STORMWATER DRAWINGS

FOR

892, 898-902 & 906 CANTERBURY ROAD

ROSELANDS, NSW

SYMBOLS

F.F.L.	FINISHED FLOOR LEVEL
F.G.L.	FINISHED GARAGE LEVEL
T.K.	TOP OF KERB
* 11.0	FINISHED LEVEL
SL	PIT SURFACE LEVEL
IL	INVERT LEVEL
20 R	ROOF CATCHMENT AREA (m^2)
20 I	IMPERVIOUS CATCHMENT AREA (m^2)
20 L	LANDSCAPED CATCHMENT AREA (m^2)
	STORMWATER DRAINAGE PIPE
RWT	DOWNPIPE TO RAINWATER TANK
	OVERFLOW PIPE FROM RAINWATER TANK
	ø50 PUMP LINE
	ø100 SUBSOIL PIPE
ES	EMERGENCY SPITTER PIPE
DP	DOWN PIPE
SP	SPREADER
IO	INSPECTION OPENING
VD	VERTICAL DROP
VR	VERTICAL RISER
	MASONRY RETAINING WALL
TW 81.20	TOP OF WALL LEVEL
	CONCRETE COVER JUNCTION PIT
FW	FLOOR WASTE 150ø
	GRATED INLET PIT
	WIDE GRATED DRAIN
	OVERLAND FLOW PATH
ES	EMERGENCY SPITER
RWH	RAIN WATER HEAD
CO	CLEAN OUT
OF	EMERGENCY OVERFLOW FLOOR WASTE 100ø
RWO	RAINWATER OUTLET 260ø SPS (ALLOW MINIMUM 1.0% FALL TO RWO)

DIAL 1100 BEFORE YOU DIG

NOTES

1. ALL LINES ARE TO BE MIN. 100ø UPVC @ MIN 1.0% GRADE UNLESS NOTED OTHERWISE.
2. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE & LEVEL ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS. ALL DESIGN LEVELS SHOWN ON PLAN SHALL BE VERIFIED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORK.
3. ALL PIPES TO HAVE MIN 200mm COVER IF LOCATED WITHIN PROPERTY.
4. ALL PITS IN DRIVEWAYS BE HEAVY DUTY GRATES. DIRECT SURFACE FLOW TO ALL GRATED SURFACE INLET PITS.
5. ALL WORK DO BE DONE IN ACCORDANCE WITH AS/NZ 3500.3.2:1998 AND COUNCIL SPECIFICATIONS.
6. LOCATION OF DOWNPIPES & FLOOR WASTES ARE INDICATIVE ONLY. DOWNPIPE & FLOOR WASTE SIZE, LOCATION & QUANTITY TO BE DETERMINED BY BUILDER & IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.
7. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, LANDSCAPE AND STRUCTURAL PLANS.
8. ANY DISCREPANCIES OR OMISSIONS SHALL BE REFERRED TO THE DESIGN ENGINEER FOR RESOLUTION.
9. ALL PITS OR GRATES IN TRAFFICABLE AREAS TO BE HEAVY DUTY.
10. ALL GUTTERS WILL BE FITTED WITH LEAF GUARDS AND SHOULD BE INSPECTED AND CLEANED TO ENSURE LEAF LITTER CANNOT ENTER THE DOWNPIPES
11. PROVIDE EMERGENCY OVERFLOW TO ALL PLANTER BOX AND BALCONIES.
12. ALL PITS WITH DEPTH MORE THAN 1M MUST HAVE IRON STEPS.
13. PROVIDE STORMWATER GRATE 200Wx200D AT THE BASE OF ALL MECHANICAL SHAFTS AND UNCOVERED STAIRS OR OPENINGS.
14. ENSURE ALL DRAINAGE WORKS ARE AWAY FROM TREE ROOTS

LEGEND

DP : 100ø DOWN PIPE

: STORMWATER PIPE @1% MIN. U.N.O.

