

STORMWATER MANAGEMENT PLAN

26 RALSTON ROAD, PALM BEACH NSW 2108

GENERAL NOTES:

ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH COUNCIL'S REQUIREMENTS, BUILDING CODE OF AUSTRALIA, NSW CODE OF PRACTICE AND THE TO THE RELEVANT SERVICE CODES.

THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ALL DISCREPANCIES SHALL BE REFERRED TO THE SUPERINTENDENT FOR DECISION BEFORE PROCEEDING WITH THE WORK.

ALL DIMENSIONS SHOWN ON THE DRAWINGS ARE IN MILLIMETERS (U.N.O.). DIMENSIONS SHALL NOT BE OBTAINED BY SCALING OF THESE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

BENCHMARKS HAVE BEEN ESTABLISHED WHERE INDICATED ON THE DRAWINGS. ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM (A.H.D.). THE CONTRACTOR SHALL UNDERTAKE ALL NECESSARY SURVEY WORK TO ENSURE THAT THE WORKS ARE CONSTRUCTED TO DESIGN LINE AND LEVEL.

SETTING OUT DIMENSIONS AND LEVELS SHOWN ON THE DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR.

ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE RELEVANT SAA CODES AND THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL SAFETY FENCES, WARNING SIGNS, TRAFFIC DIVERSIONS AND THE LIKE DURING CONSTRUCTION. ALL WORKS TO COMPLY WITH WORK HEALTH AND SAFETY REQUIREMENTS AND OTHER RELEVANT AUTHORITY SAFETY REQUIREMENTS.

NO TREES SHALL BE REMOVED, CUTBACK OR RELOCATED WITHOUT THE WRITTEN INSTRUCTION FROM THE SUPERINTENDENT.

WHERE NEW WORKS ABOUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED.

ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS AND THESE SPECIFICATIONS.

DESIGN LEVELS GIVEN ARE TO FINISHED SURFACE LEVEL AND INCLUSIVE OF TOPSOIL. (TOPSOIL DEPTH VARIES)

THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A N.A.T.A. REGISTERED SURVEYOR.

CARE IS TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATIONS ARE TO BE UNDERTAKEN OVER TELECOMMUNICATIONS OR ELECTRICAL SERVICES. HAND EXCAVATE IN THESE AREAS.

THE LOCATIONS OF UNDERGROUND SERVICES SHOWN ON THE DRAWING HAVE BEEN PLOTTED FROM DIAGRAMS PROVIDED BY SERVICE AUTHORITIES. THIS INFORMATION HAS BEEN PREPARED SOLELY FOR THE AUTHORITIES OWN USE AND MAY NOT NECESSARILY BE UPDATED OR ACCURATE.

THE POSITION OF SERVICES AS RECORDED BY THE AUTHORITY AT THE TIME OF INSTALLATION MAY NOT REFLECT CHANGES IN THE PHYSICAL ENVIRONMENT SUBSEQUENT TO INSTALLATION.

CAPITAL ENGINEERING CONSULTANTS DOES NOT GUARANTEE THAT THE SERVICES INFORMATION SHOWN ON THE DRAWING SHOWS MORE THAN THE PRESENCE OR ABSENCE OF SERVICES, AND WILL ACCEPT NO LIABILITY FOR INACCURACIES IN THE SERVICES INFORMATION SHOWN FROM ANY CAUSE WHATSOEVER.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN FROM THE UTILITY SERVICES AUTHORITIES A CURRENT COPY OF UNDERGROUND SERVICES SEARCH FOR THE LOCATION OF ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF ANY WORK AND NOTIFY ANY CONFLICT WITH THE DRAWINGS IMMEDIATELY. CLEARANCE SHALL BE OBTAINED FROM THE RELEVANT REGULATORY AUTHORITY. CONTRACTOR TO KEEP COPY OF UNDERGROUND SERVICES SEARCH ON SITE AT ALL TIMES. ANY DAMAGES TO SERVICES OR SERVICES ADJUSTMENTS SHALL BE CARRIED OUT BY THE CONTRACTOR OR RELEVANT AUTHORITY AT THE CONTRACTOR'S EXPENSE.

VISIT THE SITE BEFORE SUBMITTING THE FINAL TENDER PRICE TO ASSESS 'ON SITE' CONDITIONS. FAILURE TO DO SO WILL FORFEIT ANY CLAIM FOR NOT BEING AWARE OF CONDITIONS AFFECTING THE TENDER.

THE CONTRACTOR SHALL PREPARE ACCURATE WORK-AS-EXECUTED DRAWINGS FOLLOWING THE COMPLETION OF ALL WORKS.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE IN PLACE & MAINTAIN TRAFFIC FACILITIES AT ALL TIMES DURING CONSTRUCTION.

STORMWATER NOTES:

ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE AS3500.3-2018: 'STORMWATER DRAINAGE'.

FOR STORMWATER DRAINAGE PIPES THAT EXCEED 1:5 GRADE, REINFORCED CONCRETE ANCHOR BLOCKS SHALL BE INSTALLED. ANCHOR BLOCKS TO BE CONSTRUCTED TO SPECIFICATIONS SET OUT IN AS3500.3-2018.

COORDINATE THE INSTALLATION OF NEW SERVICES WITH ALL NEW & EXISTING SERVICES & STRUCTURAL PROVISIONS AS DETERMINED ON SITE.

ALL PIPEWORK TO BE SUPPORTED IN ACCORDANCE WITH AS3500.3-2018.

ALL PIPEWORK IS TO BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS AS SET DOWN IN AS3500.3-2018. ALL IN-GROUND PIPEWORK TO BE INSPECTED BY THE SUPERINTENDENT UNDER TEST CONDITIONS PRIOR TO BACKFILLING.

PIPES SHALL BE TRUE TO GRADES SHOWN AND ALIGNED SO THAT THE CENTRE OF THE INLET PIPE INTERSECTS WITH THE CENTRE OF THE OUTLET PIPE AT THE DOWNSTREAM FACE OF THE PIT.

BED ALL PIPES FIRMLY AND EVENLY WITH IMPORTED FILL ONLY. THICKNESS OF BEDDING LAYER SHALL BE 75mm IN SOIL AND 200mm IN ROCK.

LAY AND JOINT ALL PIPES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND AS3725-2007: 'DESIGN FOR INSTALLATION OF BURIED CONCRETE PIPES'.

ALLOW TO TEST ALL PIPES AND PITS TO LOCAL AUTHORITY'S REQUIREMENTS.

EXCAVATE TRENCHES AND STOCKPILE ALL MATERIAL FOR INSPECTION WITH REGARD TO REUSE FOR TRENCH BACKFILL. REMAINING MATERIAL TO BE REMOVED FROM SITE.

BACKFILL PIPES WITH IMPORTED FILL. PROVIDE 200mm SIDE SUPPORT AND 150mm OVERLAY ABOVE PIPE CROWN. TRENCH FILL ABOVE THE EMBEDMENT ZONE TO THE UNDERSIDE OF THE ROAD PAVEMENT OR THE FOOTWAY SHALL BE AS FOLLOW:-

UNDER ROADWAY
TRENCH FILL MATERIAL SHALL CONSIST OF IMPORTED FILL AS SPECIFIED HEREIN OF EITHER HIGH GRADE COMPACTION SAND OR APPROVED CRUSHED ROAD GRAVEL CONFORMING TO RMS QA SPECIFICATION 3051 OR SIMILAR.

OTHER THAN ROADWAY
TRENCH MATERIAL EXCAVATED SHALL CONSIST OF SELECT FILL AS SPECIFIED HEREIN AND SHALL NOT CONTAIN MORE THAN 20% OF STONES OF SIZE BETWEEN 25mm AND 75mm AND NONE LARGER THAN 75mm. PRIOR TO USE OF THE EXCAVATED MATERIAL IT SHALL BE INSPECTED AND APPROVED BY THE ENGINEER.

COMPACT BEDDING. EMBEDMENT AND TRENCH FILL MATERIALS AS FOLLOW:-

EMBEDMENT:-
FOR GRANULAR FILL MATERIAL (NON-COHESIVE SOIL) e.g. COARSE AGGREGATE FILL, THE DENSITY INDEX (ID) SHALL BE NOT LESS THAN 70%.

TRENCH FILL:-
FOR GRANULAR MATERIAL (NON COHESIVE SOILS). THE DENSITY INDEX (ID) SHALL BE NOT LESS THAN 70%. FOR NON-GRANULAR FILL MATERIAL (COHESIVE SOILS), THE DRY DENSITY RATIO (RD) SHALL BE NOT LESS THAN 95%.

UTILITY INFORMATION SHOWN ON THE PLANS IS NOT INTENDED TO DEPICT MORE THAN THE PRESENCE OF ANY SERVICES. ACTUAL LOCATIONS SHOULD BE VERIFIED BY HAND EXCAVATION PRIOR TO CONSTRUCTION.

THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION AND REMOVAL (IF REQUIRED) OF ALL EXISTING SERVICES IN AREAS AFFECTED BY THE WORKS.

GEOTEXTILE FABRIC MATERIAL TO BE BIDIM A24 OR APPROVED EQUIVALENT AND SHALL COMPLY WITH AS3705-2012: 'GEOTEXTILES - IDENTIFICATION, MARKING AND GENERAL DATA'

THE CONTRACTOR SHALL ENSURE THAT SERVICES TO ALL BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED AT ALL TIMES. THE CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN EXISTING SUPPLY TO BUILDINGS REMAINING WHERE REQUIRED. ONCE THE WORKS ARE COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD ALL DISTURBED AREAS.

STORMWATER NOTES (CONT):

EXISTING PIPES WHICH FORM NO PART OF THE DRAINAGE SYSTEM SHALL BE REMOVED OR SEALED AS INDICATED ON THE PLANS. PIPES UP TO 300mm DIAMETER SHALL BE SEWER GRADE uPVC WITH SOLVENT WELDED JOINTS (U.N.O.). ALL PIPE JUNCTIONS AND TAPERS SHALL BE VIA PURPOSE MADE FITTINGS.

WHERE DOWNPIPES PASS UNDER FLOOR SLABS, SEWER GRADE uPVC WITH RUBBER RING JOINTS ARE TO BE USED.

MINIMUM GRADE TO DRAINAGE PIPES TO BE 1% (U.N.O.), MIN. SIZE 100mm DIAMETER (U.N.O.).

PIPES LARGER THAN OR EQUAL TO 300mm DIAMETER TO BE REINFORCED CONCRETE RUBBER RING JOINTED TYPE (CLASS 2) MANUFACTURED TO AS4058 (U.N.O.).

PIPE INSTALLATION UNDER TRAFFICABLE AREAS SHALL BE IN ACCORDANCE WITH CONCRETE PIPE ASSOCIATION OF AUSTRALIA PUBLICATION "CONCRETE PIPE SELECTION & INSTALLATION" TYPE H53 SUPPORT.

EQUIVALENT STRENGTH FRC PIPES MAY BE USED SUBJECT TO AUTHORITY APPROVAL.

MINIMUM PIPE COVER TO BE 600mm UNDER TRAFFICABLE AREAS AND 300mm ELSEWHERE (U.N.O.).

CONTRACTOR TO SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTORS TO ENSURE PROPER CONNECTION BETWEEN DISSIMILAR PIPEWORK.

PROVIDE CLEANING EYES TO ALL DOWNPIPES NOT DIRECTLY CONNECTED TO PITS.

STORMWATER DRAINAGE CONNECTIONS TO COUNCIL'S SYSTEM SHALL BE TO THE REQUIREMENTS AND THE SATISFACTION OF LOCAL COUNCIL.

PITS DEEPER THAN 1200mm TO BE FITTED WITH STEP IRONS AT 300 CENTRES TO AS1657-2013: FIXED PLATFORMS, WALKWAYS, STAIRWAYS AND LADDERS - DESIGN, CONSTRUCTION AND INSTALLATION'.

ALL EXPOSED EDGES TO BE ROUNDED WITH 20mm RADIUS, OR CHAMFERED 20mm x 20mm.

PIT REINFORCEMENT - MESH SL82 LAP TO BE 400mm MIN. CLEAR COVER 40 MIN. CAST AGAINST BLINDING OR FORMWORK. CORNER RETURNS MAY BE FABRIC OR EQUIVALENT BARS.

BENCHING TO BE HALF OUTGOING PIPE DEPTH. CONCRETE FOR BENCHING TO BE 20Mp_a MASS CONCRETE.

BRICKWORK, BLOCKWORK, CONCRETE OR APPROVED PRECAST PITS ARE TO BE USED IN TRAFFICABLE AREAS SUBJECT TO APPROVAL.

FIBREGLASS, HARD-PLASTIC OR APPROVED PRECAST PITS ARE TO BE USED IN NON-TRAFFICABLE AREAS SUBJECT TO APPROVAL.

100mm DIAMETER HOLE FOR SUBSOIL DRAINAGE OUTLET TO BE LOCATED 100mm ABOVE INVERT OF ALL INLET PIPES. SUBSOIL DRAINAGE TO EXTEND FOR A DISTANCE OF 3m UPSTREAM OF PIT (AT EACH INLET TRENCH) WITH THE UPSTREAM END SEALED.

ALL CONNECTIONS TO EXISTING DRAINAGE PITS SHALL BE MADE IN TRADESMAN-LIKE MANNER AND THE INTERNAL WALL OF THE PIT AT THE POINT OF ENTRY SHALL BE CEMENT RENDERED TO ENSURE A SMOOTH FINISH.

PIT GRATE, FRAMES AND SOLID COVERS SHALL BE CLASS B IN NON TRAFFIC AREAS AND CLASS C IN TRAFFICABLE AREAS IN ACCORDANCE WITH AS3996 U.N.O.

ALL GRATES SHALL BE PROVIDED WITH A 'J-LOCK' TYPE LOCKING CLIPS.

GRATES TO PITS IN FOOTPATH AREAS SHALL BE HEEL SAFE COMPLYING WITH THE DISABLED ACCESS CODE

PIT GRATING TO BE GALVANISED STEEL TYPE 'WELDLOK' OR APPROVED EQUIVALENT.

SUBSOIL PIPES SHALL BE LAID AT A MIN GRADE OF 1% (U.N.O.).

ADDITIONAL SUBSOIL DRAINAGE SHALL BE LAID TO SUIT SITE CONDITIONS AND GROUNDWATER PRESENCE AS DIRECTED. SUBSOIL PIPES SHALL BE LAID BEHIND KERBS IN CUT AREAS OF THE SITE.

PROVIDE A MINIMUM OF 150mm GRAVEL AROUND SUBSOIL PIPE. TRENCH TO BE LINED WITH GEOTEXTILE FABRIC TYPE BIDIM A24

SURVEY

THE EXISTING SITE CONDITIONS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN INVESTIGATED BY REGISTERED SURVEYORS. THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN.



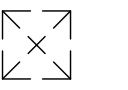



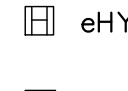


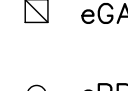
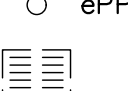
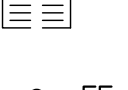
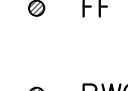
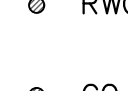
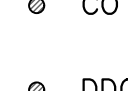
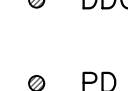

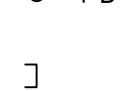












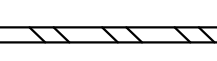
CAPITAL ENGINEERING CONSULTANTS DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE OR ITS SUITABILITY AS A BASIS FOR CONSTRUCTION OR DESIGN.

SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT CAPITAL ENGINEERING CONSULTANTS.

ABBREVIATIONS:

ø or DIA DIAMETER
CBR CALIFORNIA BEARING RATIO
CH CHAINAGE
CL CENTER LINE
CO CLEAR OUT
DD DISH DRAIN
DDO DISH DRAIN OUTLET
DEJ DOWELLED EXPANSION JOINT
DGB DENSE GRADED BASECOURSE
DGS DENSE GRADED SUB-BASE
DP DOWNPIPE
e EXISTING
FFL FINISHED FLOOR LEVEL
GTD GRATED TRENCH DRAIN
GSP GRATED SURFACE INLET PIT
HYD HYDRANT
IJ ISOLATING JOINT
IK INTEGRAL KERB
IL INVERT LEVEL
IP INTERSECTION POINT
KIP KERB INLET PIT
KO KERB ONLY
K&G KERB & GUTTER
KR KERB RETURN
NGL NATURAL GROUND LEVEL
OFP OVERLAND FLOW PATH
OSD ON-SITE DETENTION RADIUS
R REINFORCED CONCRETE PIPE
RCP ROLL KERB & GUTTER
RL REDUCED LEVEL
RW RETAINING WALL
RWT RAINWATER TANK
SJ SAWN CONTROL JOINT
SMH SEWER MAN HOLE
SW STORMWATER
SWP STORMWATER PIT
SWRM STORMWATER RISING MAIN
SWS STORMWATER SUMP
SV STOP VALVE
TK TOP OF KERB
TOW TOP OF WALL
TWL TOP WATER LEVEL
TP TANGENT POINT
UPVC UNPLASTICISED POLYVINYL CHLORIDE
UNO UNLESS NOTED OTHERWISE
WPJ WEAKENED PLANE JOINT
FF FIRST FLUSH DEVICE
TYP TYPICAL
BM BENCH MARK

LEGEND:

● DP	DOWNPIPE		eSMH	EXISTING SEWER MANHOLE
	STORMWATER LINE			EXISTING JUNCTION PIT
	STORMWATER LINE DRAINING TO RWT			EXISTING KERB INLET PIT
— OF —	OVER FLOW PIPE		eTEL	EXISTING TELSTRA PIT
— — — SSD —	SUBSOIL LINE		eHYD	EXISTING HYDRANT
	STORMWATER RISING MAIN		eSV	EXISTING STOP VALVE
— — — e —	EXISTING STORMWATER LINE		eGAS	EXISTING GAS VALVE
— — — S —	AUTHORITY SEWER LINE		ePP	EXISTING POWER POLE
— W —	AUTHORITY WATER LINE			EXISTING GRATED SURFACE INLET PIT
— G — G —	AUTHORITY GAS LINE		FF	FIRST FLUSH
— — — — E —	AUTHORITY ELECTRICITY LINE		RWO	RAINWATER OUTLET
— FO — FO — FO —	AUTHORITY FIBRE OPTIC LINE		CO	CLEAR OUT POINT
— TEL —	AUTHORITY COMMS LINE		DDO	DISH DRAIN OUTLET
	SEDIMENT FENCE		PD	PLANTER DRAIN
	GRATED SURFACE INLET PIT			CAPPING
	GRATED SURFACE INLET PIT WITH OCEANGUARD INSERT		RH	RAINHEAD
	SEALED JUNCTION PIT		SP	DOWNPIPE SPREADER
	PROPOSED KERB INLET PIT			WARNING LIGHT
	GRATED TRENCH DRAIN		144.37	SPOT LEVELS
	RAINWATER RE-USE TANK		Δ	BENCHMARK
	PROPOSED RETAINING WALL	OFF →		OVERLAND FLOW PATH

DIAL BEFORE YOU DIG SHOULD BE CONTACTED PRIOR TO ANY EXCAVATION ON SITE

TM: TRADE MARK OF THE ASSOCIATION OF DIAL BEFORE YOU DIG SERVICES LTD. USED UNDER LICENSE.

