

6th September 2022

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RE: 204-210 Parramatta Road, Auburn, NSW 2144 – Facts and Contentions

Dear Lesley,

In response to the Statement of Facts and Contentions (case no: 2022/00175835) raised by Cumberland City Council, Meinhardt Group has been engaged by Skematics to address all stormwater contentions identified in Part B – Contentions. The stormwater contentions raised by Council have been outlined below with responses provide by Meinhardt Group.

The information presented below must be read in conjunction with the following documents:

- Drawing Sheet - General Arrangement plan – Sheet 1 of 3 [P07]
- Drawing Sheet - General Arrangement plan – Sheet 2 of 3 [P04]
- Drawing Sheet - General Arrangement plan – Sheet 3 of 3 [P04]
- Drawing Sheet – Pit and Pipe Schedule [P06]
- Drawing Sheet - OSD Details [P04]
- Drawing Sheet - Catchment Analysis, Hydraulic Assessment, OSD Calculations [P01]

Contention by Council

1. (8) Contrary to clause 6.4(1)(d) of the Cumberland Local Environmental Plan 2021, adequate arrangements have not been made for stormwater drainage.

Response by Meinhardt

Clause 6.4(1)(d) of the Cumberland Local Environmental Plan 2021 states;

‘Development consent must not be granted to development unless the consent authority is satisfied that the following services that are essential for the development are available or that adequate arrangements have been made to make them available when required- (d) stormwater drainage or on-site conservation’

The proposed development has provided on-site drainage and an on-site detention system in accordance with Cumberland Development Control Plan 2021 and the Upper Parramatta River Catchment Trust “On-site Detention Handbook” (Third edition). Refer to drawing sheet C100, C210, C740 & C800.

Furthermore, a new stormwater drainage network has been proposed which will be extended from existing stormwater drainage network in Braemar Avenue to the subject site. This stormwater drainage network will reduce stormwater runoff from Braemar Avenue due to the additional Kerb inlet pits that have been proposed. Refer to drawing sheet C100, C101, & C102.

Contention by Council

2. (9) The development does not comply with the provisions of the Cumberland Development Control Plan 2021 at Part G4 section 2.4 (On-site detention) as the development fails to provide adequate stormwater infrastructure.

Particulars

- (a) The development has not made provision for the stormwater pipeline extension underneath the kerb and gutter. The proposed stormwater drainage works on the public road reserve at Braemar Avenue would interfere with all existing services and neighbours’ driveways.

Response by Meinhardt

The stormwater drainage network proposed on Braemar Avenue (refer to drawing sheet C100, C101, & C102) has been located underneath the kerb and gutter. The proposed stormwater drainage network will not impact existing services located in Braemar Avenue verge or existing property driveways. Additional kerb inlet pits have been proposed to collect surface runoff in Braemar Avenue. The proposed stormwater drainage network will improve the existing stormwater drainage infrastructure in Braemar Avenue.

The proposed drainage network will connect to an existing stormwater pit (ID 5/15SP018506) located adjacent to the roundabout in Braemar Avenue. The existing stormwater pit is in the verge immediately downstream of an existing crossover which provides access to 12 Braemar Avenue, Auburn. Minor construction works of the layback and vehicle crossing will be required to install the proposed stormwater drainage network to the existing Council pit. Construction works should be undertaken to limit the inconvenience imposed to the resident of the property.

Contention by Council

- (b) Fully detailed designs, including a long section of the pipe, a pipe trench cross-section detail and connection point into Council's drainage system, have not been submitted for all proposed drainage works within the road reserve. All the design details should be provided, including hydraulic grade lines based on the 5% and 1% AEP storms.

Response by Meinhardt

Refer to drawing sheet C210 for stormwater drainage long section, pipe trench cross-section detail. Refer to drawing sheet C102 for connection point into Council's drainage system. Refer to longitudinal section of the proposed stormwater drainage network for the hydraulic grade lines based on 5% and 1% AEP storms.

Contention by Council

- (c) The development has not designed the on-site detention system as a submerged outlet. The orifice outlet should be designed to function as a submerged outlet, with submerged conditions to be reflected in the on site detention (OSD) calculations. OSD should be provided in accordance with the Stormwater Drainage Part G4 of the Cumberland Development Control Plan 2021 and the Upper Parramatta River Catchment Trust "On-Site Detention Handbook" (Third edition).

Response by Meinhardt

Based on the following engineering information below, we believe the OSD should not be modelled with a submerged outlet.

- A hydraulic assessment using DRAINS has been undertaken for the proposed stormwater network in Braemar Avenue. The assessment has modelled the 1% AEP stormwater event and considered all upstream and downstream catchments. The catchments have been delineated using QGIS with the latest Digital Elevation Model (DEM) and can be seen on drawing sheet C800 – Catchment Management Plan. Furthermore, the assessment has assumed a tailwater level of 18.42m (150mm below the surface level) at the existing pit (ID 5/15SP018506). Based on this assessment, the hydraulic grade line at the proposed kerb inlet pit adjacent to the subject site is 20.08m AHD. The centre line level of the orifice in the OSD is 20.19m AHD. **This assessment has shown that the OSD will not operate under a submerged outlet scenario.**
- The proposed OSD has been designed in accordance with Stormwater Drainage Part G4 of the Cumberland Development Control Plan 2021 and the Upper Parramatta River Catchment Trust "On-Site Detention Handbook" (Third edition). Refer to sheet C800 – UPRCT OSD Calculations for OSD calculations.
- The outlet pipe from the OSD has been sized to prevent submergence.
- The **subject site is located at the top of the local catchment area** therefore is less likely to be impacted by downstream tailwater conditions. Refer to drawing sheet C800 – Catchment Management Plan
- **The subject is not impacted by flooding** in all scenarios and therefore will not be impacted by flood waters. Refer to drawing sheet C800 – Flood Hazard Category – Cumberland City Council.

Contention by Council

- (d) Contrary to section 2.5 of Part G4 Stormwater Drainage of Cumberland Development Control Plan 2021 and Clause 7.7.3 of Council's On-Site Stormwater Detention Policy, it has not been demonstrated that the overland flows generated from upstream catchment are not obstructed and "intercepted and accepted within" the property being developed and conveyed through the site, bypassing the OSD system. The Applicant's engineer should submit detailed calculations for the proposed overland flow channel, which should include the size of the upstream catchment and the cross-sectional detail of the swale/channel on the stormwater plans.