REFER TO AS.3500 PART 3 TABLE 7.2

P1 : 100ø UPVC PIPE AT 1.0% MIN. GRADE U.N.O.
P2 : 150ø UPVC PIPE AT 1.0% MIN. GRADE U.N.O.
P3 : 225ø UPVC PIPE AT 0.5% MIN. GRADE U.N.O.
P4 : 300ø UPVC PIPE AT 0.4% MIN. GRADE U.N.O.
P5 : 375ø UPVC PIPE AT 0.4% MIN. GRADE U.N.O.
P6 : 450ø RCP PIPE AT 0.4% MIN. GRADE U.N.O.
PIPE CAST IN SLAB

SIZE OF MINIMUM INTERNAL DIMENSIONS FOR STORMWATER AND INLET PITS

DEPTH OF INVERT OF OUTLET	MINIMUM INTERNAL DIMENSIONS (mm)		
	RECTANGULAR		CIRCULAR
	WIDTH	LENGTH	DIAMETER
≤600	450	450	600
>600 ≤900	600	600	900
>900 ≤1200	600	900	1000
>1200	900	900	1000

*RL 22.20 NEW LEVEL

20.71 EXISTING LEVEL

NOTE: RETAINING WALLS & 'AGG' LINES
ALL RETAINING WALLS ARE TO BE WATERPROOFED AND CONSTRUCTED WITH ø100mm AGRICULTURAL LINES AT THE BASE AND CONNECTED TO THE NEAREST PIT IN THE COURTYARD.

DRAWING SCHEDULE

DRAWING No.	DRAWING TITLE
D00	COVER SHEET, LEGEND & DRAWING SCHEDULE
D01	EROSION AND SEDIMENT CONTROL PLAN & DETAILS
D02	LOWER BASEMENT STORMWATER DRAINAGE PLAN & DETAILS
D03	UPPER BASEMENT STORMWATER DRAINAGE PLAN
D04	GROUND FLOOR STORMWATER DRAINAGE PLAN
D05	FIRST FLOOR STORMWATER DRAINAGE PLAN
D06	OSD CATCHMENT PLAN
D10	STORMWATER DRAINAGE SECTIONS & DETAILS

A1 0 1 2 3 4 5 6 7 8 9 10

No	AMENDMENT	ENG	DRAFT	DATE
D	FOR APPROVAL	E.H.	M.D.	08.04.21
C	FOR APPROVAL	E.H.	M.D.	22.01.19
B	FOR D.A. APPROVAL	O.C.	M.L.	16.10.15
A	FOR D.A. APPROVAL	A.S.H.	E.H.	28.01.15