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ISSUE FOR SECTION 4.55 APPROVAL

FOR APPROVAL

Rev.	Description	By.	Chk.	App.	Date
05	FOR SECTION 4.55 APPROVAL	J.M.	M.W.	P.E.	26/07/2024
04	FOR SECTION 4.55 APPROVAL	J.M.	M.W.	P.E.	29/04/2024
03	FOR SECTION 4.55 APPROVAL	T.P.	M.W.	P.E.	20/08/2021
02	FOR SECTION 4.55 APPROVAL	T.P.	M.W.	P.E.	12/08/2021
01	FOR SECTION 4.55 APPROVAL	T.P.	M.W.	P.E.	05/06/2021
A	FOR APPROVAL	J.M.	J.D.	P.E.	03/02/2020

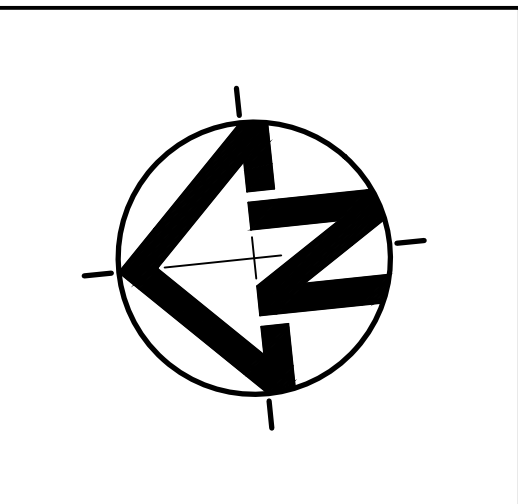


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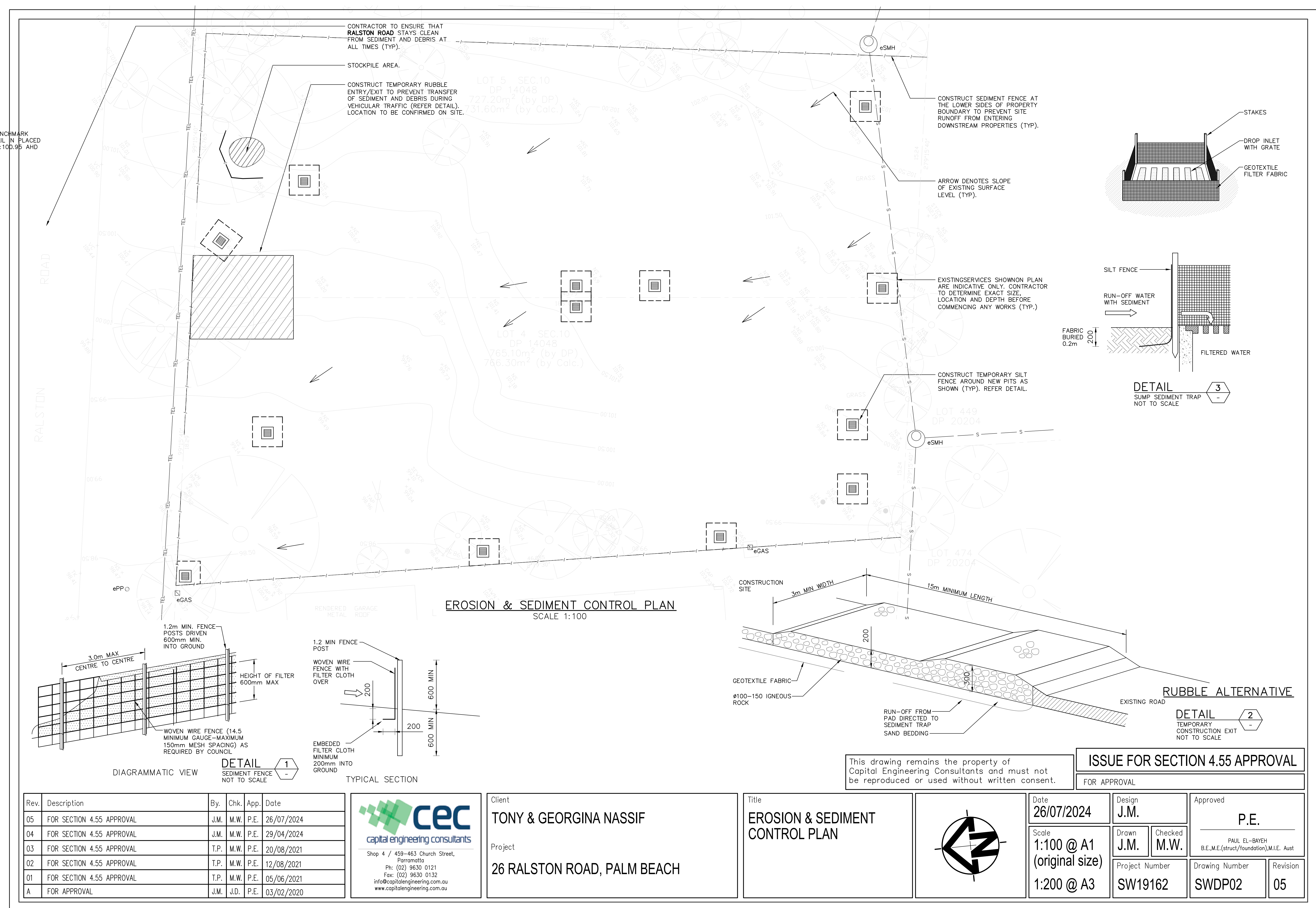
Client	TONY & GEORGINA NASSIF
Project	26 RALSTON ROAD, PALM BEACH

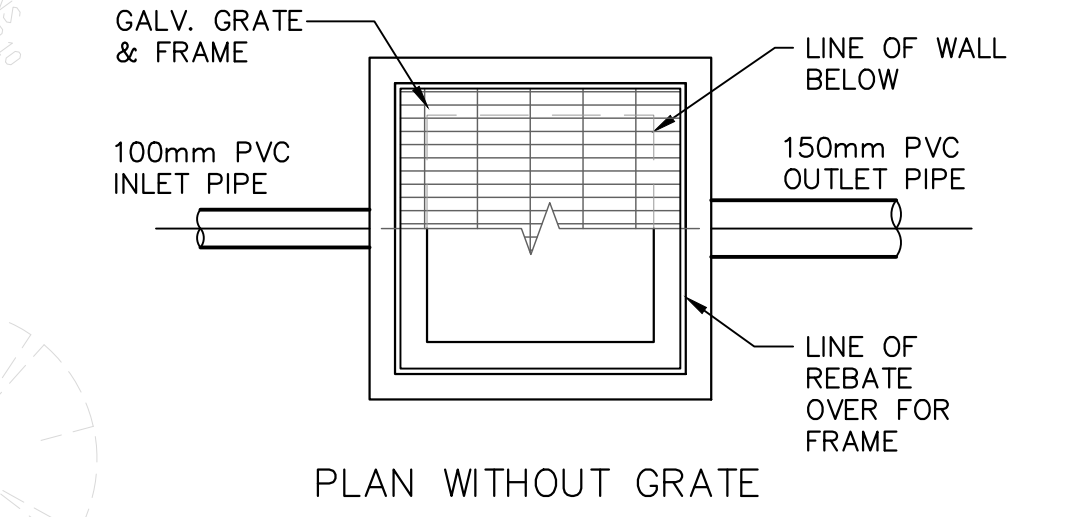
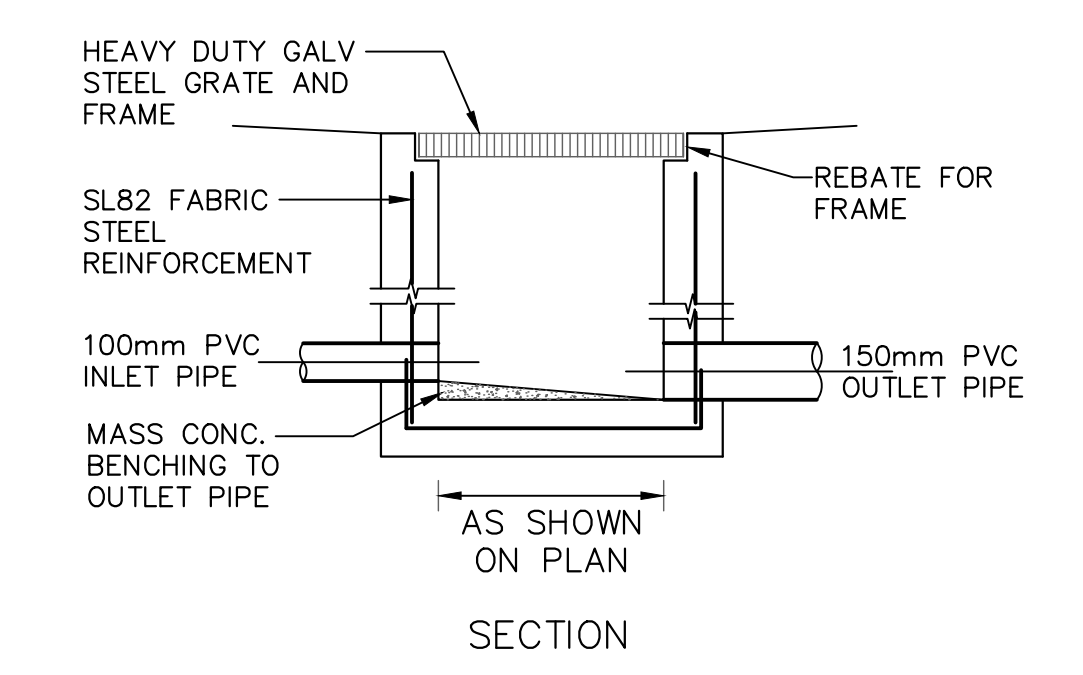
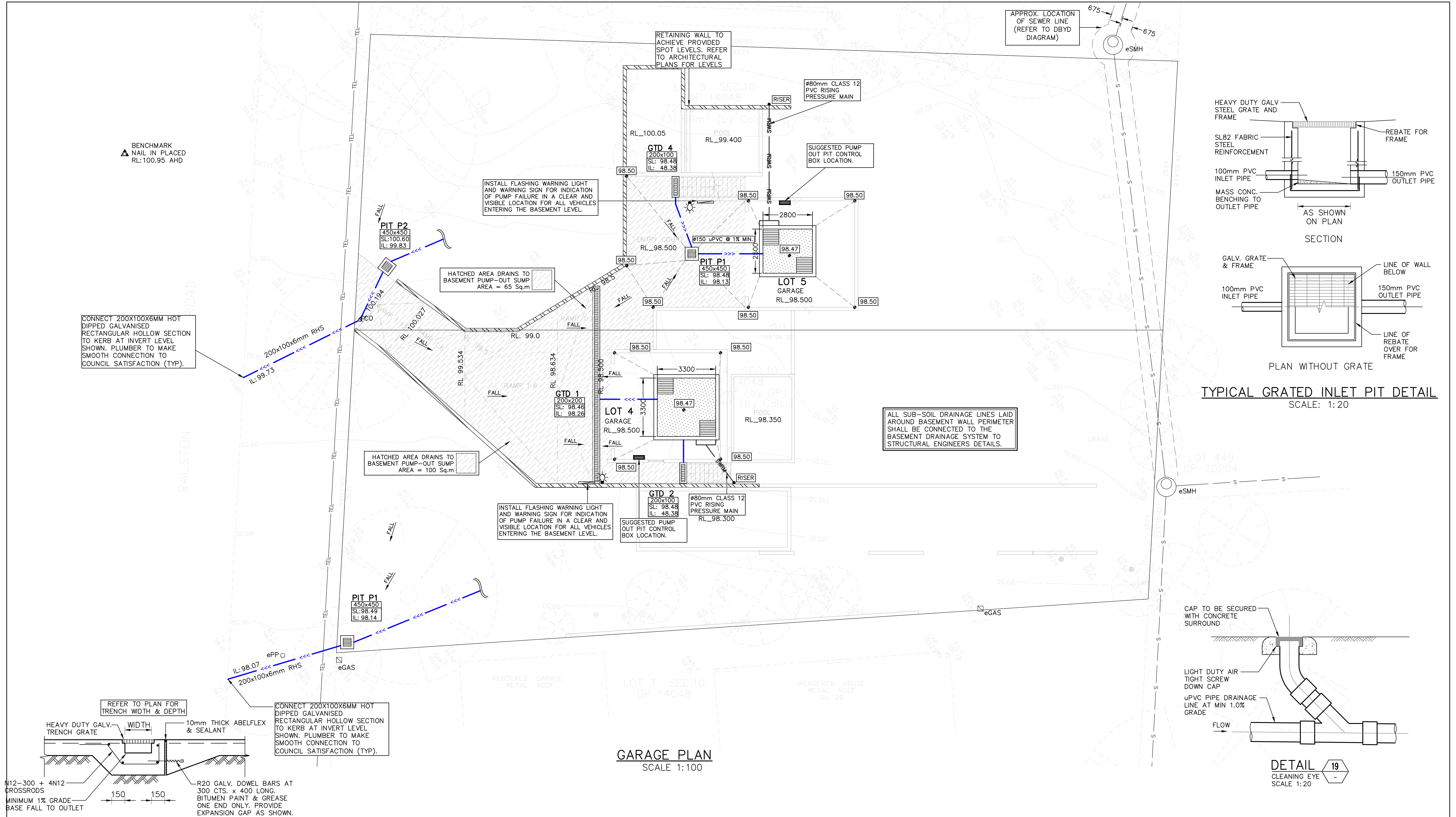
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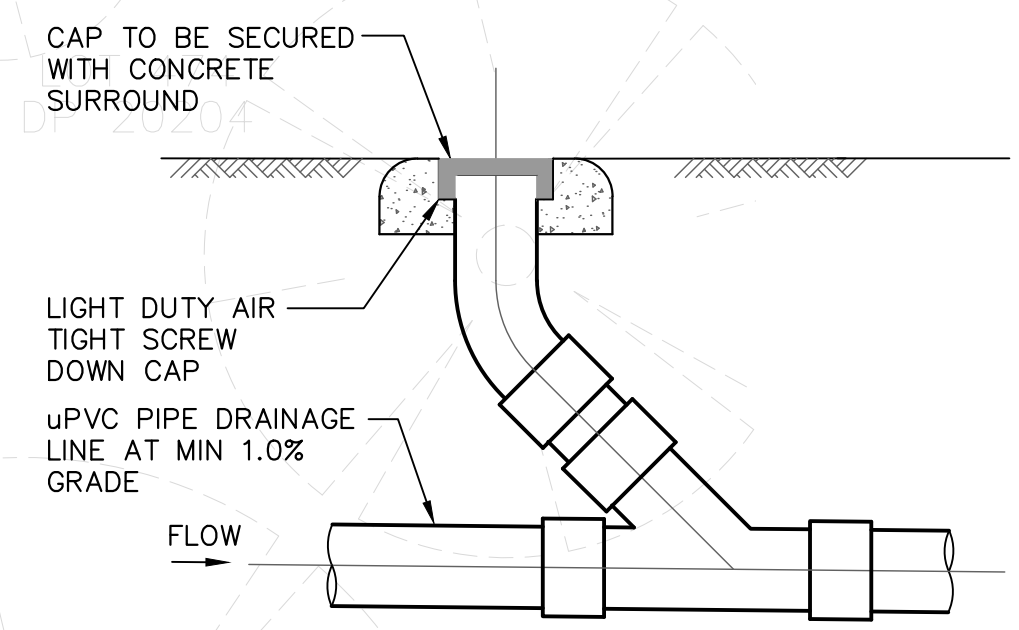
Date	26/07/2024	Design	J.M.	Approved	P.E.
Scale	1:100 @ A1 (original size)	Drawn	J.M.	Checked	M.W.
	1:200 @ A3	Project Number	SW19162	Drawing Number	SWDP01
				Revision	05

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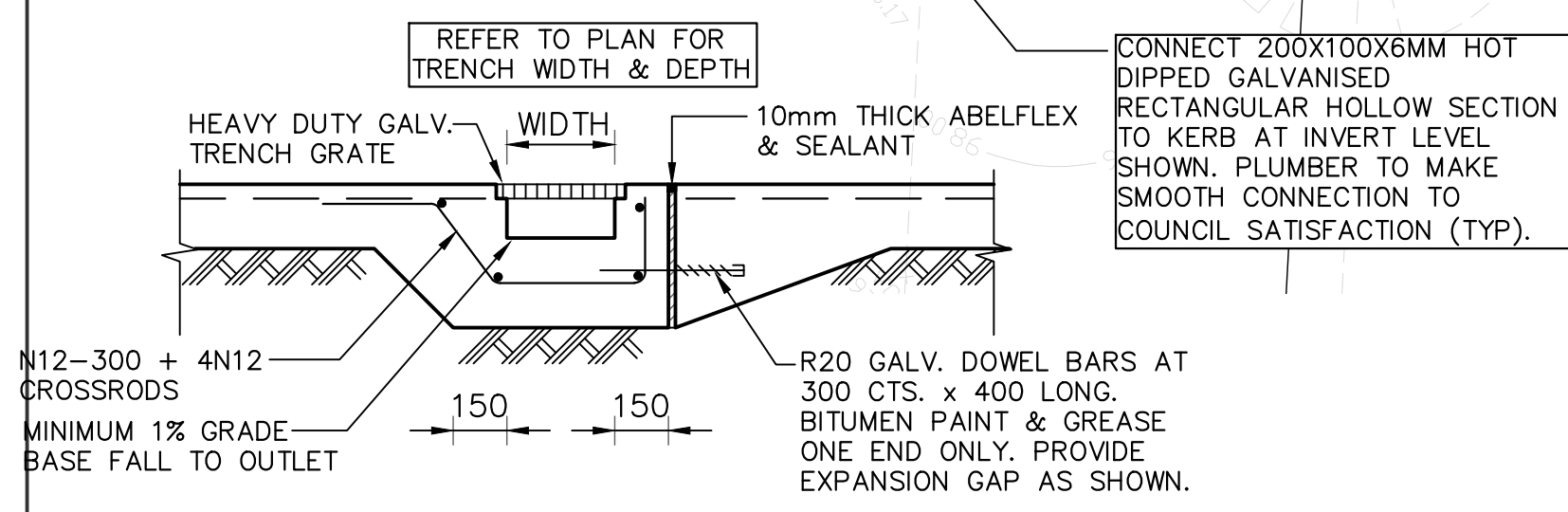




TYPICAL GRATED INLET PIT DETAIL
SCALE: 1:20



DETAIL 19
CLEANING EYE
SCALE 1:20



GRATED DRAIN DETAIL
SCALE: 1:20

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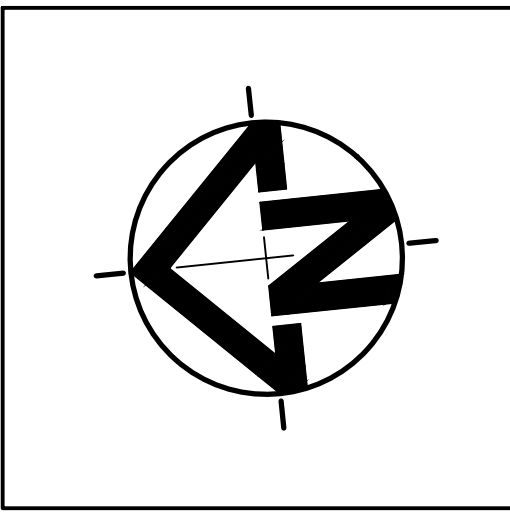
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Client
TONY & GEORGINA NASSIF

Project
26 RALSTON ROAD, PALM BEACH

Title
GARAGE, PLAN & DETAILS



Date
26/07/2024

Scale
1:100 @ A1 (original size)
1:200 @ A3

Design
J.M.