Response by Meinhardt

An engineering assessment using catchment delineation has been undertaken to identify upstream catchments. DEM has been obtained from Elvis and inserted into QGIS to determine the sized of the upstream catchment and their respective flow path (stream segments). The immediate upstream catchment has been identified on the Catchment Management Plan shown on drawing sheet C800. Based on this assessment, the upstream catchment has an area of 988m² and drains via surface runoff down the pedestrian footpath between the subject site and upstream properties. The stream segments derived using QGIS have been identified on the Catchment Management Plan and shows that surface runoff will drain down the pedestrian footpath.

The above engineering assessment is supported by images taken from Parramatta Road and Hunter Street as shown on drawing sheet C800 – Image 1 and Image 2. Image 1 (Parramatta Road) shows a pedestrian footpath allowing surface runoff to drain from north to south towards Hunter Street. Image 2 (Hunter Street) shows several grated into pits allow collection surface runoff. Furthermore, Image 2 shows a kerb preventing surface runoff from draining into downstream properties.

The pedestrian footpath and grated inlet pits have been identified on survey plans and shown on drawing sheet C100 and C101. The survey additionally identified an existing dish drain on the pedestrian crossing as shown on drawing sheet C101.

The information presented above has identified the **upstream catchment will not drain onto the subject site** and therefore no allowance needs to be provided through the subject site.

Contention by Council

- (e) Contrary to section 2.4 of Part G4 Stormwater Drainage of the Cumberland Development Control Plan 2021, detailed design, cross-section of the tank and calculation have not been provided for basement pump out system.

Response by Meinhardt

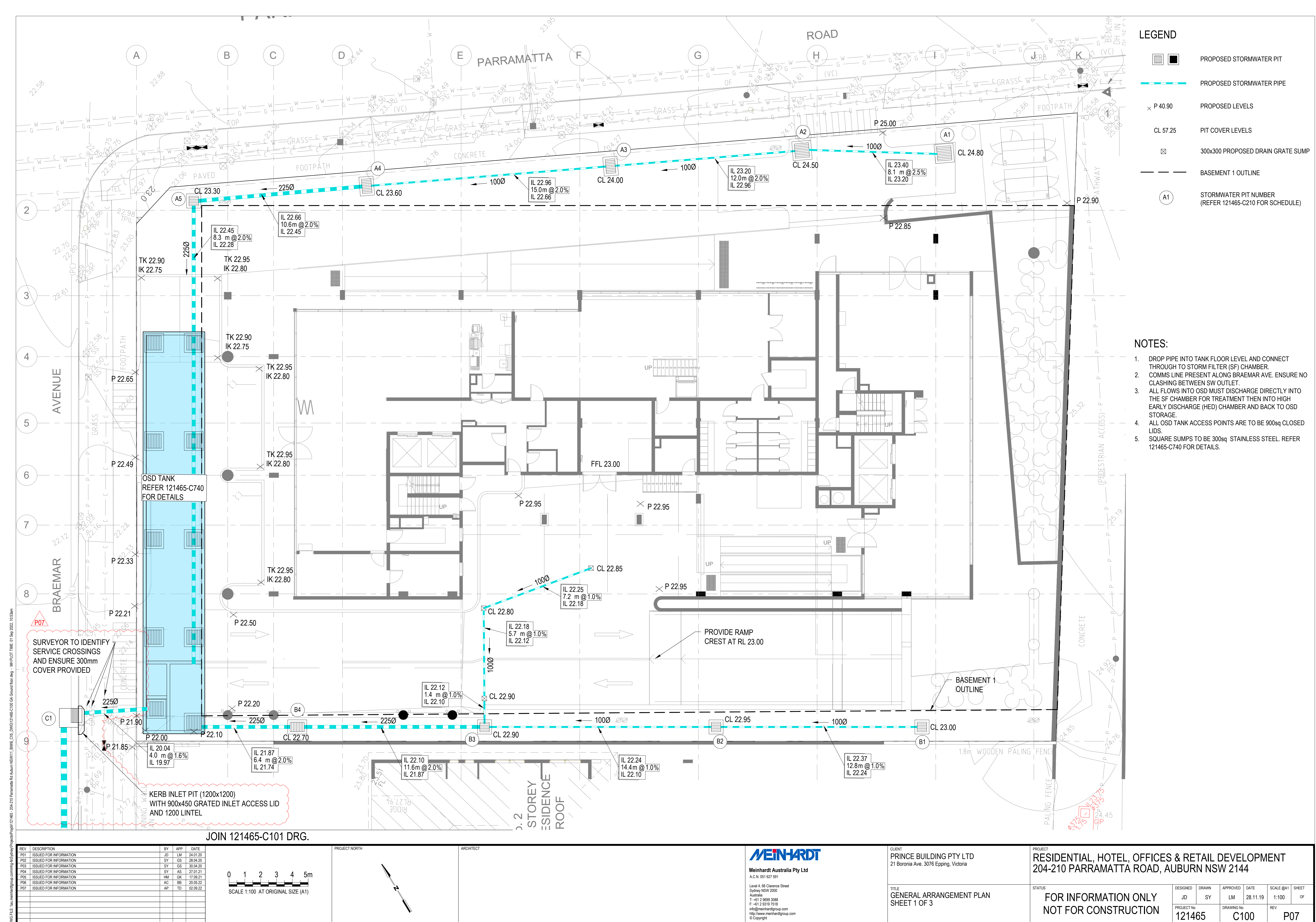
Refer to drawing sheet H097, H098, & H099 for detailed design, cross-section of the basement pump-out tank and calculations.