ARCHITECT
ADS PTY LTD
43/8 AVENUE OF THE AMERICAS, NEWINGTON, NSW 2127
(02) 9648 6663 (02) 9648 6664
e: md@ad-s.com.au

CLIENT
AHMAD CORPORATION

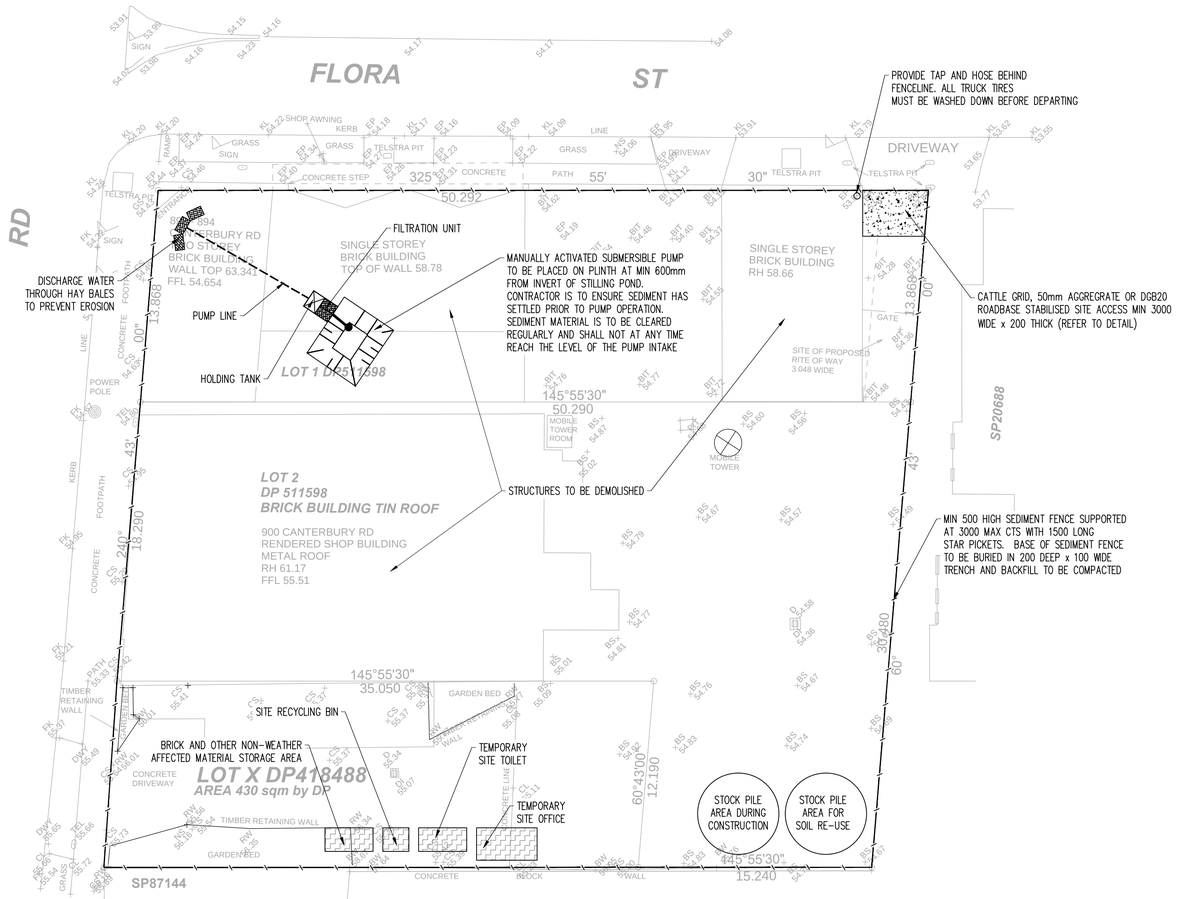
ENGINEERING THE FUTURE
CIVIL & STORMWATER ENGINEERING SERVICES PTY LTD
ABN: 27 644 422 506
Shop 1, 143-147 Parramatta Road, Concord, NSW 2137
P:(02) 8397 6500
E:info@esgconsult.com.au

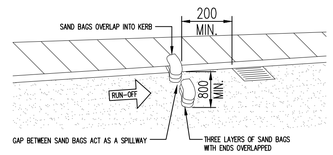
PROJECT
PROPOSED MIXED USE DEVELOPMENT 892, 898-902 & 906 CANTERBURY ROAD ROSELANDS NSW

SHEET SUBJECT
COVER SHEET, LEGEND AND DRAWING SCHEDULE

ARCH. REF:

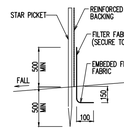
PROJECT	892, 898-902 & 906 CANTERBURY ROAD, ROSELANDS
DATE	JAN 15
DRAWN	E.H.
DESIGNED	A.S.H.
CHECKED	A.S.H
SCALE @ A1	N.T.S.
JOB No	140896
AUTHORISED	
DWG No	D00
REV	D



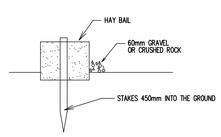


SANDBAG KERB INLET SEDIMENT TRAP (IF REQUIRED)