Drawn
J.M.

Checked
M.W.

Project Number
SW19162

Approved
P.E.

PAUL EL-BAYEH
B.E., M.E. (struct/foundation), M.I.E. Aust

Drawing Number
SWDP03

Revision
05

KEY NOTES:

INSTALL STEP IRONS FOR EASE OF ACCESS DURING MAINTENANCE OF PUMP OUT CONTROL PIT TO COUNCIL SATISFACTION.

INSTALL CONFINED SPACE SIGN ABOVE PUMP OUT PIT FOR PUBLIC AWARENESS AND WARNING.

ALL STORMWATER PIPES ARE Ø100mm uPVC AND SLOPING @ 1.0% U.N.O (TYP).

ALL BUILDING AND HYDRAULIC SERVICES TO BE PROPERLY CO-ORDINATED WITH STORMWATER PIPES AND ENSURE NO CLASHES ARE PRESENT DURING CONSTRUCTION (TYP).

STORMWATER PIPE ARRANGEMENT TO BE CO-ORDINTED WITH STRUCTURAL SLAB AND BEAMS WHERE REQUIRED (TYP).

STANDARD PUMP OUT DESIGN NOTES:

THE PUMP OUT SYSTEM SHALL BE DESIGNED TO BE OPERATED IN THE FOLLOWING MANNER: –

I). THE PUMPS SHALL BE PROGRAMMED TO WORK ALTERNATELY TO ALLOW BOTH PUMPS TO HAVE AN EQUAL OPERATION LOAD AND PUMP LIFE.

II). A FLOAT SHALL BE PROVIDED TO ENSURE THAT THE MINIMUM REQUIRED WATER LEVEL IS MAINTAINED WITHIN THE SUMP AREA OF THE BELOW GROUND TANK. IN THIS REGARD THIS FLOAT WILL FUNCTION AS AN OFF SWITCH FOR THE PUMPS AT THE MINIMUM WATER LEVEL. THE SAME FLOAT SHALL BE SET TO TURN ONE OF THE PUMPS ON UPON THE WATER LEVEL IN THE TANK RISING TO APPROXIMATELY 300MM ABOVE THE MINIMUM WATER LEVEL. THE PUMP SHALL OPERATE UNTIL THE TANK IS DRAINED TO THE MINIMUM WATER LEVEL.

III). A SECOND FLOAT SHALL BE PROVIDED AT A HIGH LEVEL, WHICH IS APPROXIMATELY THE ROOF LEVEL OF THE BELOW GROUND TANK. THIS FLOAT SHALL START THE OTHER PUMP THAT IS NOT OPERATING AND ACTIVATE THE ALARM.

IV). AN ALARM SYSTEM SHALL BE PROVIDED WITH A FLASHING STROBELIGHT AND A PUMP FAILURE WARNING SIGN WHICH ARE TO BE LOCATED AT THE DRIVEWAY ENTRANCE TO THE BASEMENT LEVEL. THE ALARM SYSTEM SHALL BE PROVIDED WITH A BATTERY BACK-UP IN CASE OF POWER FAILURE.

V). A CONFINED SPACE DANGER SIGN SHALL BE PROVIDED AT ALL ACCESS POINTS TO THE PUMP OUT STORAGE TANK IN ACCORDANCE WITH THE UPPER PARRAMATTA RIVER CATCHMENT TRUST OSD HANDBOOK.

LOT 5–PUMP STORAGE CALCS:

BELOW GROUND STORAGE:

100yr 120 MIN ARI STORM= 106mm
CATCHMENT AREA= 65.00m²

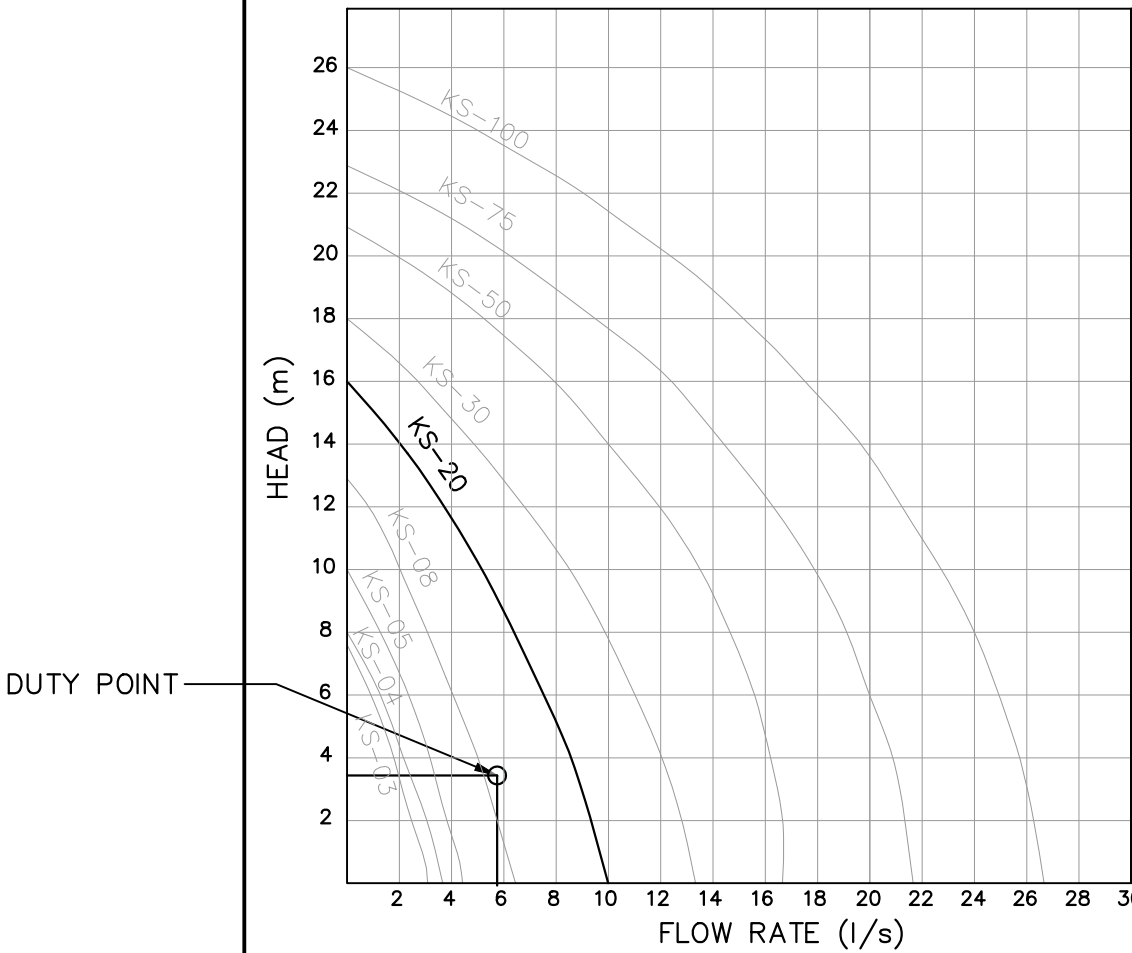
V=Axd
=65.00x(106/1000)
=6.89m³ REQUIRED
=7.00m³ PROVIDED

PUMP DISCHARGE RATE WAS DESIGNED FOR THE 100yr 5 MIN STORM:

Q=CIA/3600
=1.0x288x70.0/3600
=5.6 L/s REQUIRED @ 3.80 m OF HEAD

RECOMMENDED PUMP: DUAL **SABRE MODEL NO. KS–20** PUMPS WITH **80mm PVC CLASS 12** OUTLETS.

PUMP PERFORMANCE CURVES:



PUMP MAKE & MODEL DETAILS
SCALE N.T.S.

Rev.	Description	By.	Chk.	App.	Date
05	FOR SECTION 4.55 APPROVAL	J.M.	M.W.	P.E.	26/07/2024
04	FOR SECTION 4.55 APPROVAL	J.M.	M.W.	P.E.	29/04/2024
03	FOR SECTION 4.55 APPROVAL	T.P.	M.W.	P.E.	20/08/2021
02	FOR SECTION 4.55 APPROVAL	T.P.	M.W.	P.E.	12/08/2021
01	FOR SECTION 4.55 APPROVAL	T.P.	M.W.	P.E.	05/06/2021
A	FOR APPROVAL	J.M.	J.D.	P.E.	03/02/2020



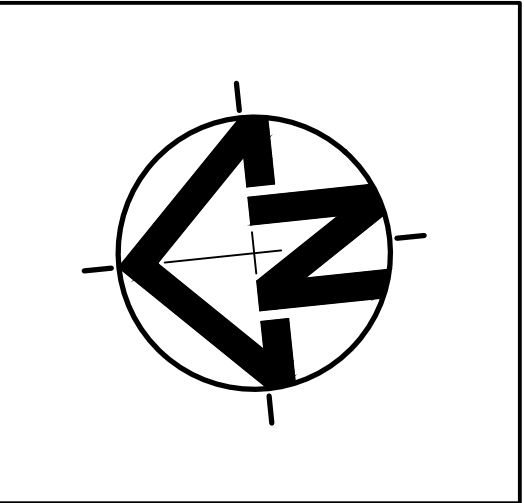
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Client
TONY & GEORGINA NASSIF

Project
26 RALSTON ROAD, PALM BEACH

Title
**GARAGE, NOTES&DETAIL
PUMP-OUT - LOT 5**



Date
26/07/2024

Scale
**1:100 @ A1
(original size)**
1:200 @ A3

Design
J.M.

Drawn
J.M.

Checked
M.W.

Project Number
SW19162

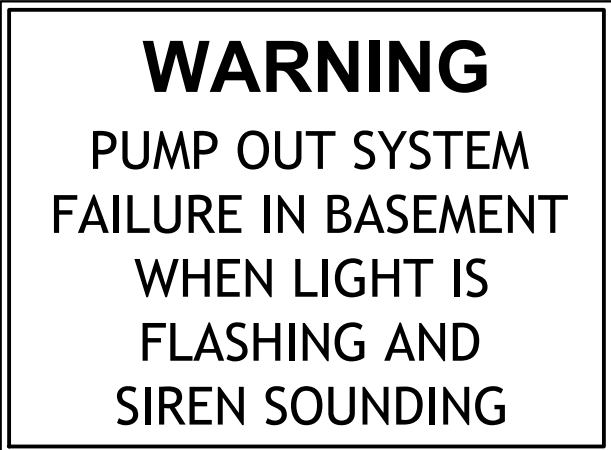
Approved
P.E.
PAUL EL–BAYEH
B.E.,M.E.(struct/foundation),M.I.E. Aust

Drawing Number
SWDP04

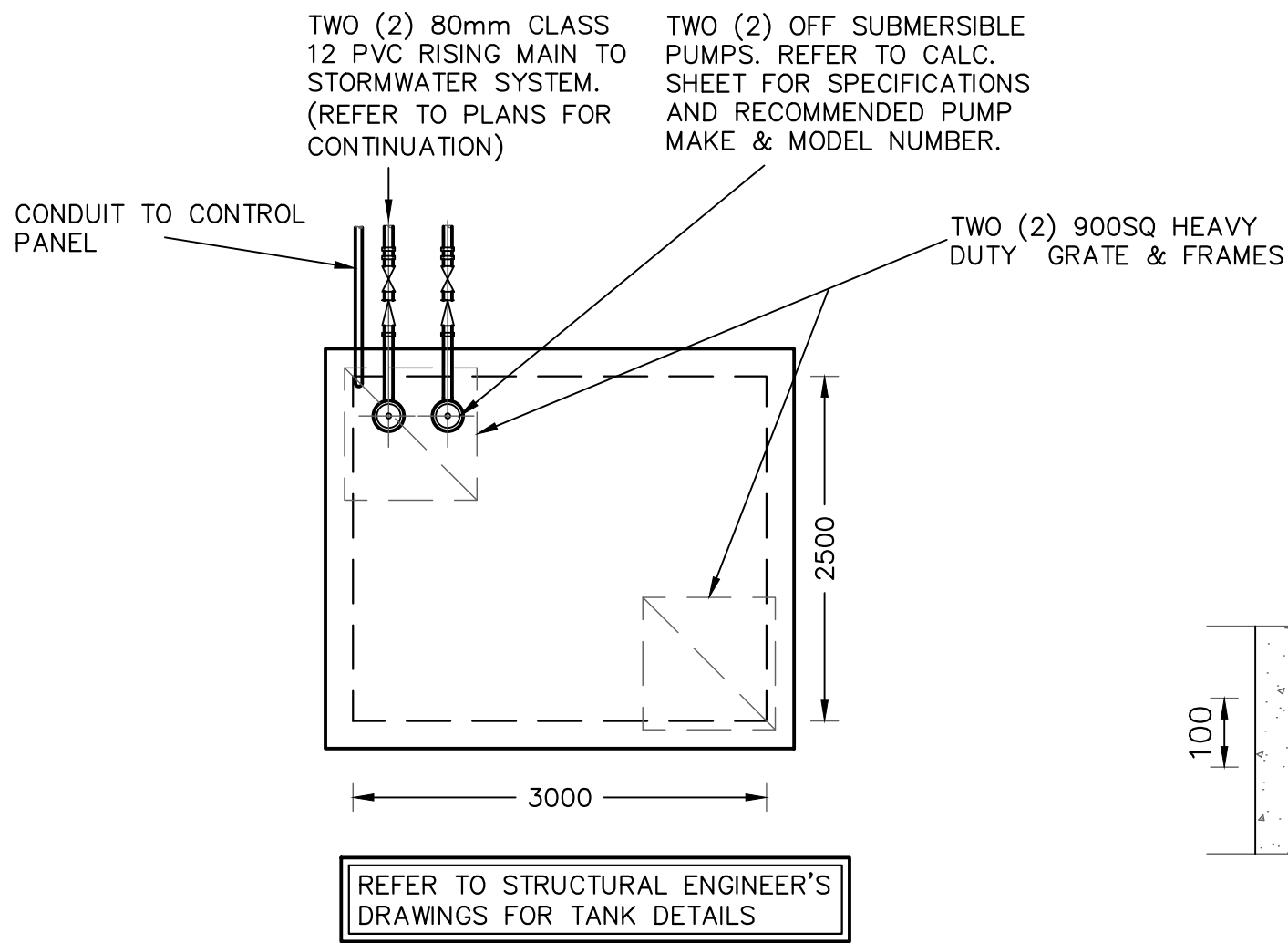
Revision
05



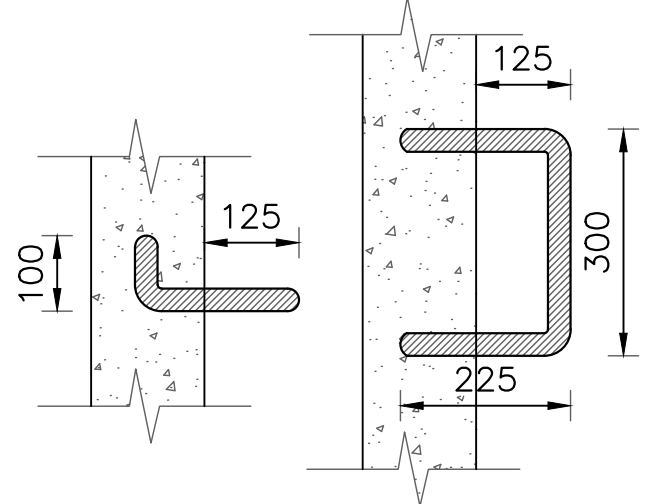
CONFINED SPACE SIGN
NOT TO SCALE



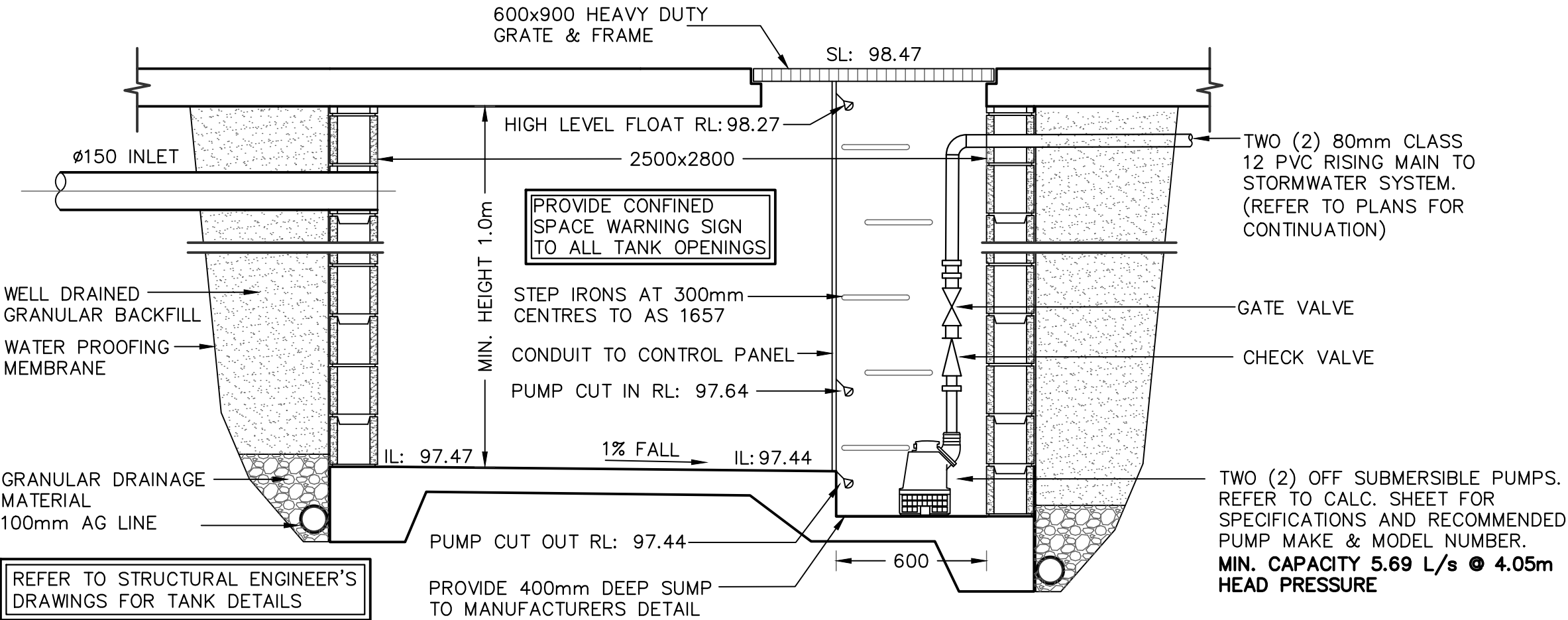
PUMP FAILURE WARNING SIGN
NOT TO SCALE



PUMP–OUT TANK PLAN DETAIL
SCALE 1:50



STEP IRON DETAIL
SCALE: 1:10



PUMP–OUT TANK SECTION DETAIL
SCALE N.T.S.