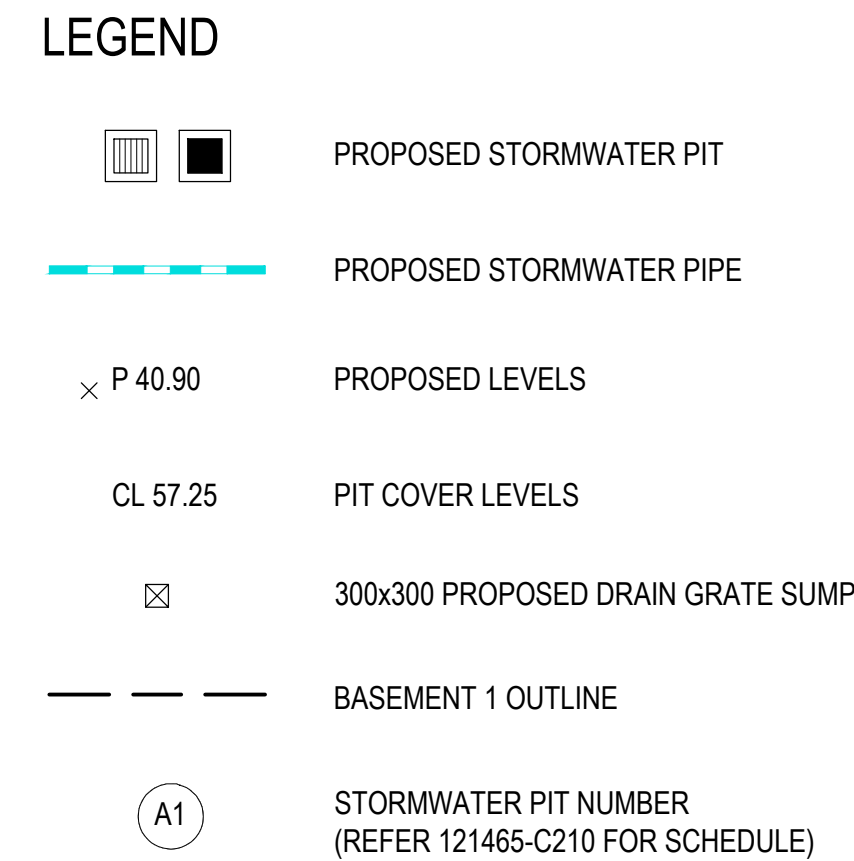
Trust the above response is suffice and should additional information be required, please feel free to contact the undersigned.

Kind regards,

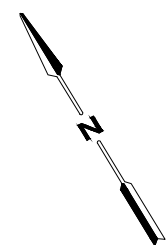


Tristan Doherty
Senior Civil Engineer, MIEAust





1. DROP PIPE INTO TANK FLOOR LEVEL AND CONNECT THROUGH TO STORM FILTER (SF) CHAMBER.
2. COMMS LINE PRESENT ALONG BRAEMAR AVE. ENSURE NO CLASHING BETWEEN SW OUTLET.
3. ALL FLOWS INTO OSD MUST DISCHARGE DIRECTLY INTO THE SF CHAMBER FOR TREATMENT THEN INTO HIGH EARLY DISCHARGE (HED) CHAMBER AND BACK TO OSD STORAGE.
4. ALL OSD TANK ACCESS POINTS ARE TO BE 900sq CLOSED LIDS.
5. SQUARE SUMPS TO BE 300sq STAINLESS STEEL. REFER 121465-C740 FOR DETAILS.



ARCHITECT

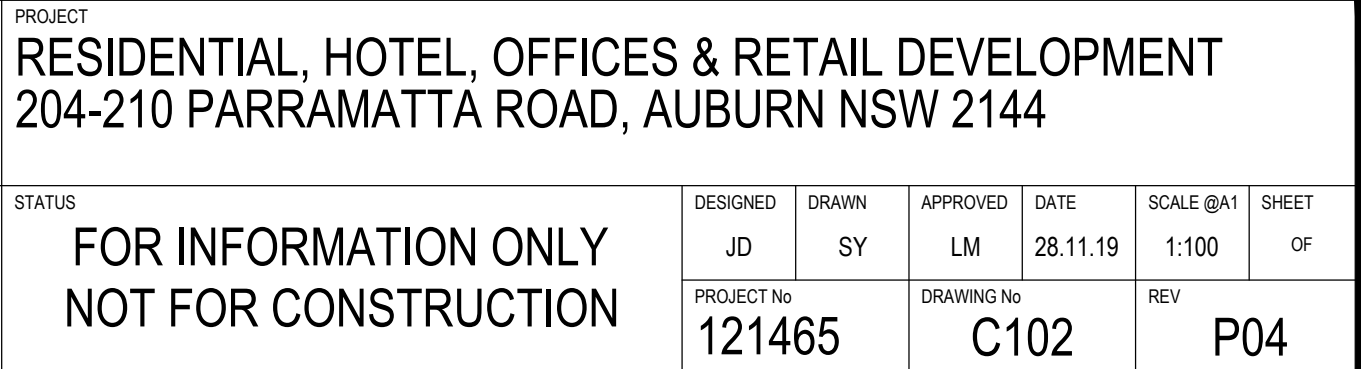
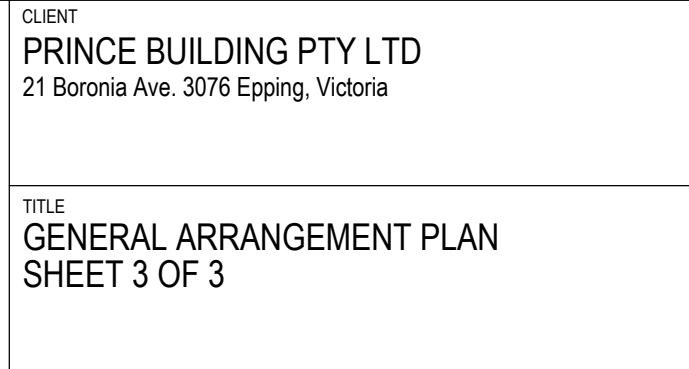
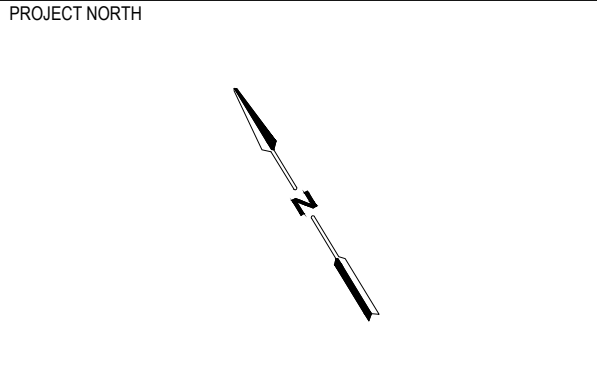
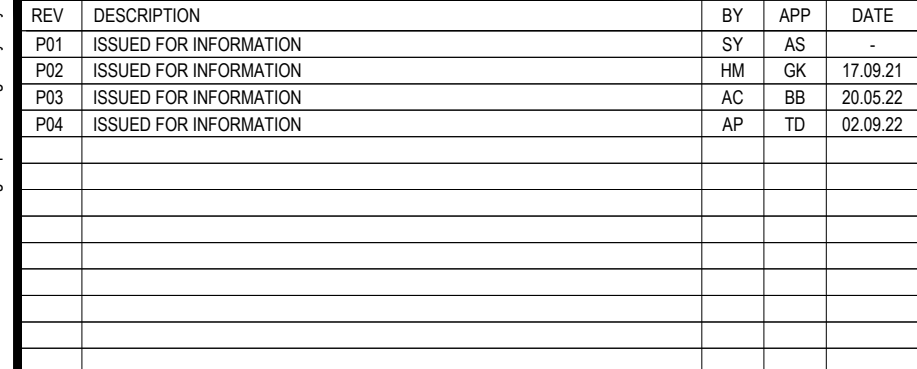