NTS



SILT FENCE DETAIL



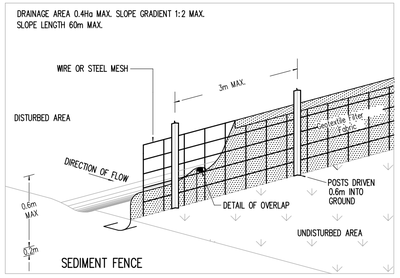
HAY BAIL DETAIL

TO BE USED AS REQUIRED

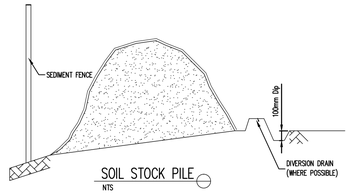
NTS

EROSION CONTROL NOTES

1. ALL EROSION & SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH 'MANAGING URBAN STORMWATER, 3rd EDITION' PRODUCED BY THE NSW DEPARTMENT OF HOUSING.
2. ALL EROSION AND SILTATION CONTROL DEVICES ARE TO BE PLACED PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION WORKS, AND ALL SILT TRAPS ARE TO HAVE DEPOSITED SILT REMOVED REGULARLY DURING CONSTRUCTION
3. ALL TREES ARE TO BE PRESERVED UNLESS INDICATED OTHERWISE ON THE ARCHITECT'S OR LANDSCAPE ARCHITECT'S DRAWINGS. EXISTING GRASS COVER SHALL BE MAINTAINED EXCEPT IN AREAS CLEARED FOR BUILDINGS, PAVEMENTS ETC.
4. INSTALL TEMPORARY SEDIMENT BARRIERS TO ALL INLET PITS LIKELY TO COLLECT SILT LADDEN WATER
5. NOT WITHSTANDING DETAILS SHOWN IT IS THE CONTRACTORS SOLE RESPONSIBILITY TO ENSURE THAT ALL SITE ACTIVITIES COMPLY WITH THE REQUIREMENTS OF THE CLEAN WATERS ACT.



SEDIMENT FENCE



SOIL STOCK PILE

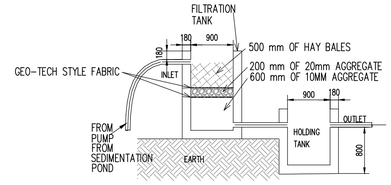
NTS

SYMBOLS

- EXISTING LEVELS (31.09TK)
- SILT FENCE
- WIRE MESH FENCE
- STABILISED SITE ACCESS
- Ø50 PUMP LINE

NOTES: SOIL & WATER MANAGEMENT

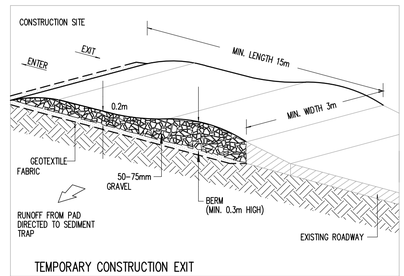
1. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE INSPECTED AND MAINTAINED DAILY BY SITE MANAGER.
2. MINIMISE DISTURBED AREAS.
3. ALL STOCKPILES TO BE CLEAR FROM DRAINS, GUTTERS AND FOOTPATHS.
4. DRAINAGE IS TO BE CONNECTED TO STORMWATER SYSTEM AS SOON AS POSSIBLE.
5. ROADS AND FOOTPATH TO BE SWEPT DAILY.
6. NO MATERIAL TO BE STORED ON FOOTPATH.