PUMP TO BE USED (IN ACCORDANCE WITH AS/NZS 3500.3 A 5.6L/S PUMP IS REQUIRED AT MINIMUM)

Type	Output		Outlet		Rated Head Capacity		Maximum Head Capacity		Weigh Kg	Dimension		
	HP	kW	mm	Inch	M	LPM	M	LPM		L(mm)	W(mm)	H(mm)
KS-03	1/3	0.25	40	1 1/2"	3	130	8	180	9	188	141	305
KS-04	1/2	0.4	50	2"	5	150	8	220	11	208	140	359
KS-05	1/2	0.4	50	2"	5	160	10	260	14	230	156	375
KS-08	1	0.75	50	2"	6	240	13	380	21	290	180	425
KS-20	2	1.5	80	3"	10	300	16	600	31	278	182	475
KS-30	3	2.2	80	3"	10	500	18	800	42	390	250	450
KS-50	5	3.7	100	4"	10	800	21	1100	48	450	240	530
KS-75	7 1/2	5.6	100	4"	15	800	23	1300	60	550	310	590
KS-100	10	7.5	150	6"	18	900	25	1600	70	550	310	610

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ISSUE FOR SECTION 4.55 APPROVAL

FOR APPROVAL

LOT 4 – PUMP STORAGE CALCS:

BELOW GROUND STORAGE:

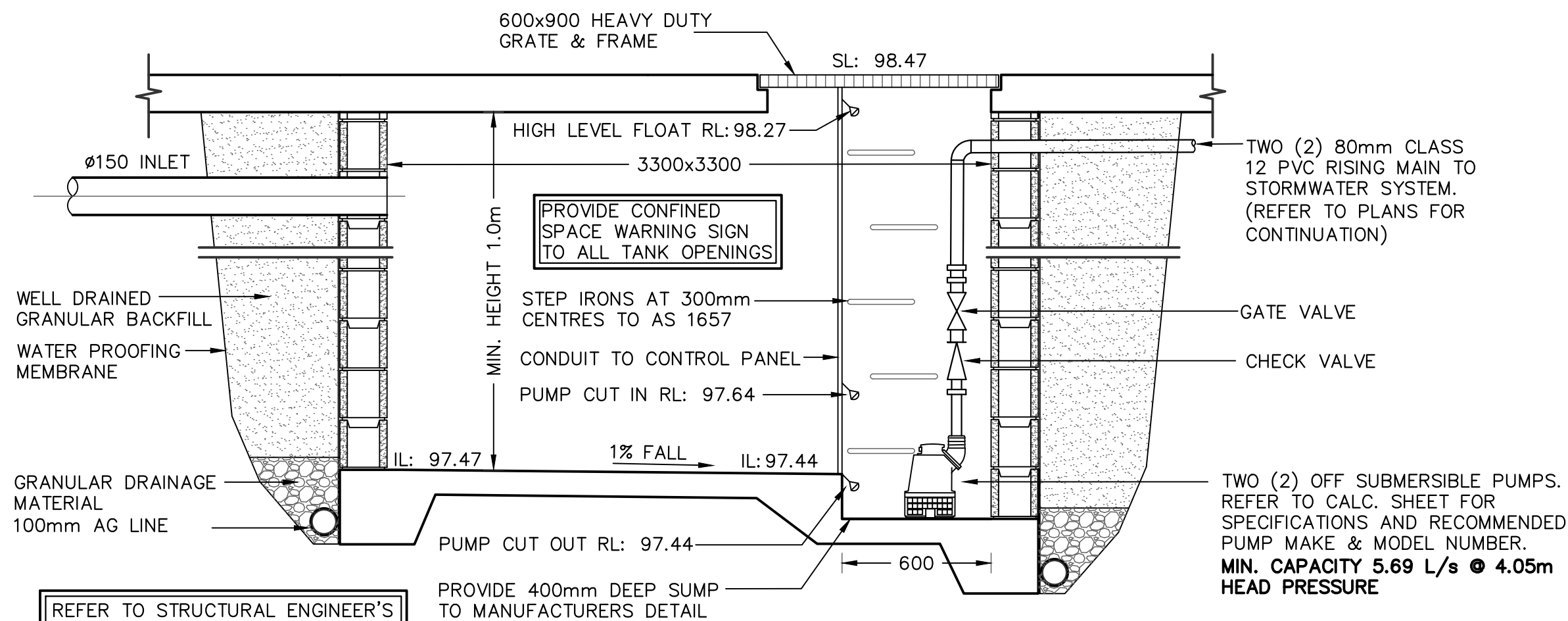
100yr 120 MIN ARI STORM= 106mm
CATCHMENT AREA= 100.00m²

V=Axd
=100.00x(106/1000)
=10.6m³ REQUIRED
=10.89m³ PROVIDED

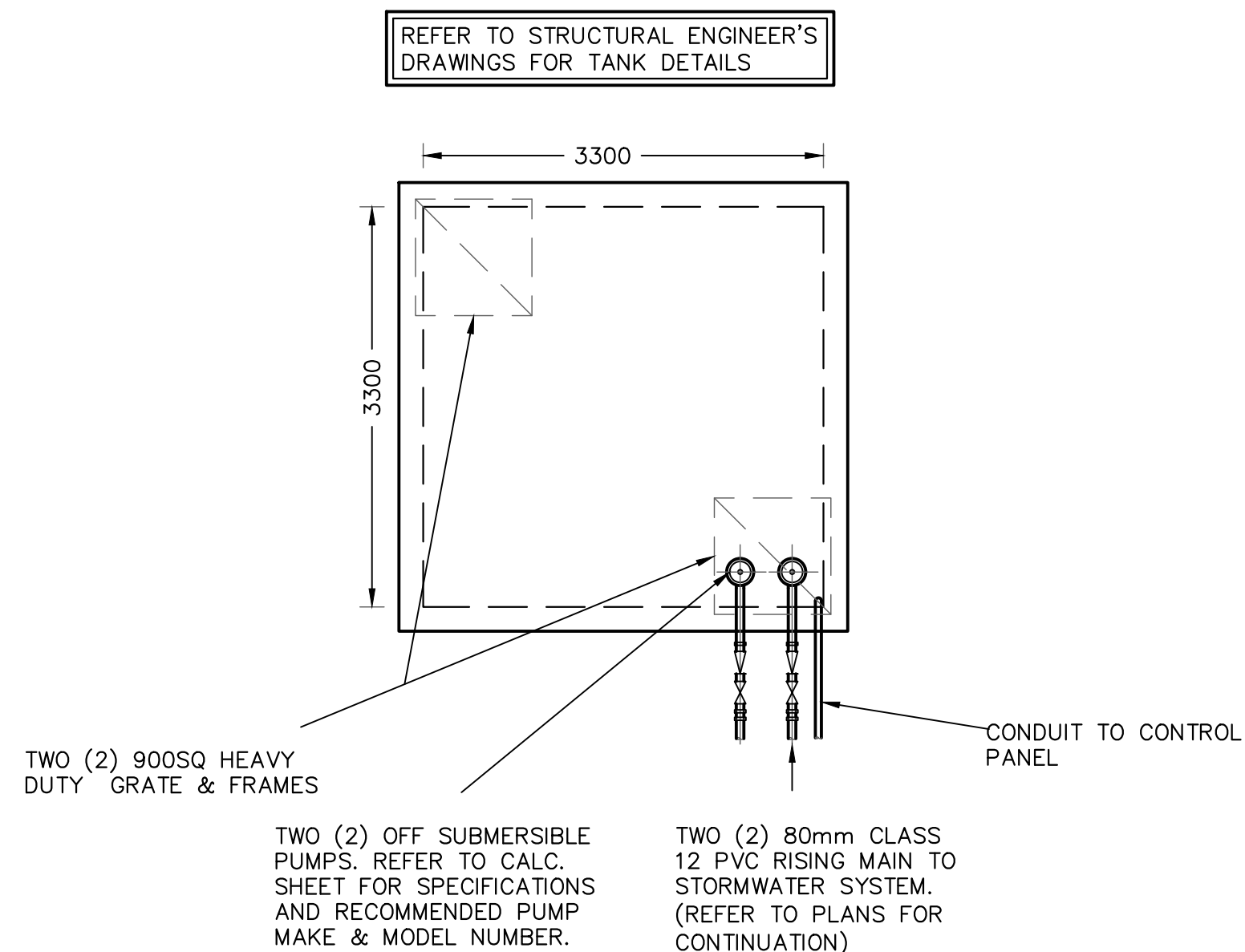
PUMP DISCHARGE RATE WAS DESIGNED FOR THE 100yr 5 MIN STORM:

Q=CIA/3600
=1.0x288x100.0/3600
=8 L/s REQUIRED @ 1.76 m OF HEAD

RECOMMENDED PUMP: DUAL **SABRE MODEL NO. KS-20** PUMPS WITH **80mm PVC CLASS 12** OUTLETS.

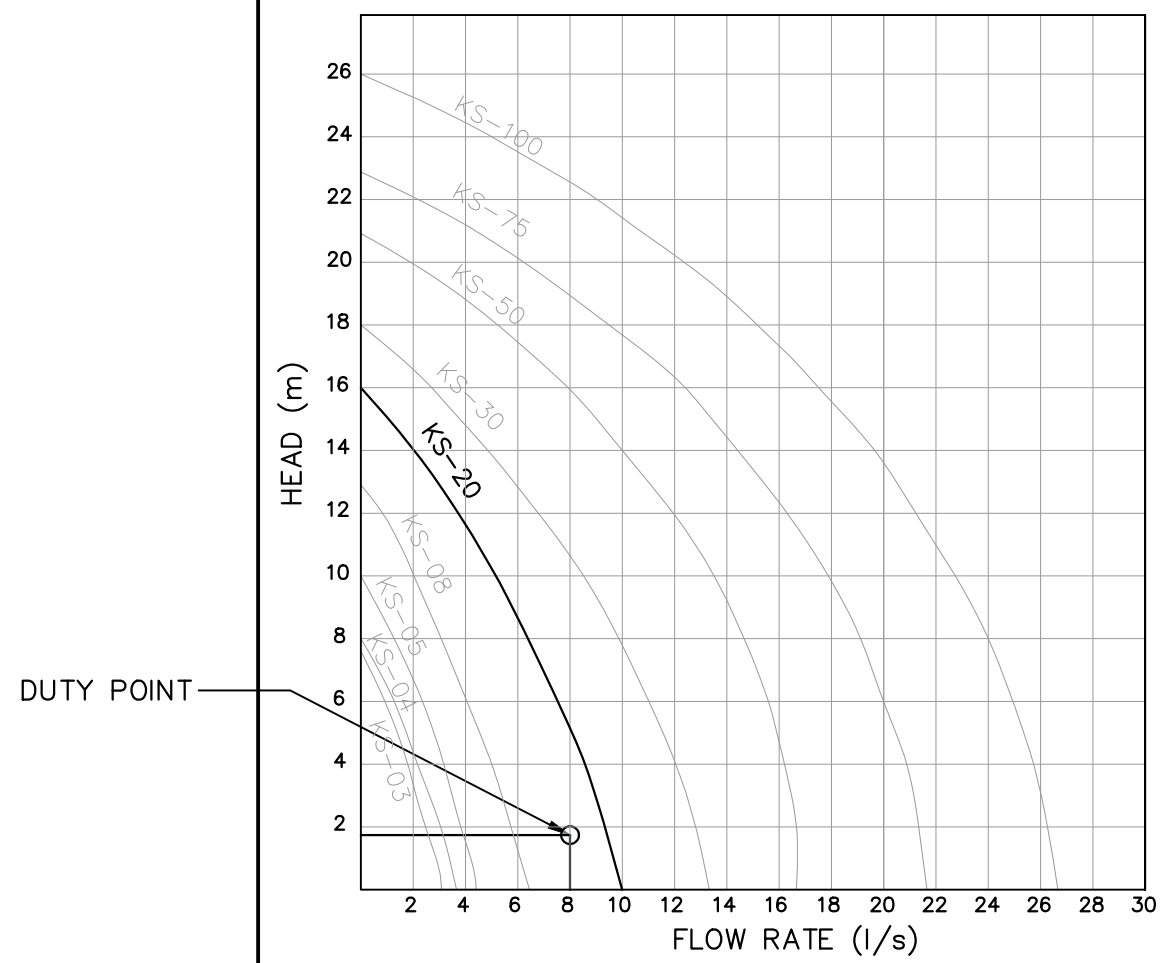


PUMP-OUT TANK SECTION DETAIL
SCALE N.T.S.



PUMP-OUT TANK PLAN DETAIL
SCALE 1:50

PUMP PERFORMANCE CURVES:



PUMP MAKE & MODEL DETAILS
SCALE N.T.S.

Type	Output		Outlet		Rated Head Capacity		Maximum Head Capacity		Weigh Kg	Dimension		
	HP	kW	mm	Inch	M	LPM	M	LPM		L(mm)	W(mm)	H(mm)
KS-03	1/3	0.25	40	1 1/2"	3	130	8	180	9	188	141	305
KS-04	1/2	0.4	50	2"	5	150	8	220	11	208	140	359
KS-05	1/2	0.4	50	2"	5	160	10	260	14	230	156	375
KS-08	1	0.75	50	2"	6	240	13	380	21	290	180	425
KS-20	2	1.5	80	3"	10	300	16	600	31	278	182	475
KS-30	3	2.2	80	3"	10	500	18	800	42	390	250	450
KS-50	5	3.7	100	4"	10	800	21	1100	48	450	240	530
KS-75	7 1/2	5.6	100	4"	15	800	23	1300	60	550	310	590
KS-100	10	7.5	150	6"	18	900	25	1600	70	550	310	610

PUMP TO BE USED (IN ACCORDANCE WITH AS/NZS 3500.3 A 8L/S PUMP IS REQUIRED AT MINIMUM)

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FOR APPROVAL

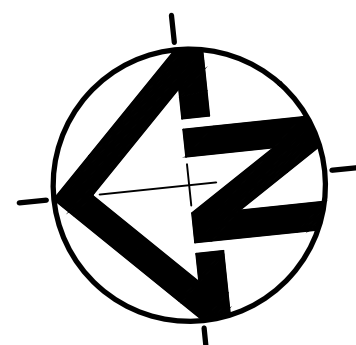
Rev.	Description	By.	Chk.	App.	Date
05	FOR SECTION 4.55 APPROVAL	J.M.	M.W.	P.E.	26/07/2024
04	FOR SECTION 4.55 APPROVAL	J.M.	M.W.	P.E.	29/04/2024
03	FOR SECTION 4.55 APPROVAL	T.P.	M.W.	P.E.	20/08/2021
02	FOR SECTION 4.55 APPROVAL	T.P.	M.W.	P.E.	12/08/2021
01	FOR SECTION 4.55 APPROVAL	T.P.	M.W.	P.E.	05/06/2021
A	FOR APPROVAL	J.M.	J.D.	P.E.	03/02/2020



Client
TONY & GEORGINA NASSIF

Project
26 RALSTON ROAD, PALM BEACH

Title
**GARAGE, NOTES&DETAIL
PUMP-OUT - LOT 4**



Date
26/07/2024

Scale
**1:100 @ A1
(original size)**

1:200 @ A3

Design
J.M.

Drawn
J.M.

Checked
M.W.

Project Number

SW19162

Approved

P.E.

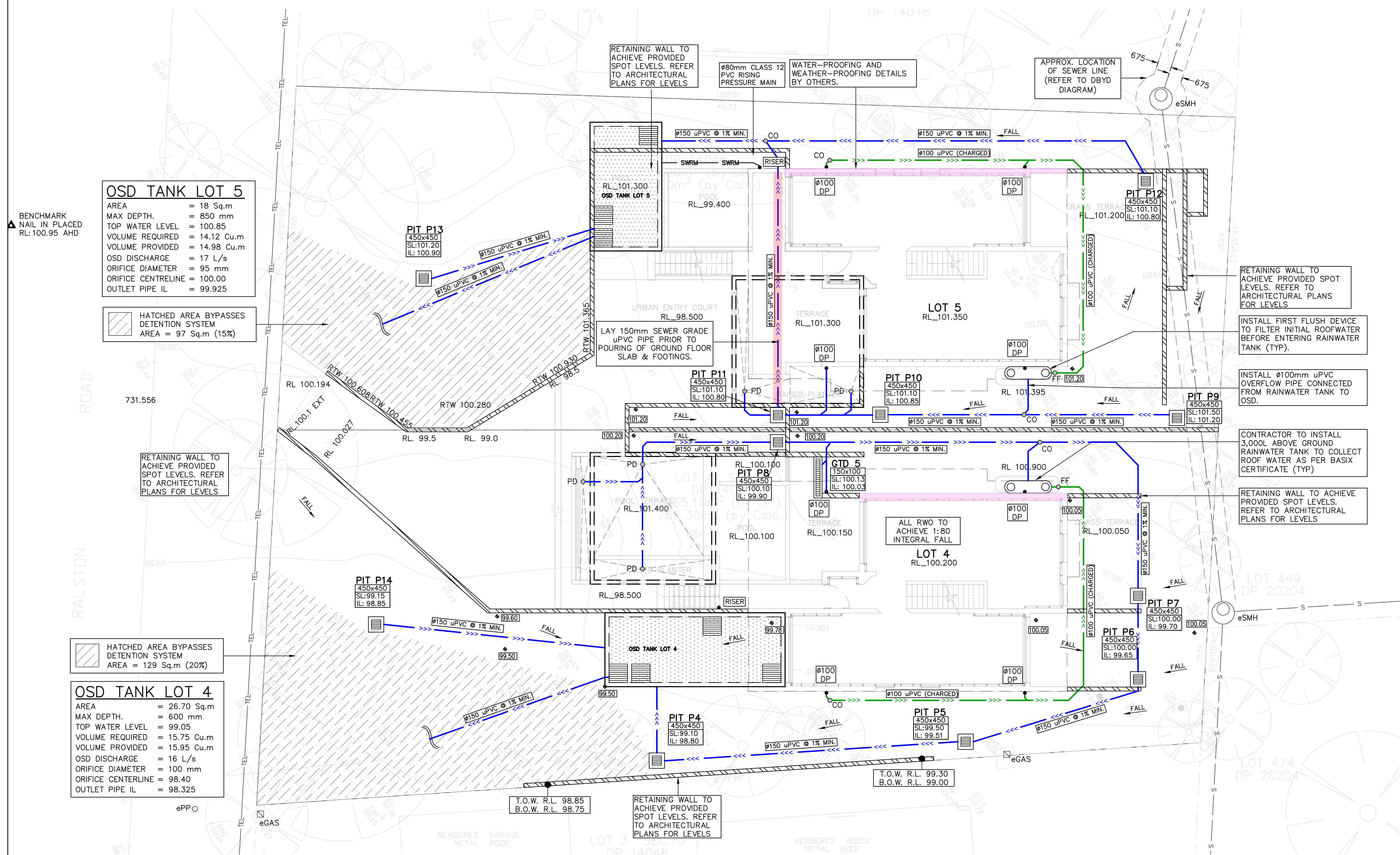
PAUL EL-BAYEH
B.E.,M.E.(struct/foundation),M.I.E. Aust