TITLE
GENERAL ARRANGEMENT PLAN
SHEET 2 OF 3

STATUS

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NOT FOR CONSTRUCTION

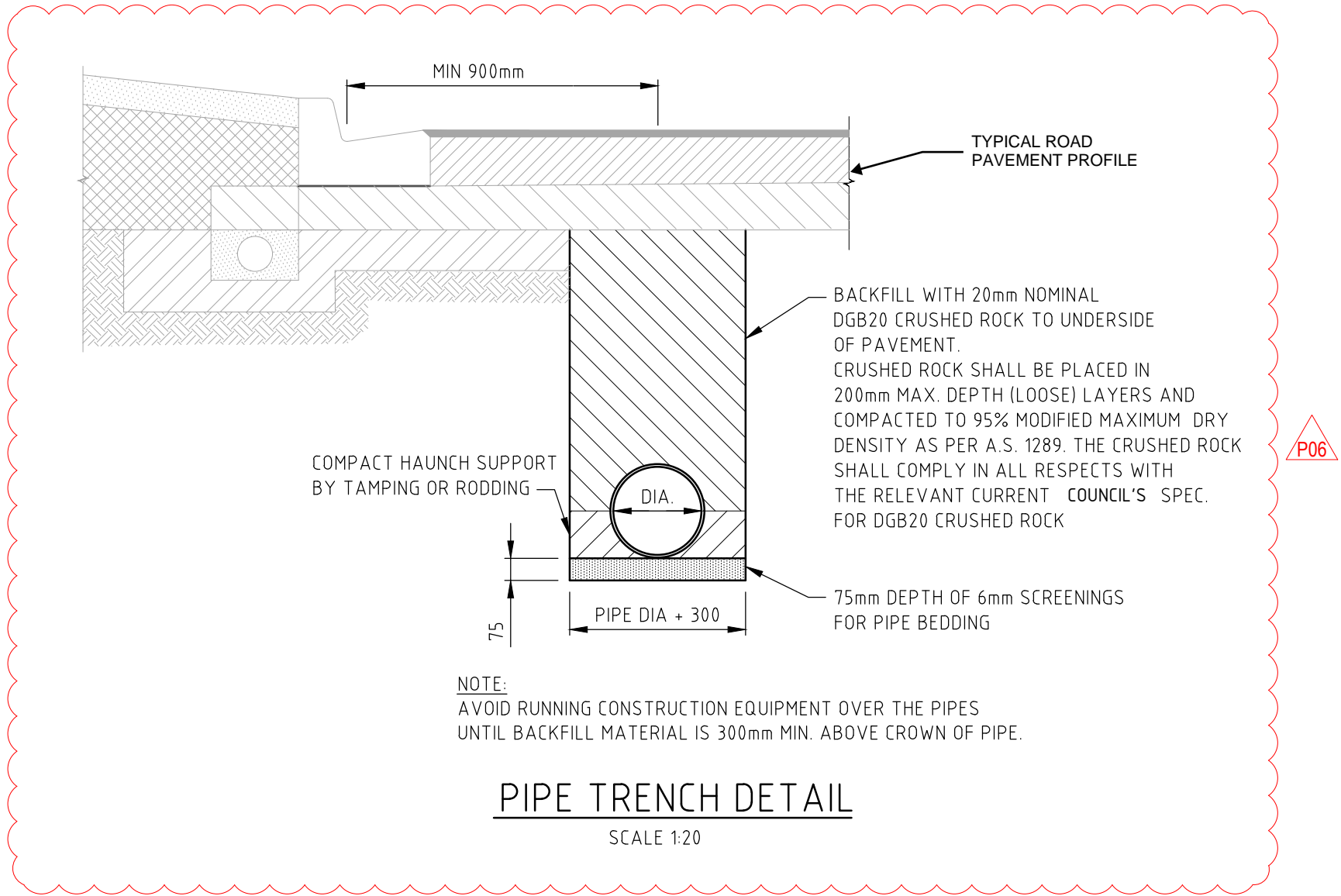
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PROJECT No		DRAWING No		REV	
121465		C101		P04	