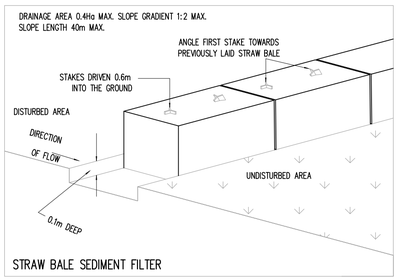
TYPICAL DETAIL OF FILTRATION UNIT (IF REQUIRED)

NTS

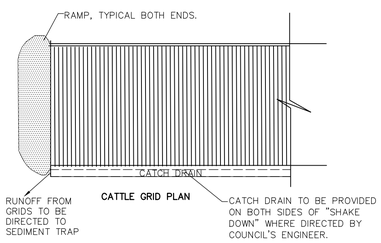
NOTE: HAY TO BE CHANGED EVERY DAY
GEO-TECH, SAND, AND BLUE METAL, TO BE CHANGED WEEKLY

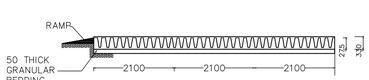


TEMPORARY CONSTRUCTION EXIT



STRAW BALE SEDIMENT FILTER





CATTLE GRID ALTERNATIVE

NTS

NOTES THIS DRAWING

1. ALL DOCUMENTS WILL BE SUBMITTED TO COUNCIL FOR APPROVAL.
2. ALL SEDIMENT CONTROL MEASURES ARE TO BE IN PLACE.
3. INSTALLATION OF SILT FENCING, SEDIMENTATION BARRIERS AROUND DRAINS.
3. FENCING IS TO BE 1.8m(min) HEIGHT, PLACED AROUND THE SITE UNTIL THE WORK COMPLETE.
4. THE HARDSTAND AREAS OR CATTLE GRIDS WILL BE PLACED AT THE SITE ENTRANCES AND EXITS. TO REMOVE THE BULK OF DIRT AND MUD THAT MAY ACCUMULATE ON TRUCK TYRES.
7. CONTRACTOR WILL CONDUCT REGULAR STREET SWEEPS ALONG THE ACCESS ROUTE TO ENSURE THE ROADS ADJACENT TO THE SITE ENTRANCES ARE KEPT CLEAN OF ANY DIRT AND DEBRIS.
8. REGULAR ENVIRONMENTAL INSPECTIONS WILL BE CARRIED OUT BY CONTRACTOR'S PERSONNEL TO ENSURE COMPLIANCE WITH THIS PLAN.

A1 0 1 2 3 4 5 6 7 8 9 10

No	AMENDMENT	ENG	DRAFT	DATE
C	FOR APPROVAL	E.H.	M.D.	22.01.19
B	FOR D.A. APPROVAL	O.C.	M.L.	16.10.15
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PROPOSED MIXED USE DEVELOPMENT
892, 898-902 & 906 CANTERBURY ROAD ROSELANDS NSW

SHEET SUBJECT
EROSION AND SEDIMENT CONTROL PLAN & DETAILS

ARCH. REF:

PROJECT	892, 898-902 & 906 CANTERBURY ROAD, ROSELANDS
DATE	JAN 15
DRAWN	E.H.
DESIGNED	A.S.H.
CHECKED	A.S.H
SCALE @ A1	1:200 U.N.O.
JOB No	140896
AUTHORISED	
DWG No	D01
REV	C

PUMP SPECIFICATIONS
STANDARD PUMP-OUT NOTES

THE PUMP-OUT SYSTEM IS DESIGNED TO WORK IN THE FOLLOWING MANNER –

1. THE PUMPS SHALL BE PROGRAMMED TO WORK ALTERNATELY SO AS TO ALLOW BOTH PUMPS TO HAVE EQUAL OPERATION LOAD & PUMP LIFE.
2. A LOW LEVEL 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.
3. A SECOND FLOAT SHALL BE PROVIDED AT A HIGHER LEVEL, APPROXIMATELY 300mm ABOVE THE MINIMUM WATER LEVEL, WHEREBY ONE OF THE PUMPS WILL OPERATE & DRAIN THE TANK TO THE LEVEL OF THE LOW LEVEL FLOAT.
4. A THIRD FLOAT SHALL BE PROVIDED AT A HIGH LEVEL, WHICH IS APPROXIMATELY THE ROOF LEVEL OF THE BELOW GROUND TANK. THIS FLOAT SHOULD START THE OTHER PUMP THAT IS NOT OPERATING & ACTIVATE THE ALARM.
5. AN ALARM SYSTEM SHALL BE PROVIDED WITH A FLASHING STROBE LIGHT & 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.