Drawing Number

SWDP05

Revision

05



DESIGN NOTES:

- THE SITE IS LOCATED IN NORTHERN BEACHES COUNCIL.
- LOT 4 SITE AREA = 766.30m²
LOT 5 SITE AREA = 731.60m²
- TOTAL IMPERVIOUS AREAS EXCEED 40% OF THE TOTAL SITE AREA. THERE FOR OSD STORAGE SYSTEM REQUIRED AS PER SECTION 2.1 OF THE WARRINGAH COUNCIL ON-SITE STORMWATER DETENTION TECHNICAL SPECIFICATION. (AUGUST 2012)
- THE OSD STORAGE SYSTEM TO BE BELOW GROUND AND LOCATED UNDER GARAGE AREA, AS SHOWN.
- MINIMUM FREEBOARD OF 300mm HAS BEEN PROVIDED FOR HABITABLE FLOORS AND 150mm FOR NON HABITABLE FLOORS INCLUDING PATIOS.
- MINIMUM 1% GRADE FOR OSD TANKS.
- INSTALL STEP IRONS FOR PITS GREATER THAN 600mm DEEP.
- INSTALL CLEAR OUT FOR INSPECTION AND MAINTENANCE PURPOSES.
- ALL NEW DOWNPIPES AND STORMWATER PIPES SHOWN ON PLAN ARE Ø100mm uPVC U.N.O.
- DOWNPipe LOCATIONS ARE INDICATIVE AND TO BE CONFIRMED DURING CONSTRUCTION.
- RAINWATER TANK TO BE EQUIPPED WITH FIRST FLUSH AND MOSQUITO PROTECTION DEVICES (REFER DETAIL).
- LOCATION RAINWATER TANK SHOWN ON PLAN IS INDICATIVE. TO BE CONFIRMED DURING CONSTRUCTION.
- ALLOW FOR MINOR REGRADING OF FINISHED SURFACE TO ARCHIVE FALL TOWARDS GSIP (TYP).
- ALL NEW STORMWATER PIPES TO HAVE A MINIMUM OF 300mm TOPSOIL COVER OR 100mm CONCRETE COVER U.N.O.
- ALL PROPOSED STORMWATER SERVICES TO BE CONSTRUCTED AT MINIMUM 0.6m CLEAR DISTANCE FORM EXISTING SEWER PIPE.
- PROVIDE SUBSOIL DRAINAGE WITHIN LANDSCAPED AREAS, PLANTER BEDS & BEHIND RETAINING WALLS TO PREVENT LONG TERM SATURATION DURING PROLONGED WET WEATHER (TYP).
- EXISTING SERVICES SHOWN ON PLAN ARE INDICATIVE ONLY. CONTRACTOR TO DETERMINE EXACT SIZE, LOCATION AND DEPTH BEFORE COMMENCING ANY WORKS (TYP).
- CONSTRUCTION OVER EASEMENTS LOCATED ON SITE IS PROHIBITED. CONTRACTOR TO ENSURE THERE ARE NO OBSTRUCTIONS (TYP).

SITE STORMWATER PLAN
SCALE 1:100

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ISSUE FOR SECTION 4.55 APPROVAL

FOR APPROVAL

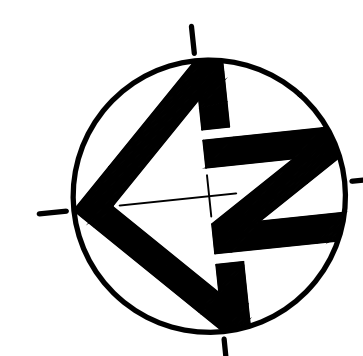
Rev.	Description	By.	Chk.	App.	Date
05	FOR SECTION 4.55 APPROVAL	J.M.	M.W.	P.E.	26/07/2024
04	FOR SECTION 4.55 APPROVAL	J.M.	M.W.	P.E.	29/04/2024
03	FOR SECTION 4.55 APPROVAL	T.P.	M.W.	P.E.	20/08/2021
02	FOR SECTION 4.55 APPROVAL	T.P.	M.W.	P.E.	12/08/2021
01	FOR SECTION 4.55 APPROVAL	T.P.	M.W.	P.E.	05/06/2021
A	FOR APPROVAL	J.M.	J.D.	P.E.	03/02/2020



Client
TONY & GEORGINA NASSIF

Project
26 RALSTON ROAD, PALM BEACH

Title
SITE STORMWATER PLAN & NOTES



Date
26/07/2024

Scale
1:100 @ A1 (original size)
1:200 @ A3

Design
J.M.

Drawn
J.M.

Checked
M.W.

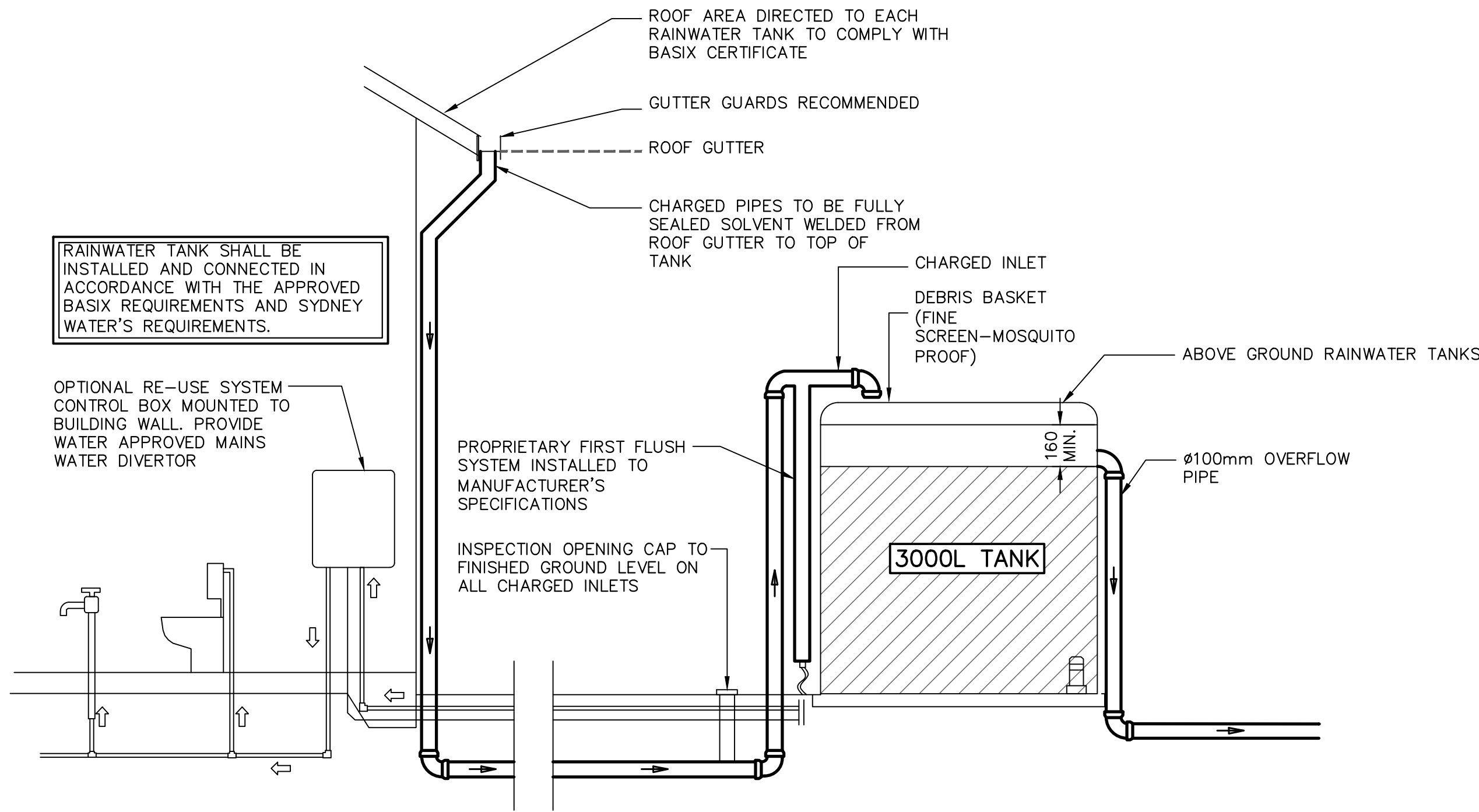
Project Number
SW19162

Approved
P.E.

PAUL EL-BAYEH
B.E., M.E. (struct/foundation), M.I.E. Aust

Drawing Number
SWDP11

Revision
05

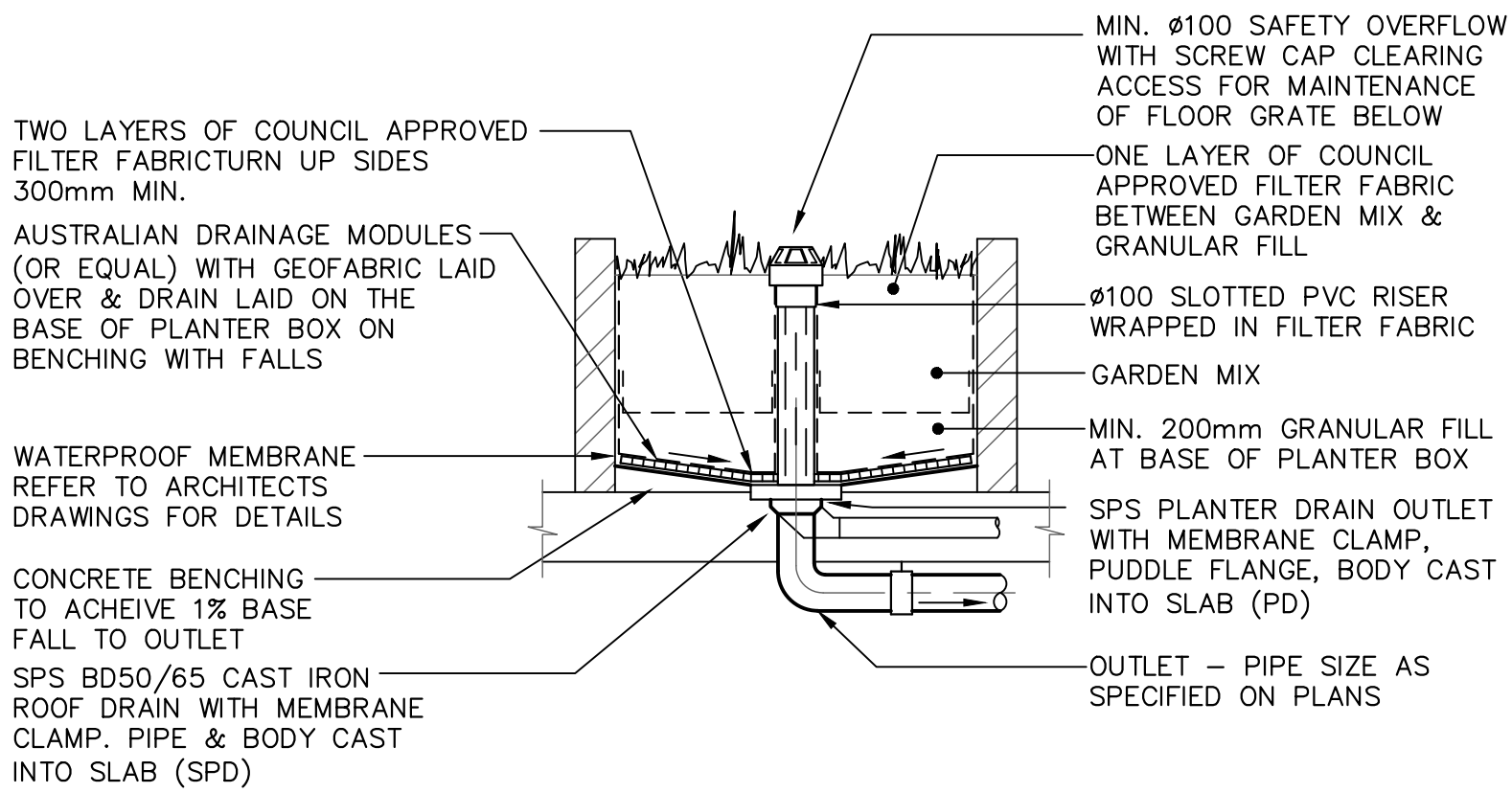


TYPICAL RAINWATER RE-USE TANK CONFIGURATION
NOT TO SCALE

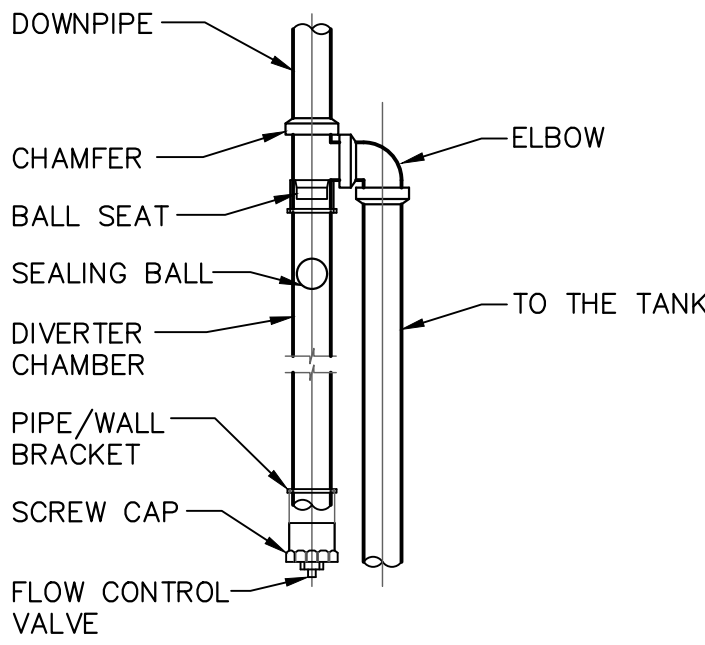


RAINWATER SIGN DETAIL
SCALE: 1:10

- NOTES: –
- PROVIDE WARNING SIGN IN ACCORDANCE WITH AS 1319 IN A CLEAR AND VISIBLE LOCATION AT ALL RAINWATER SUPPLY POINTS
 - BACKGROUND IS YELLOW TEXT IS WHITE ON BLACK BACKGROUND



PLANTER DRAIN WITH VERTICAL
OVERFLOW PROVISION (PD)
SCALE 1:20



FIRST FLUSH DIVERTER
SCALE: 1:20

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ISSUE FOR SECTION 4.55 APPROVAL

FOR APPROVAL

Rev.	Description	By.	Chk.	App.	Date
05	FOR SECTION 4.55 APPROVAL	J.M.	M.W.	P.E.	26/07/2024
04	FOR SECTION 4.55 APPROVAL	J.M.	M.W.	P.E.	29/04/2024
03	FOR SECTION 4.55 APPROVAL	T.P.	M.W.	P.E.	20/08/2021
02	FOR SECTION 4.55 APPROVAL	T.P.	M.W.	P.E.	12/08/2021
01	FOR SECTION 4.55 APPROVAL	T.P.	M.W.	P.E.	05/06/2021
A	FOR APPROVAL	J.M.	J.D.	P.E.	03/02/2020



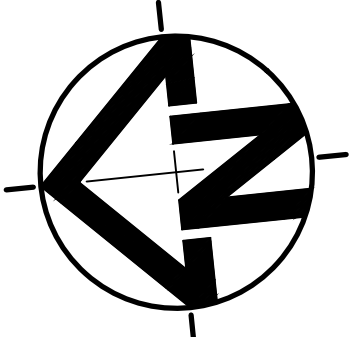
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Fax: (02) 9630 0132
info@capitalengineering.com.au
www.capitalengineering.com.au

Client
TONY & GEORGINA NASSIF

Project
26 RALSTON ROAD, PALM BEACH

Title
**SITE STORMWATER PLAN
NOTES & DETAILS**



Date
26/07/2024

Scale
**1:100 @ A1
(original size)**

1:200 @ A3

Design
J.M.

Drawn
J.M.

Checked
M.W.

Project Number
SW19162

Approved

P.E.