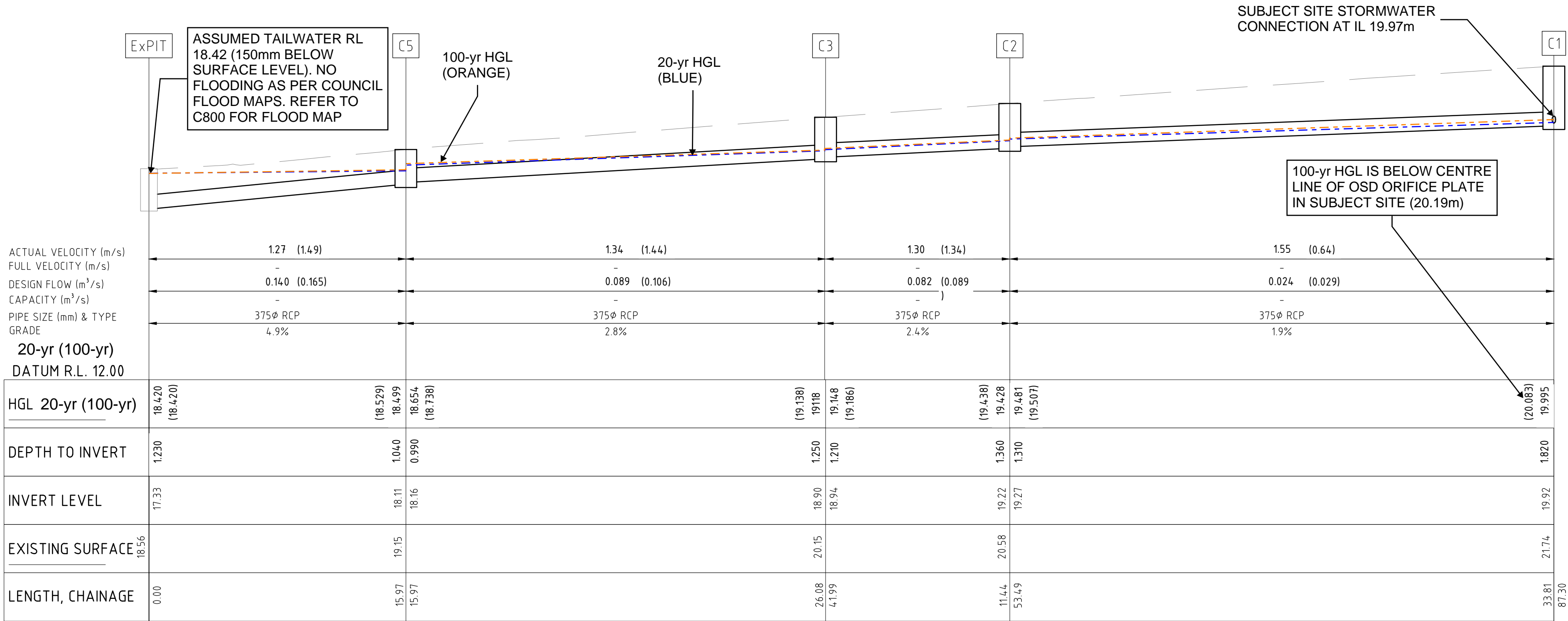
- ## NOTES:
1. DROP PIPE INTO TANK FLOOR LEVEL AND CONNECT THROUGH TO STORM FILTER (SF) CHAMBER.
 2. COMMS LINE PRESENT ALONG BRAEMAR AVE. ENSURE NO CLASHING BETWEEN SW OUTLET.
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DWG FILE: \\w.meinhardtgroup.com\img\AS\Drawings\Projects\Engin\12 465 - 204-210 Parramatta Rd Auburn NSW\11_BM6_C16_DWG1465-C2 10 Pit Schedule.dwg - I:\PLOT TIME: 07 Sep 2022 11:20m

PIT SCHEDULE						
PIT NUMBER	COVER LEVEL	PIT SIZE	PIT TYPE	INVERT LEVEL (IN)	INVERT LEVEL (OUT)	DEPTH
A1	24.80	900 x 900	SURFACE INLET PIT		23.40	1.40
A2	24.50	900 x 900	SURFACE INLET PIT	23.20	23.20	1.30
A3	24.00	600 x 900	SURFACE INLET PIT	22.96	22.96	1.04
A4	23.60	600 x 900	SURFACE INLET PIT	22.66	22.66	0.94
A5	23.30	600 x 600	SURFACE INLET PIT	22.45	22.45	0.85
B1	23.00	600 x 600	SURFACE INLET PIT		22.37	0.63
B2	22.95	600 x 600	SURFACE INLET PIT	22.24	22.24	0.71
B3	22.90	600 x 600	SURFACE INLET PIT	22.10	22.10	0.80
B4	22.90	600 x 900	SURFACE INLET PIT	21.87	21.87	1.03
C1	21.74	1200 x 1200	KERB INLET PIT	19.97	19.92	1.82
C2	20.58	1200 x 1200	KERB INLET PIT	19.27	19.22	1.36
C3	20.15	1200 x 1200	KERB INLET PIT	18.94	18.90	1.25
-C4			PIT DELETED			
C5	19.15	1200 x 1200	KERB INLET PIT	18.16	18.11	1.04
-C6			PIT DELETED			
EX. PIT	18.56		JUNCTION PIT	17.33	17.25	1.31



PIPE SCHEDULE				
PIPE FROM	PIPE TO	PIPE SIZE	TYPE	PIPE LENGTH (m)
PIT A1	PIT A2	100	uPVC	9.60
PIT A2	PIT A3	100	uPVC	12.00
PIT A3	PIT A4	100	uPVC	15.00
PIT A4	PIT A5	225	uPVC	10.60
PIT A5	OSD	225	uPVC	8.30
PIT B1	PIT B2	100	uPVC	12.80
PIT B2	PIT B3	100	uPVC	14.40
PIT B3	PIT B4	225	uPVC	11.60
PIT B4	OSD	225	uPVC	6.40
OSD	PIT C1	375	RCP CLASS 2	4.00
PIT C1	PIT C2	375	RCP CLASS 2	33.81
PIT C2	PIT C3	375	RCP CLASS 2	11.44
PIT C3	PIT C5	375	RCP CLASS 2	26.08
PIT C5	EXISTING PIT	375	RCP CLASS 2	15.97



DRAINAGE LONGITUDINAL SECTION DRAINAGE LONG SECTION PITS EX-C1
SCALES: HORIZONTAL 1:200 VERTICAL 1:100

REV	DESCRIPTION	BY	APP	DATE
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P02	ISSUED FOR INFORMATION	SY	GS	28.04.20
P03	ISSUED FOR INFORMATION	SY	GS	30.04.20
P04	ISSUED FOR INFORMATION	SY	AS	27.01.21
P05	ISSUED FOR INFORMATION	AC	BB	20.05.22
P06	ISSUED FOR INFORMATION	AP	TD	02.09.22

