Client	REVELOP
Architect	nettletontribe
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Project	PROPOSED RETAIL DEVELOPMENT 22 FOREST WAY, FRENCHS FOREST, NSW
Title	SEDIMENT AND EROSION CONTROL DETAILS

Drawn S.Chen	Designed T.Chan	Date OCT 2021
Checked T.Rozehnal	Approved A.Francis	Scale @A3 N.T.S
Drawing number 21J51_DA_SE02		Revision 02



APPENDIX B: MUSIC MODEL

henry&hymas