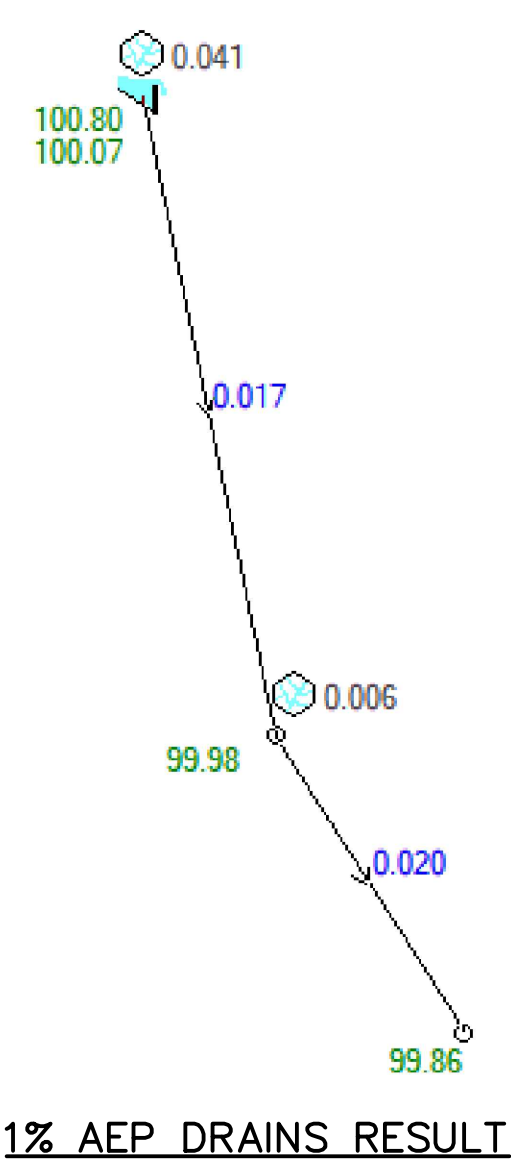
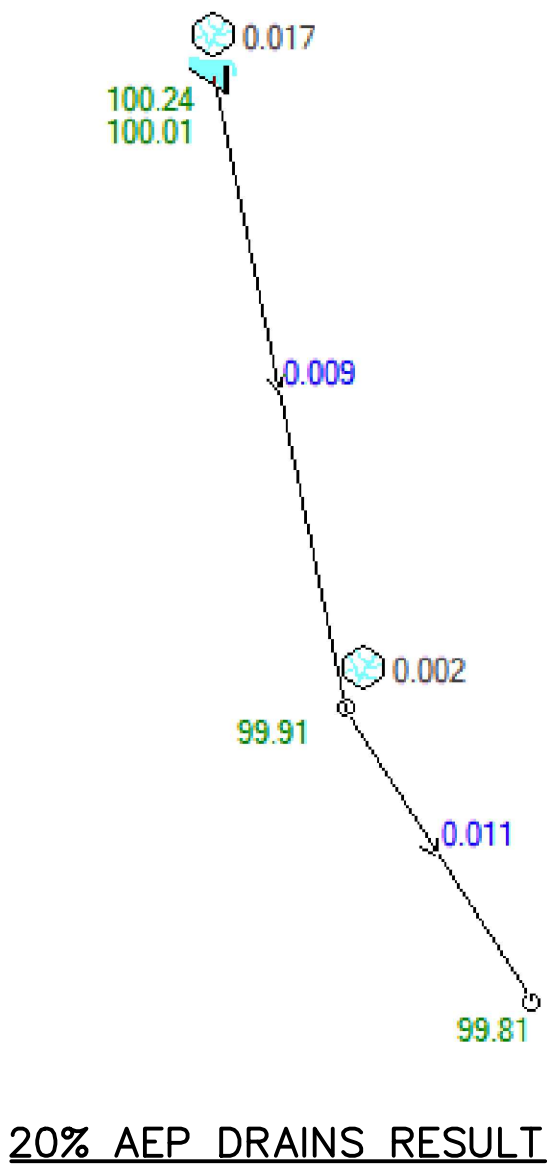
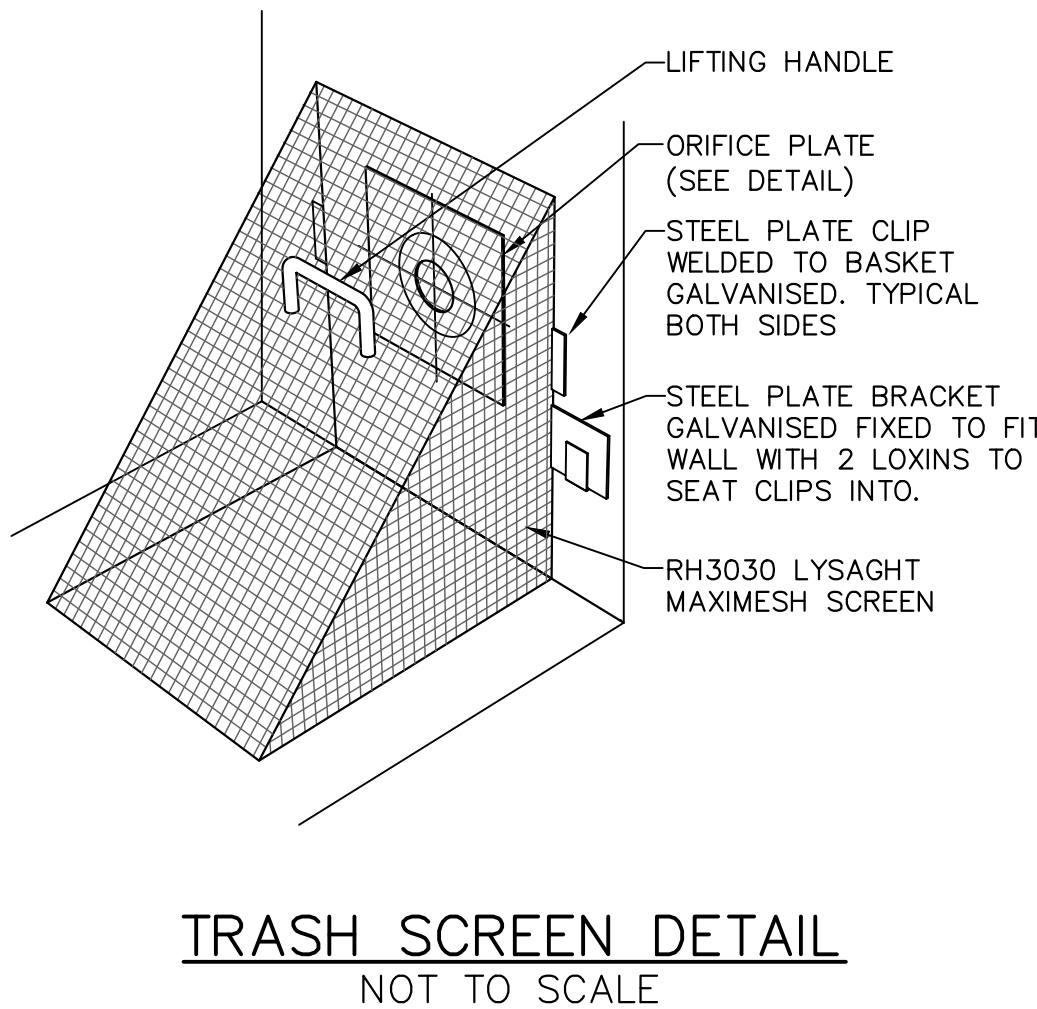
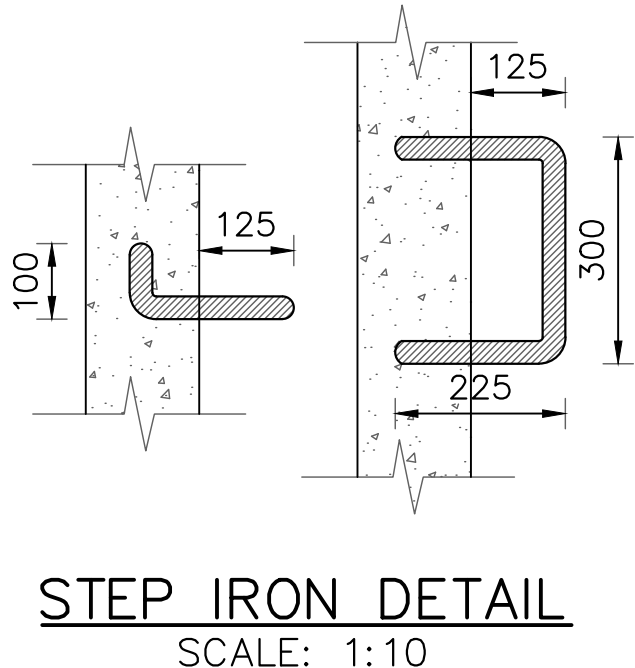
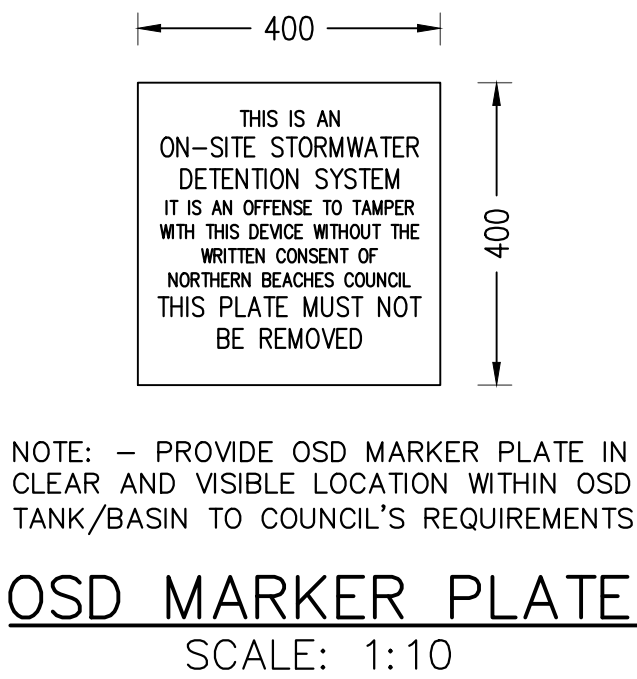
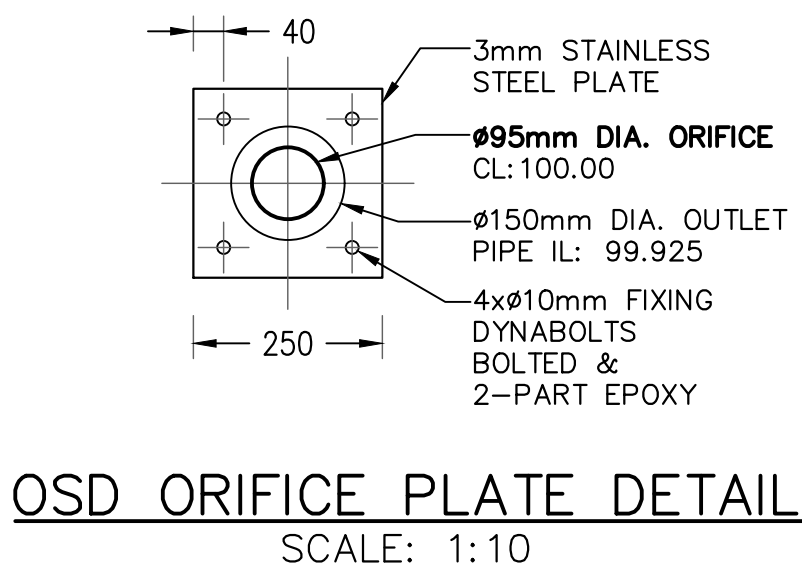
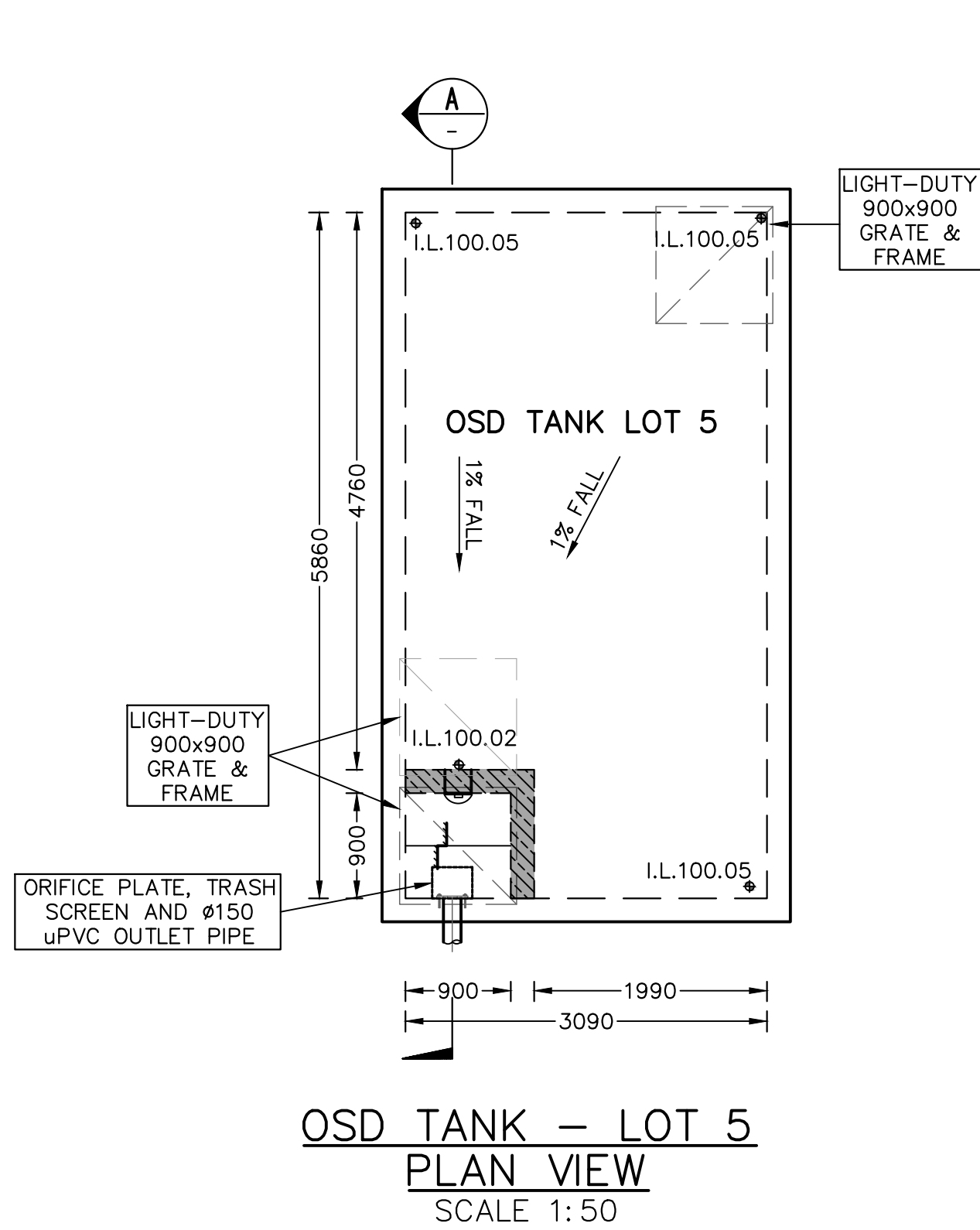
PAUL EL-BAYEH
B.E.,M.E.(struct/foundation),M.I.E. Aust

Drawing Number

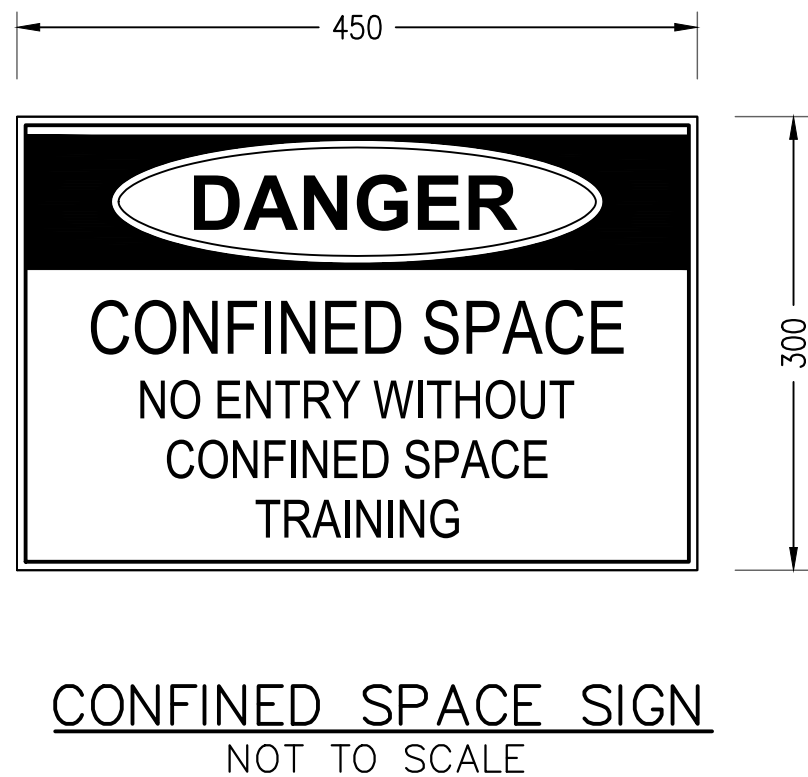
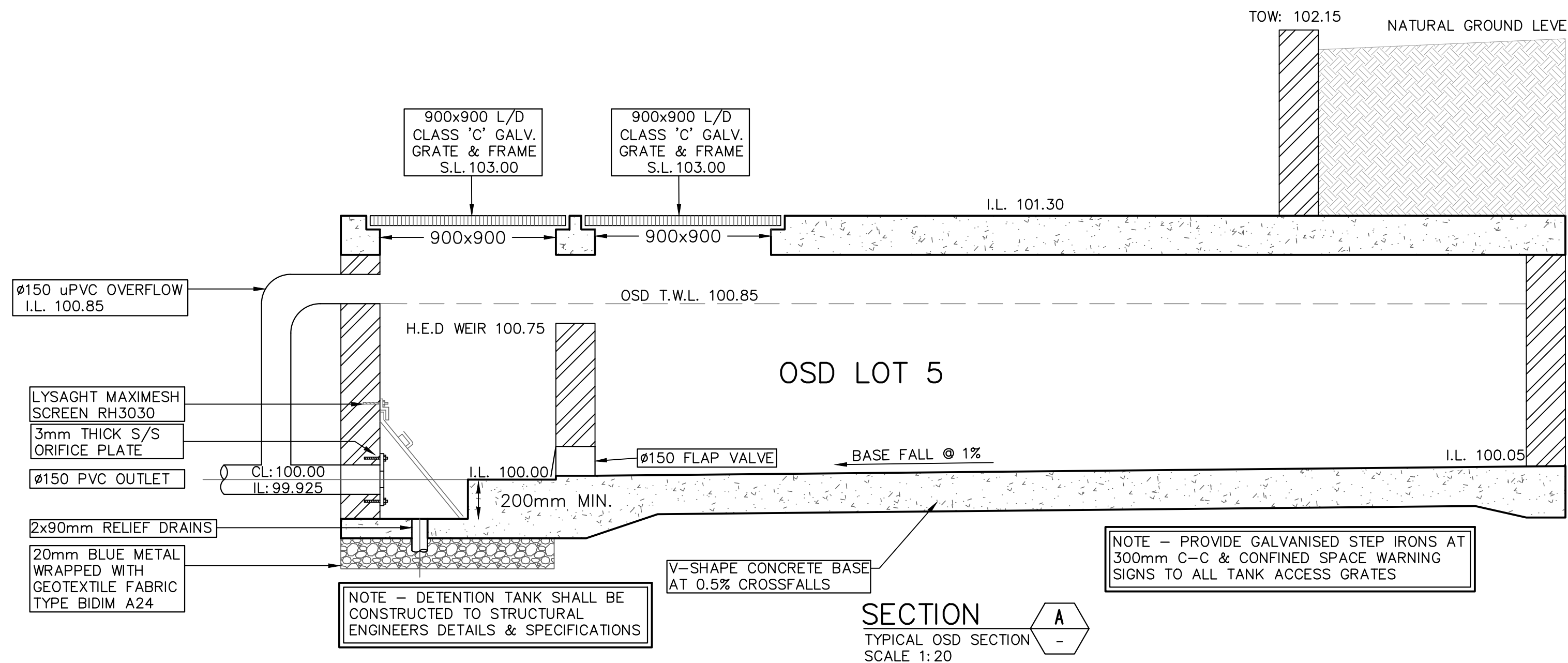
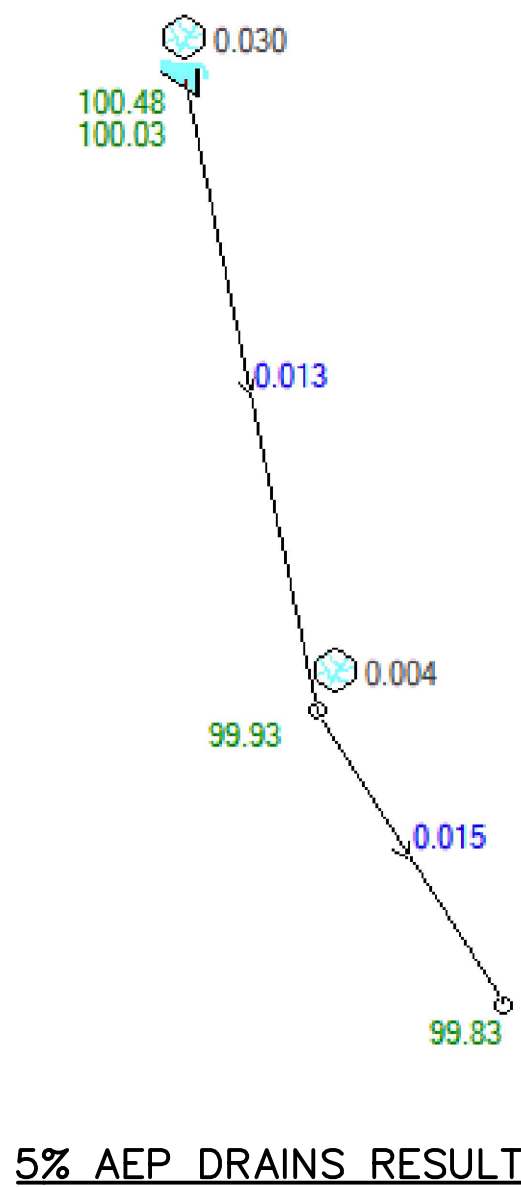
SWDP12

Revision

05



DRAINS RESULTS	
STORM (AEP)	POST (L/s)
20%	11
5%	15
1%	20



KEY NOTES:

INSTALL STEP IRONS FOR EASE OF ACCESS DURING MAINTENANCE OF DETENTION TANK TO COUNCIL SATISFACTION.