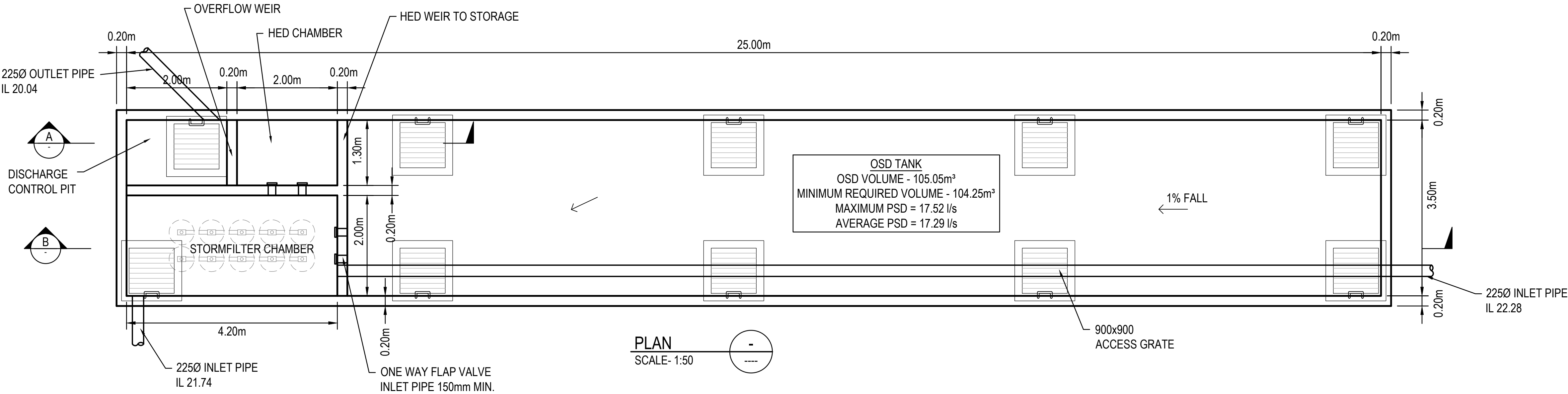
PROJECT NORTH	ARCHITECT
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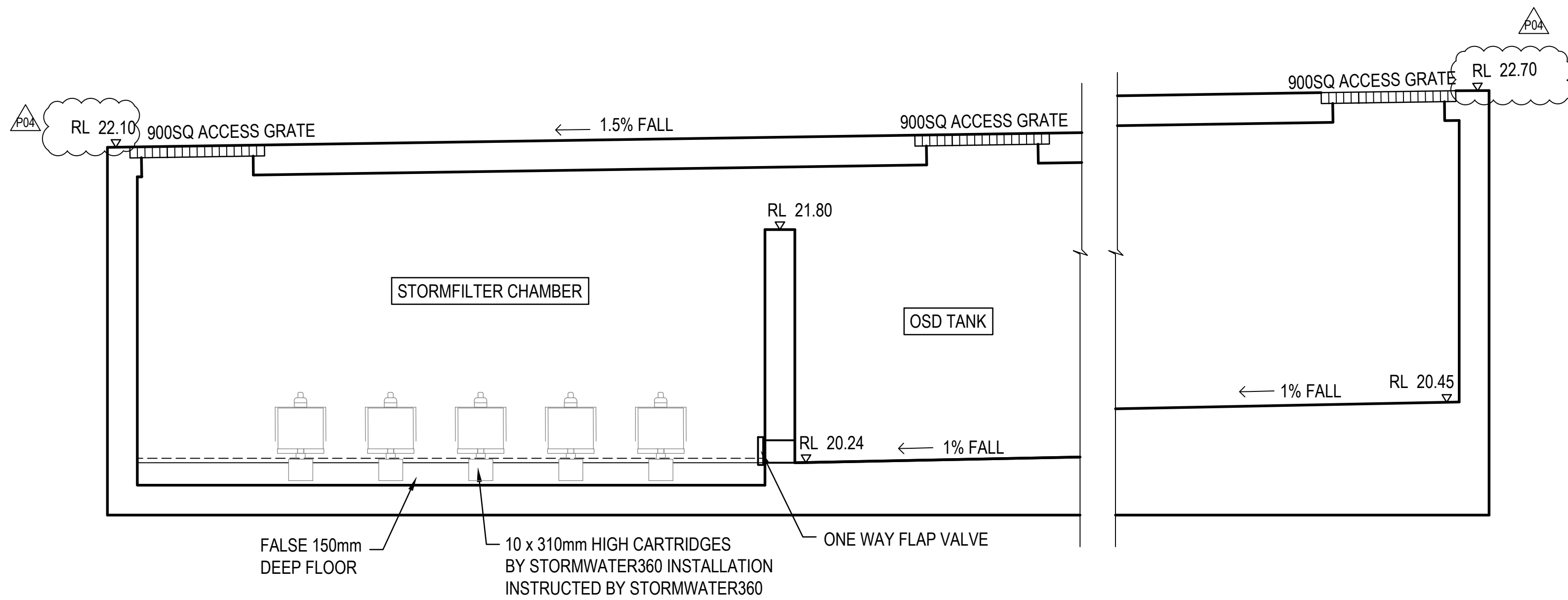
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PROJECT No 121465	DRAWING No C210	REV P06					