INSTALL CONFINED SPACE SIGN ABOVE DETENTION TANK FOR PUBLIC AWARENESS AND WARNING.

ALL STORMWATER PIPES ARE MIN. Ø100mm uPVC AND SLOPING @ 1.0% U.N.O (TYP).

ALL BUILDING AND HYDRAULIC SERVICES TO BE PROPERLY CO-ORDINATED WITH STORMWATER PIPES AND ENSURE NO CLASHES ARE PRESENT DURING CONSTRUCTION (TYP).

STORMWATER PIPE ARRANGEMENT TO BE CO-ORDINATED WITH STRUCTURAL SLAB AND BEAMS WHERE REQUIRED (TYP).

ISSUE FOR SECTION 4.55 APPROVAL

FOR APPROVAL

Rev.	Description	By.	Chk.	App.	Date
05	FOR SECTION 4.55 APPROVAL	J.M.	M.W.	P.E.	26/07/2024
04	FOR SECTION 4.55 APPROVAL	J.M.	M.W.	P.E.	29/04/2024
03	FOR SECTION 4.55 APPROVAL	T.P.	M.W.	P.E.	20/08/2021
02	FOR SECTION 4.55 APPROVAL	T.P.	M.W.	P.E.	12/08/2021
01	FOR SECTION 4.55 APPROVAL	T.P.	M.W.	P.E.	05/06/2021
A	FOR APPROVAL	J.M.	J.D.	P.E.	03/02/2020

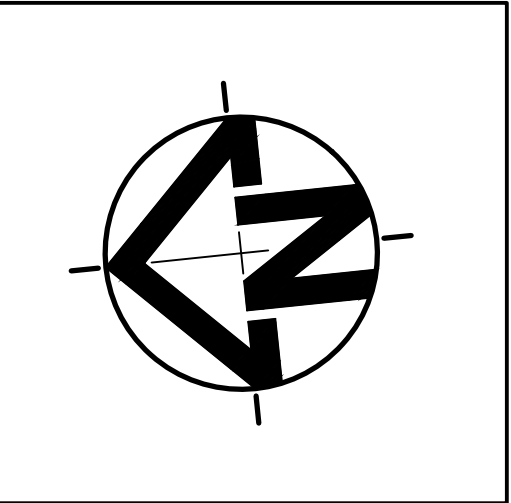
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Fax: (02) 9630 0132
info@capitalengineering.com.au
www.capitalengineering.com.au

Client
TONY & GEORGINA NASSIF

Project
26 RALSTON ROAD, PALM BEACH

Title
**OSD LOT 5
NOTES & DETAILS**



Date
26/07/2024

Scale
**1:100 @ A1
(original size)**
1:200 @ A3

Design
J.M.

Drawn
J.M.

Checked
M.W.

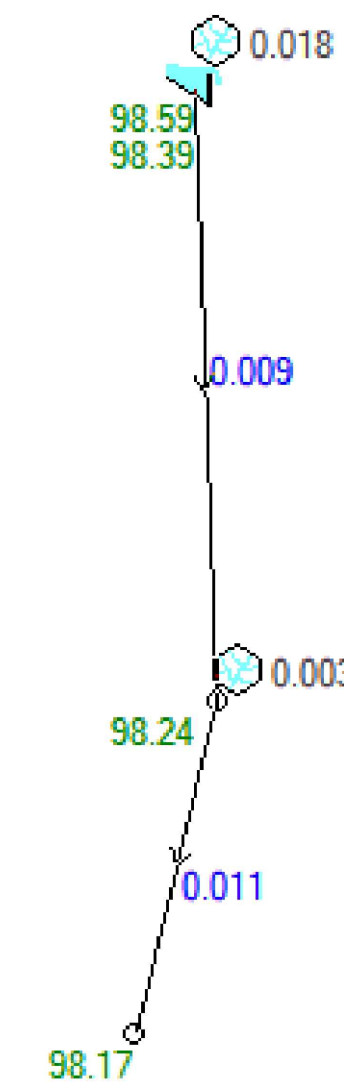
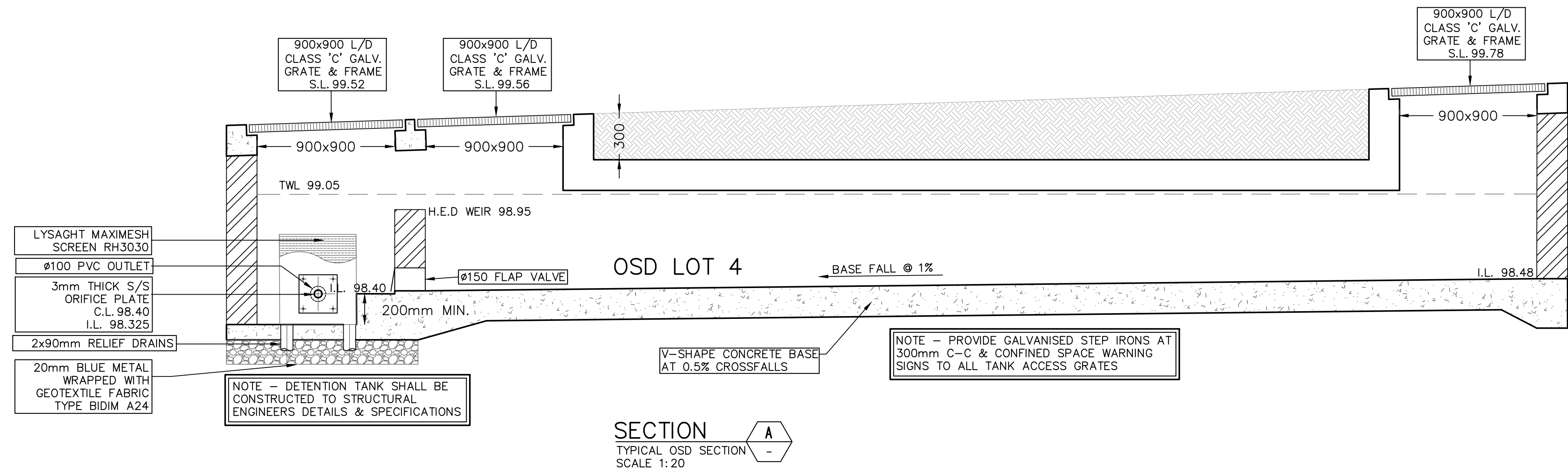
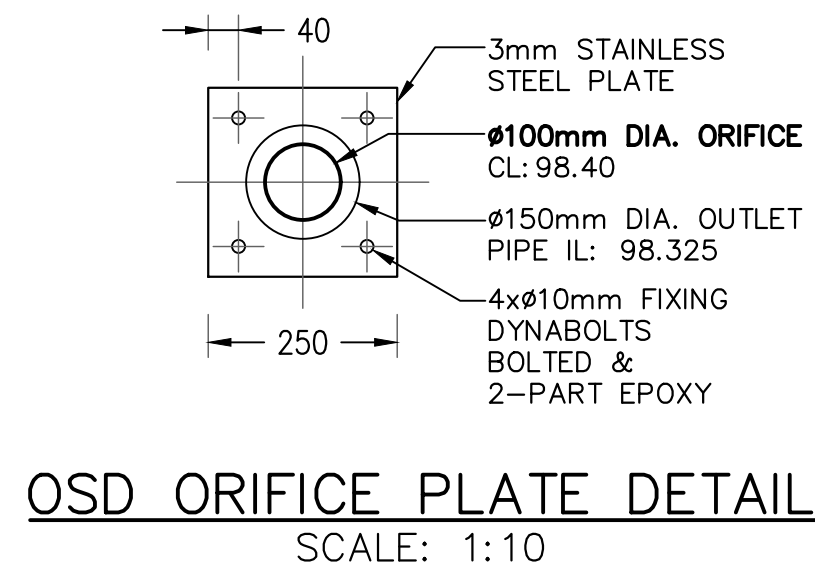
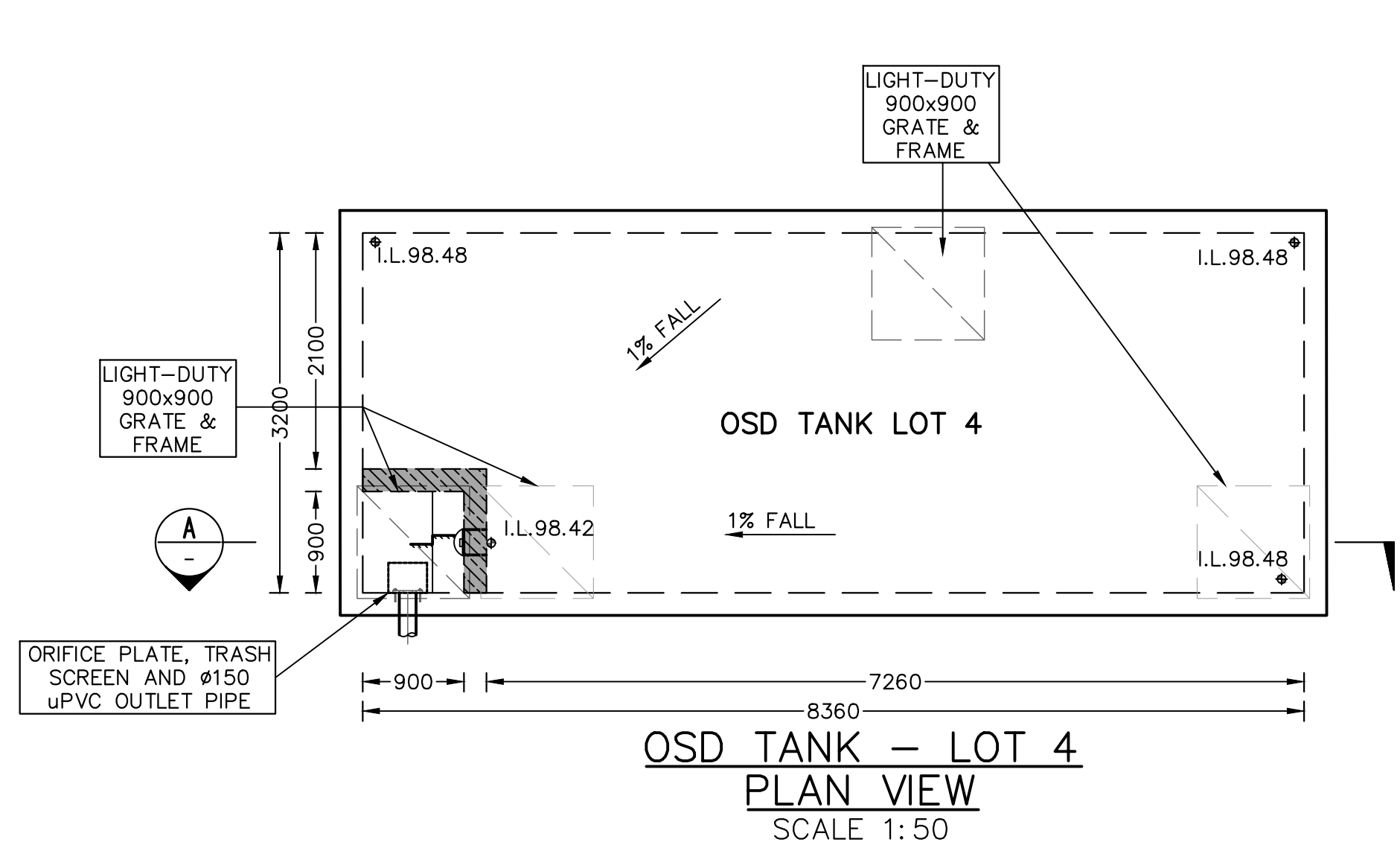
Project Number
SW19162

Approved
P.E.

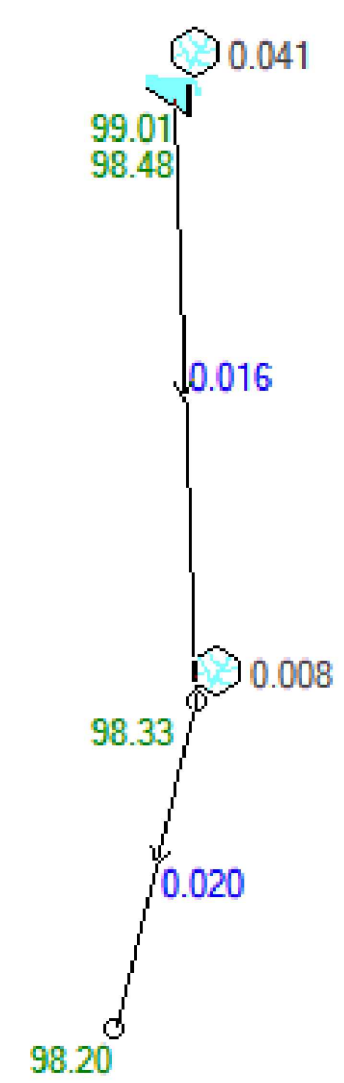
PAUL EL-BAYEH
B.E., M.E. (struct/foundation), M.I.E. Aust

Drawing Number
SWDP13

Revision
05

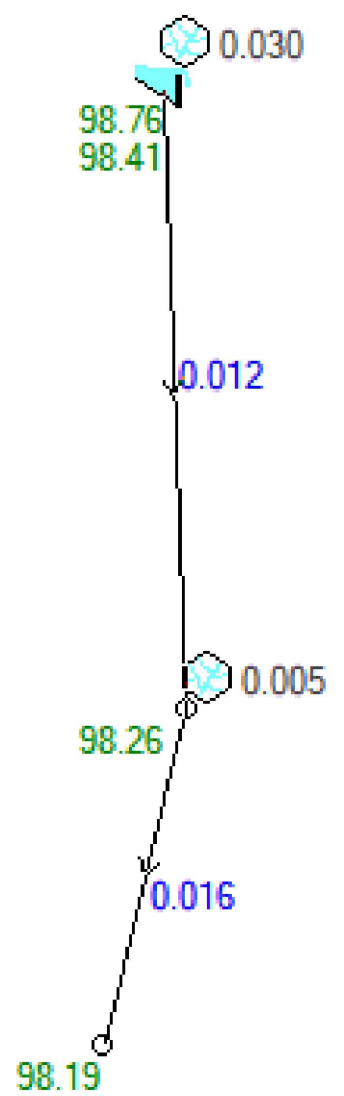


20% AEP DRAINS RESULT



1% AEP DRAINS RESULT

DRAINS RESULTS	
STORM (AEP)	POST (L/s)
20%	11
5%	16
1%	20



5% AEP DRAINS RESULT

Rev.	Description	By.	Chk.	App.	Date
05	FOR SECTION 4.55 APPROVAL	J.M.	M.W.	P.E.	26/07/2024
04	FOR SECTION 4.55 APPROVAL	J.M.	M.W.	P.E.	29/04/2024
03	FOR SECTION 4.55 APPROVAL	T.P.	M.W.	P.E.	20/08/2021
02	FOR SECTION 4.55 APPROVAL	T.P.	M.W.	P.E.	12/08/2021
01	FOR SECTION 4.55 APPROVAL	T.P.	M.W.	P.E.	05/06/2021
A	FOR APPROVAL	J.M.	J.D.	P.E.	03/02/2020



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Client

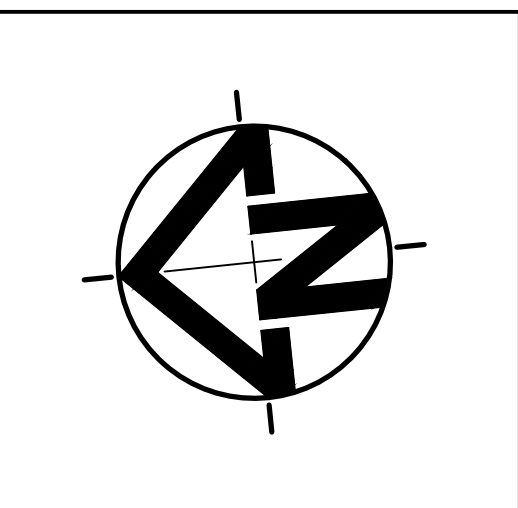
TONY & GEORGINA NASSIF

Project

26 RALSTON ROAD, PALM BEACH

Title

OSD LOT 4
NOTES & DETAILS



Date

26/07/2024

Scale

1:100 @ A1
(original size)

1:200 @ A3

Design

J.M.

Drawn

J.M.

Checked

M.W.

Project Number

SW19162

Approved

P.E.