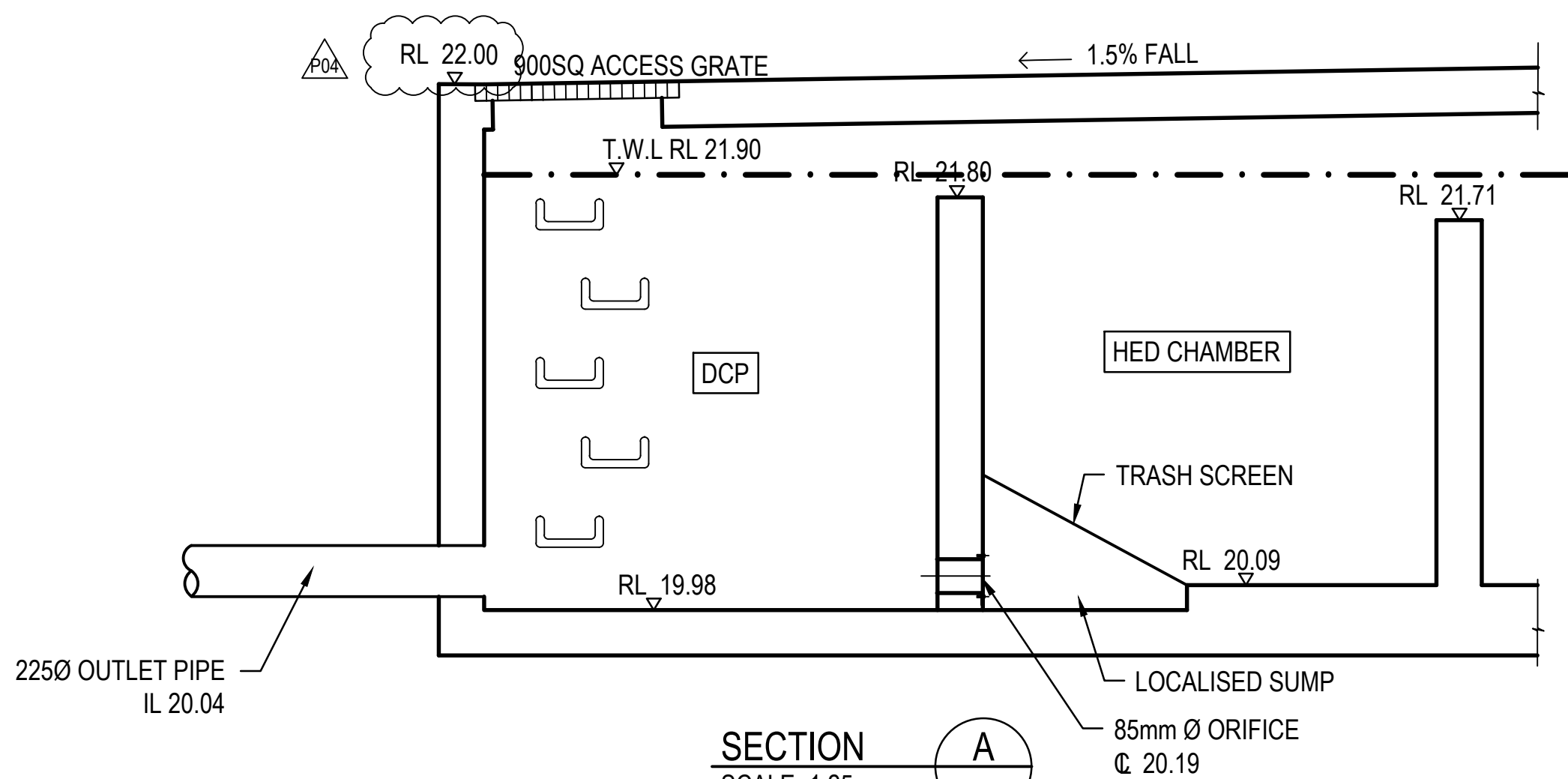
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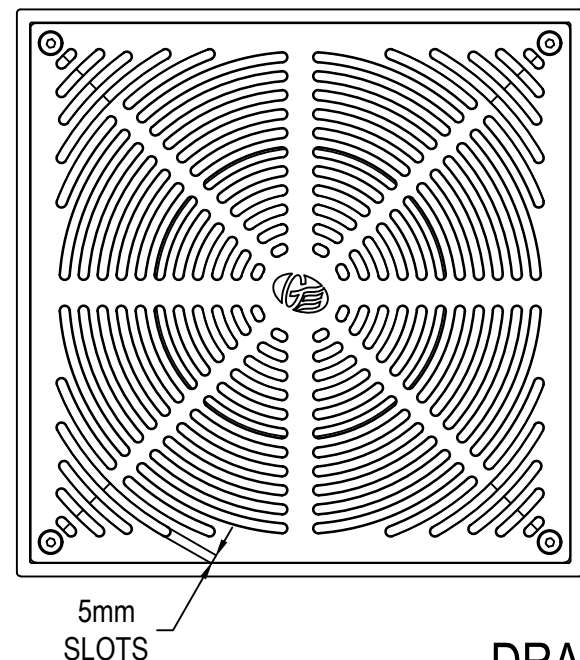
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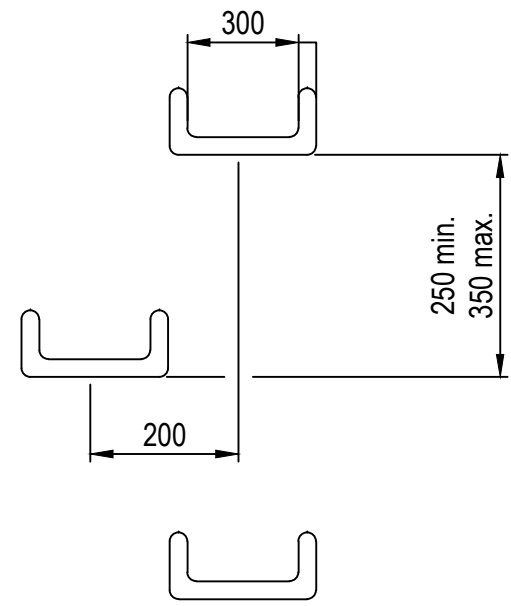
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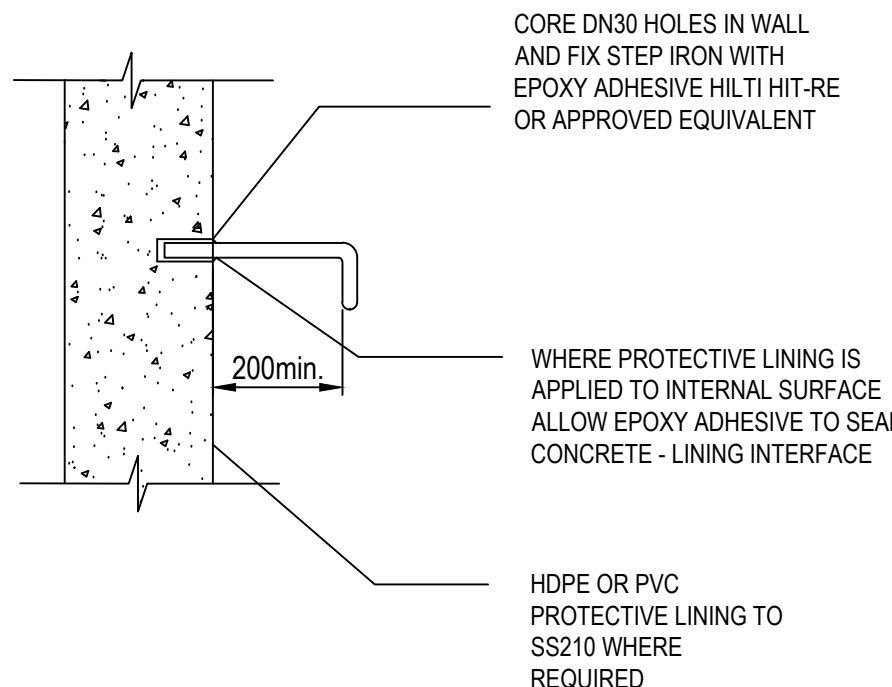
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DRAIN GRATE SUMP DETAIL
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STEP IRON SET OUT DETAIL
SCALE NTS



STEP IRON FIXING DETAIL
SCALE NTS

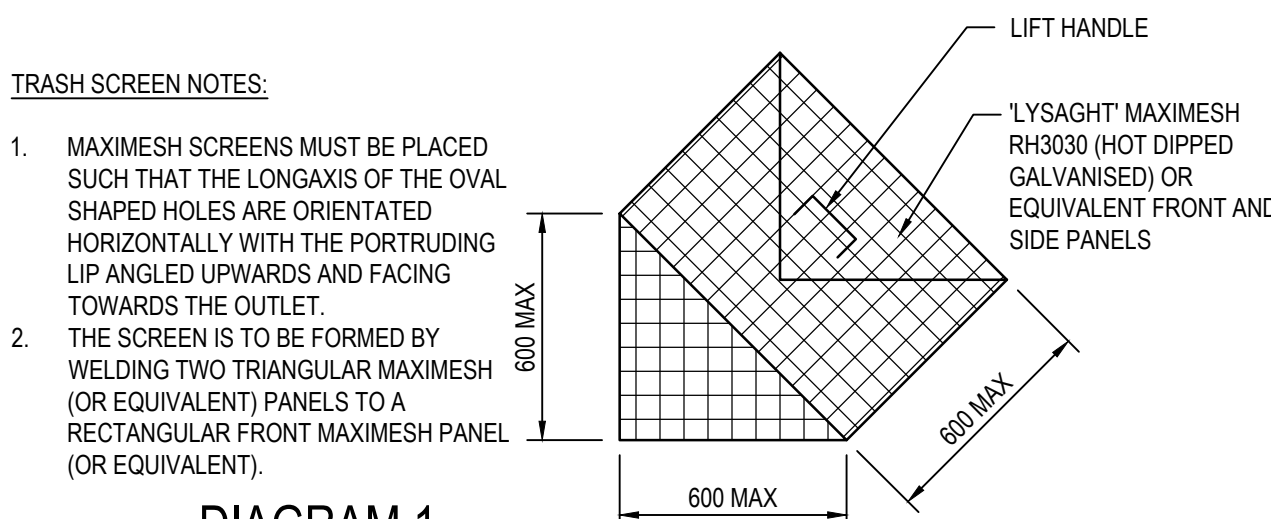
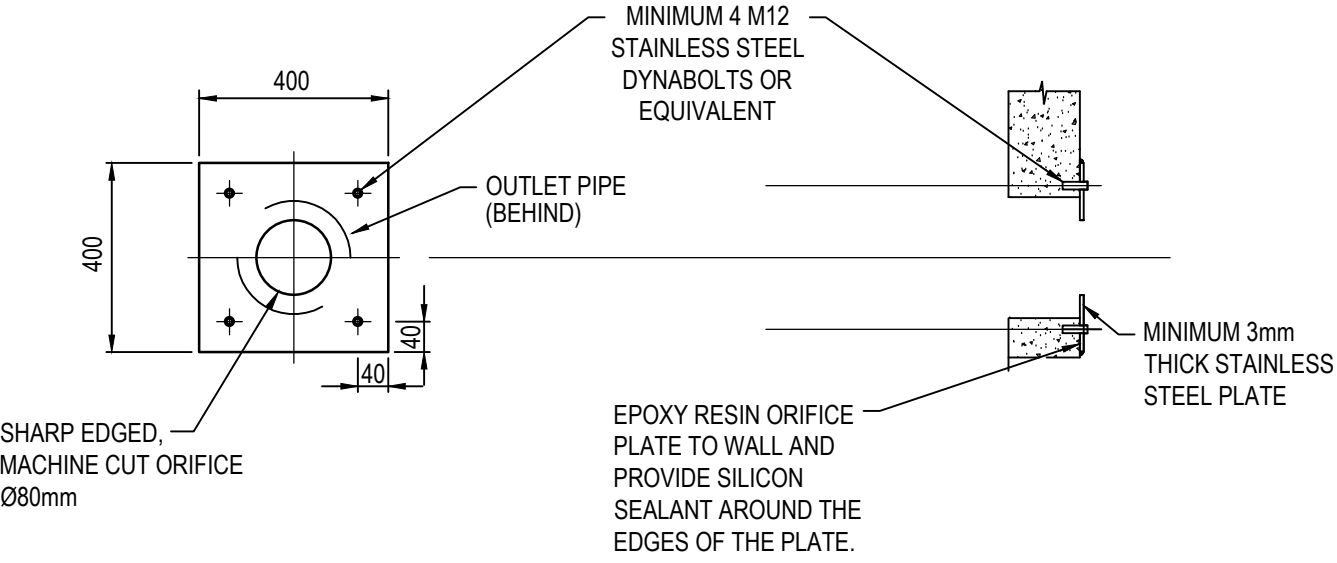


DIAGRAM 1
TRASH SCREEN DETAIL
NOT TO SCALE



ORIFICE PLATE DETAIL
NOT TO SCALE

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P03	ISSUED FOR INFORMATION	SY	GS	30.04.20
P04	ISSUED FOR INFORMATION	AC	BB	20.05.22
P05	ISSUED FOR INFORMATION	TD	BB	02.09.22

0 0.5 1.0 1.5 2.0 2.5m
SCALE 1:50 AT ORIGINAL SIZE (A1)

PROJECT NORTH

ARCHITECT

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CLIENT
PRINCE BUILDING PTY LTD
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TITLE
OSD PLAN & DETAILS

PROJECT
RESIDENTIAL, HOTEL, OFFICES & RETAIL DEVELOPMENT
204-210 PARRAMATTA ROAD, AUBURN NSW 2144

STATUS
FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

DESIGNED	DRAWN	APPROVED	DATE	SCALE @A1	SHEET
TD	TD	LM	22.01.20	AS SHOWN	OF
PROJECT No 121465		DRAWING No C740		REV P04	