PAUL EL-BAYEH
B.E.,M.E.(struct/foundation),M.I.E. Aust

Drawing Number

SWDP15

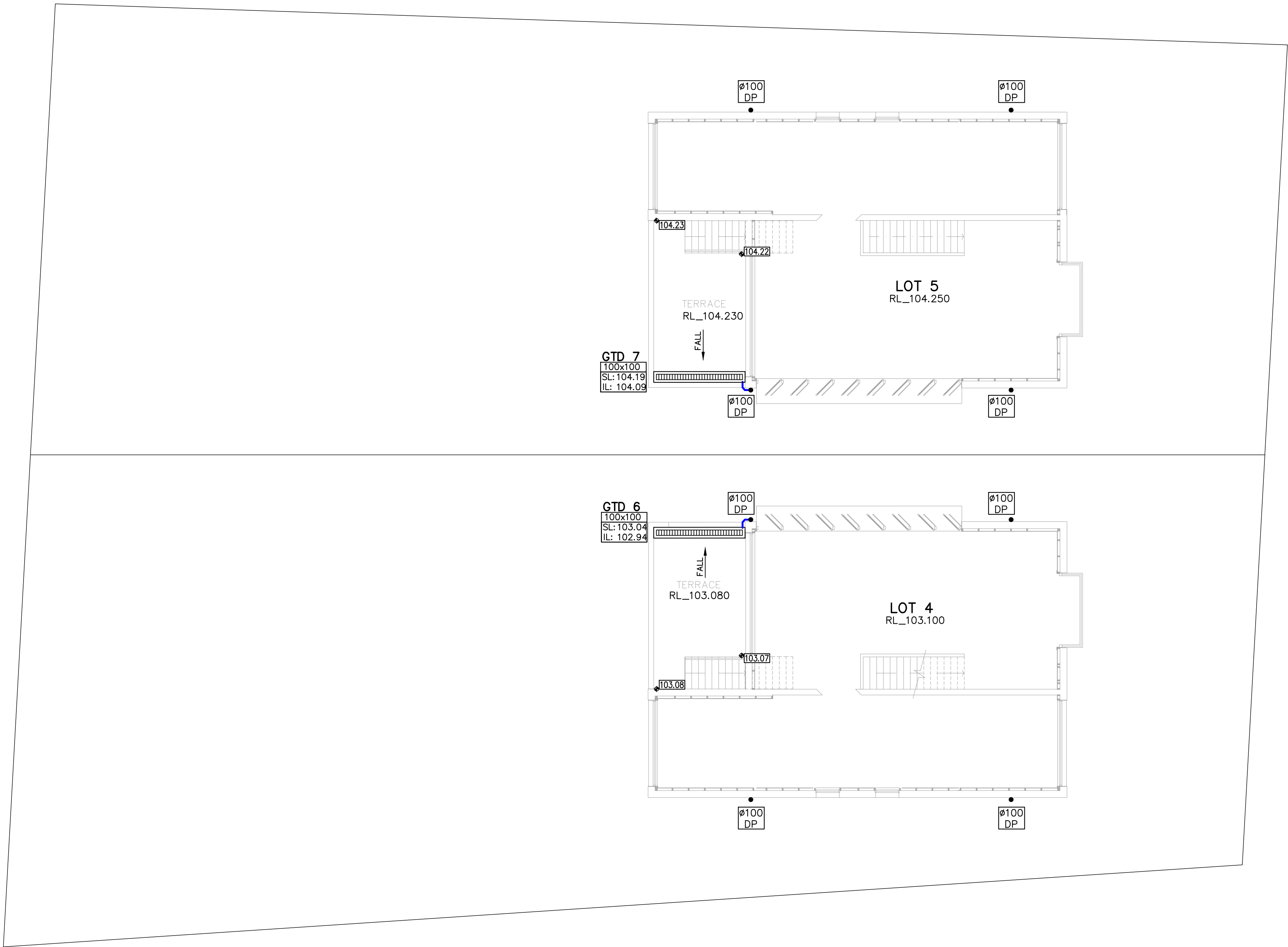
Revision

05

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ISSUE FOR SECTION 4.55 APPROVAL

FOR APPROVAL



FIRST FLOOR PLAN
SCALE 1:100

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ISSUE FOR SECTION 4.55 APPROVAL

FOR APPROVAL

Rev.	Description	By.	Chk.	App.	Date
05	FOR SECTION 4.55 APPROVAL	J.M.	M.W.	P.E.	26/07/2024
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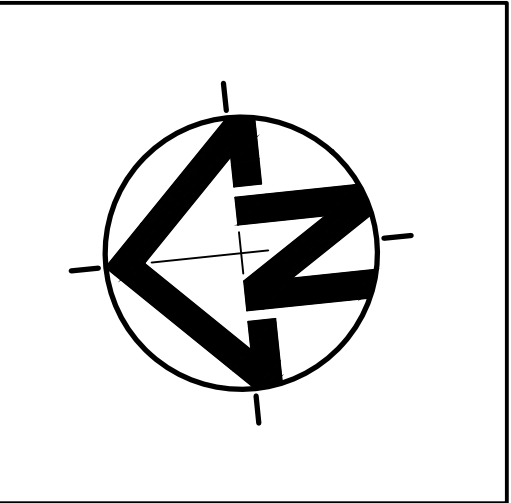
TONY & GEORGINA NASSIF

Project

26 RALSTON ROAD, PALM BEACH

Title

FIRST FLOOR PLAN
NOTES & DETAILS



Date

26/07/2024

Scale

1:100 @ A1
(original size)

1:200 @ A3

Design

J.M.

Drawn

J.M.

Checked

M.W.

Project Number

SW19162

Approved

P.E.

PAUL EL-BAYEH
B.E.,M.E.(struct/foundation),M.I.E. Aust

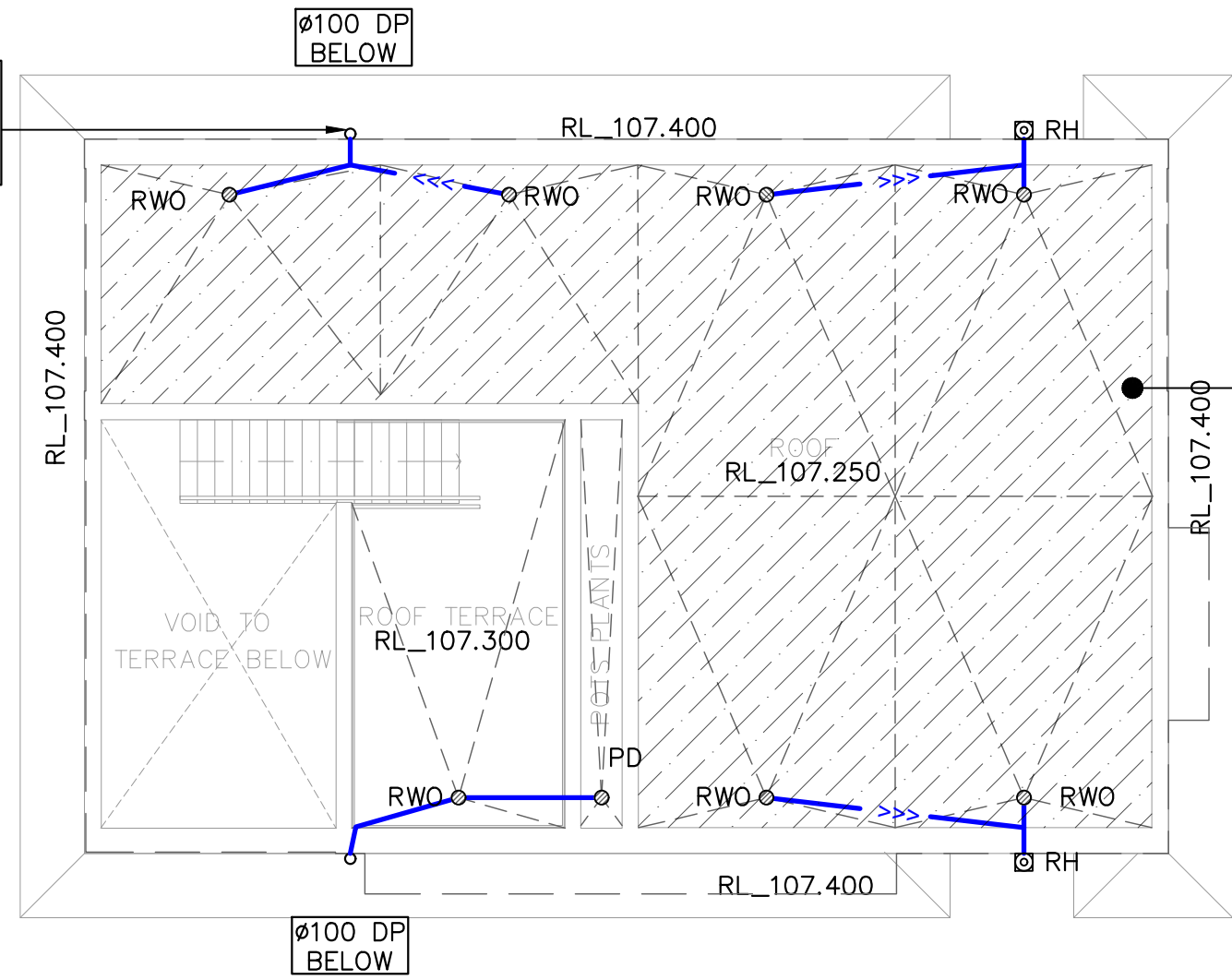
Drawing Number

SWDP20

Revision

05

DOWNPIPE LOCATIONS ARE NOMINAL AND SHALL BE CONFIRMED DURING CONSTRUCTION (TYP).



HATCHED AREA DRAINS TO LOT 5 RAINWATER TANK
AREA = 96.25 Sq.m

ROOF NOTES:

INSTALL 50mm uPVC SPITTER PIPES 20mm ABOVE SURFACE LEVEL FOR BALCONY AND CONCRETE ROOF AREAS TO ALLOW FOR EMERGENCY OVERFLOW INCASE OF BLOCKAGES DURING HEAVY STORMS. PLUMBER TO CONFIRM LOCATION DURING CONSTRUCTION.

ALL BUILDING AND HYDRAULIC SERVICES TO BE PROPERLY CO-ORDINATED WITH STORMWATER PIPES AND ENSURE NO CLASHES ARE PRESENT DURING CONSTRUCTION (TYP).

STORMWATER PIPE ARRANGEMENT TO BE CO-ORDINATED WITH STRUCTURAL SLAB AND BEAMS WHERE REQUIRED (TYP).

BALCONY, TERRACE & CONCRETE ROOF AREAS TO SLOPE TOWARDS RAINWATER OUTLETS WHERE REQUIRED (TYP).

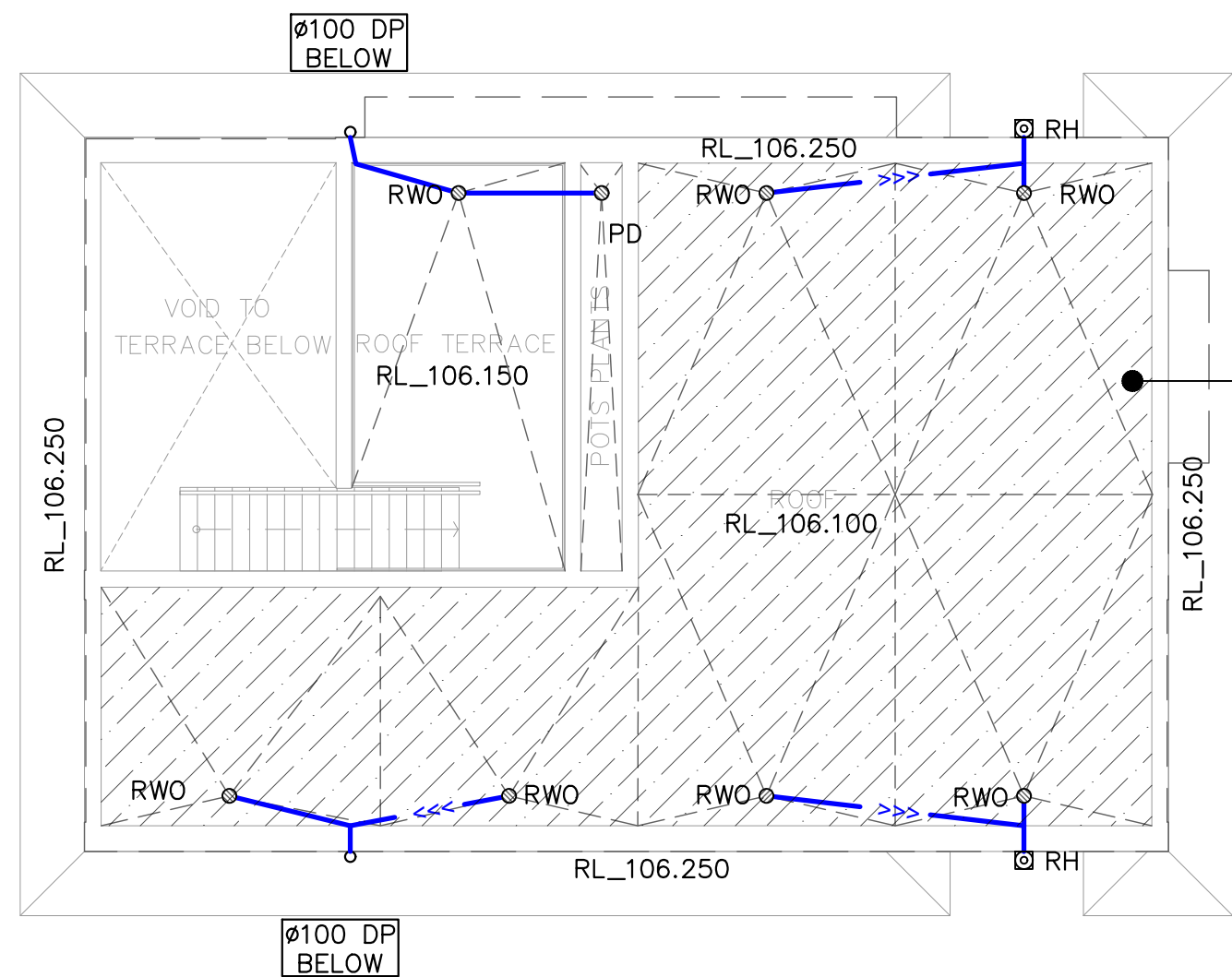
ARROW DENOTES THE SLOPE OF FINISHED SURFACE LEVEL (TYP).

DOWNPIPES SHOWN ON PLAN ARE TO BE Ø100mm uPVC U.N.O. (TYP).

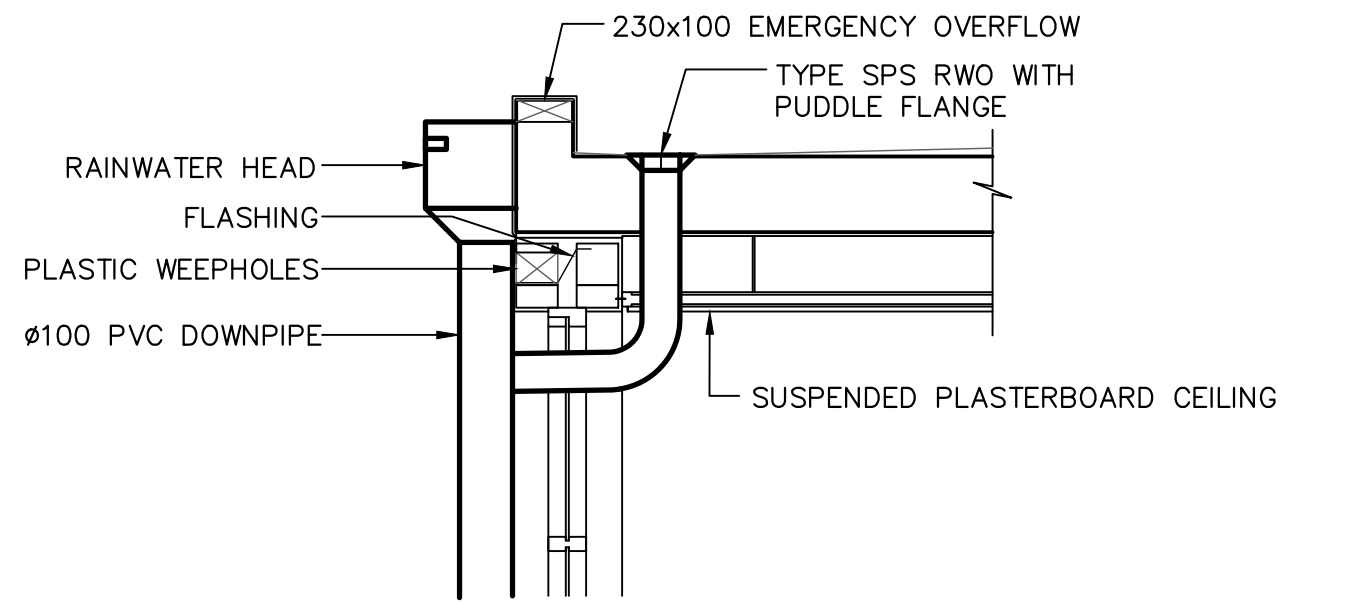
PROPOSED DOWNPIPE LOCATIONS ARE NOMINAL AND TO BE CONFIRMED DURING CONSTRUCTION (TYP).

INSTALL DOWNPIPE WITH SPREADER (IF REQUIRED) TO DISPERSE STORMWATER ONTO LOWER ROOF AREAS EFFECTIVELY.

PROVIDE SURFACE DRAINAGE FOR ALL CONCRETE AND BALCONY ROOF AREAS WHERE REQUIRED.

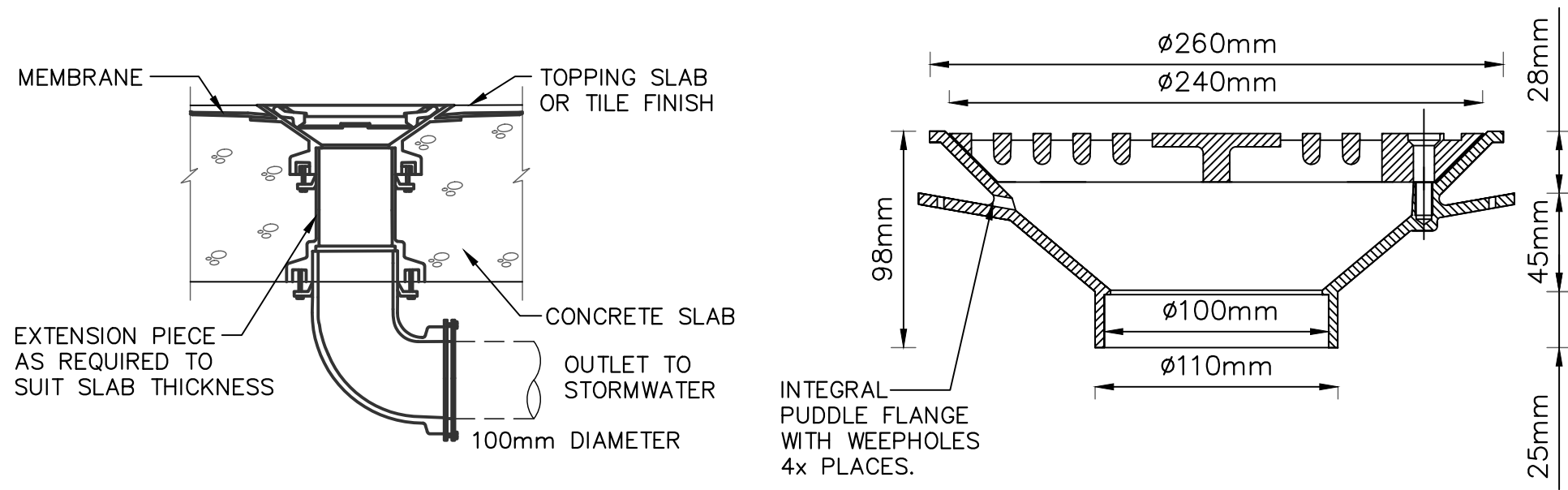


HATCHED AREA DRAINS TO LOT 4 RAINWATER TANK
AREA = 96.25 Sq.m



RAINWATER OUTLET TO RAINWATER HEAD
SCALE 1:20

ROOF PLAN
SCALE 1:100



RAINWATER OUTLET DETAIL
SCALE: 1:10

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ISSUE FOR SECTION 4.55 APPROVAL

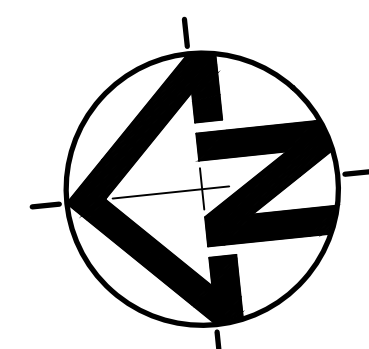
FOR APPROVAL

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Client
TONY & GEORGINA NASSIF
Project
26 RALSTON ROAD, PALM BEACH

Title
**ROOF PLAN
NOTES & DETAILS**



Date
26/07/2024
Scale
**1:100 @ A1
(original size)**
1:200 @ A3

Design
J.M.
Drawn
J.M.
Checked
M.W.
Project Number
SW19162

Approved
P.E.
PAUL EL-BAYEH
B.E., M.E. (struct/foundation), M.I.E. Aust
Drawing Number
SWDP21
Revision
05