WARNING
PUMP OUT SYSTEM
FAILURE IN BASEMENT
WHEN LIGHT IS FLASHING
AND SIREN SOUNDING

BASEMENT PUMP OUT FAILURE WARNING SIGN

NOTE:
1– SIGN SHALL BE PLACED IN A CLEAR AND VISIBLE LOCATION WHERE VEHICLES ENTER THE BASEMENT.

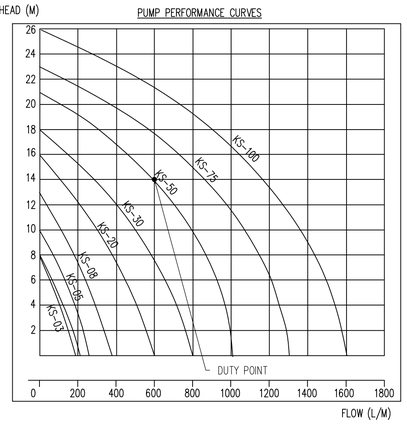
PUMP-OUT PIT CALCULATIONS

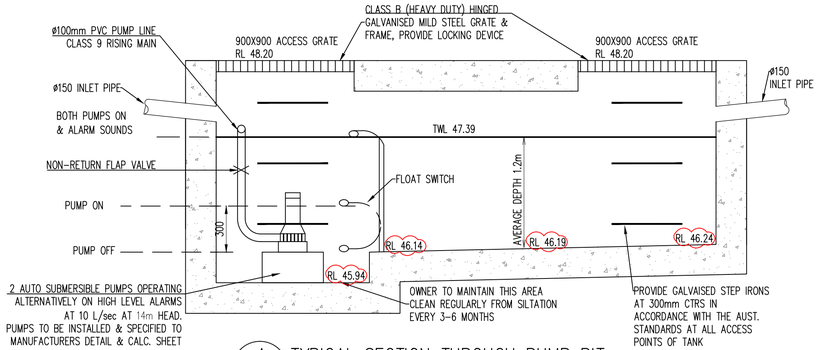
1-STORAGE VOLUME
AREA DRAINING TO PUMP-OUT PIT=115.13m²
RAINFALL INTENSITY FOR 100YR, 2HOURS STORM EVENT=55.7mm/hr
VOLUME REQUIRED=C*I*A*D=1*0.0557*115.13*2=12.83m³
VOLUME PROVIDED=6.5x3.4x1.2=26.52m³

2-PUMP-OUT RATE
AREA DRAINING TO PUMP-OUT PIT=115.13m²
RAINFALL INTENSITY FOR 100YR, 5MIN STORM EVENT=252mm/hr
PUMP-OUT RATE REQUIRED=C*I*A=1*0.252*115.13/3.6=8.06 L/S
PUMP-OUT RATE PROVIDED PER PUMP=10L/S

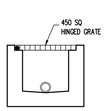
3-PUMPS SELECTION
TOTAL PUMP-OUT RATE PROVIDED=10L/S
HEAD=14m
PROVIDE TWO AUTO SUBMERSIBLE PUMPS KS-75
OPERATING ALTERNATIVELY AND PUMPING 10L/S

PUMP PERFORMANCE CURVES

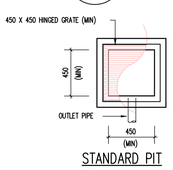




A / D02 TYPICAL SECTION THROUGH PUMP PIT
SCALE NTS



TYPICAL PIT SECTION
N.T.S.

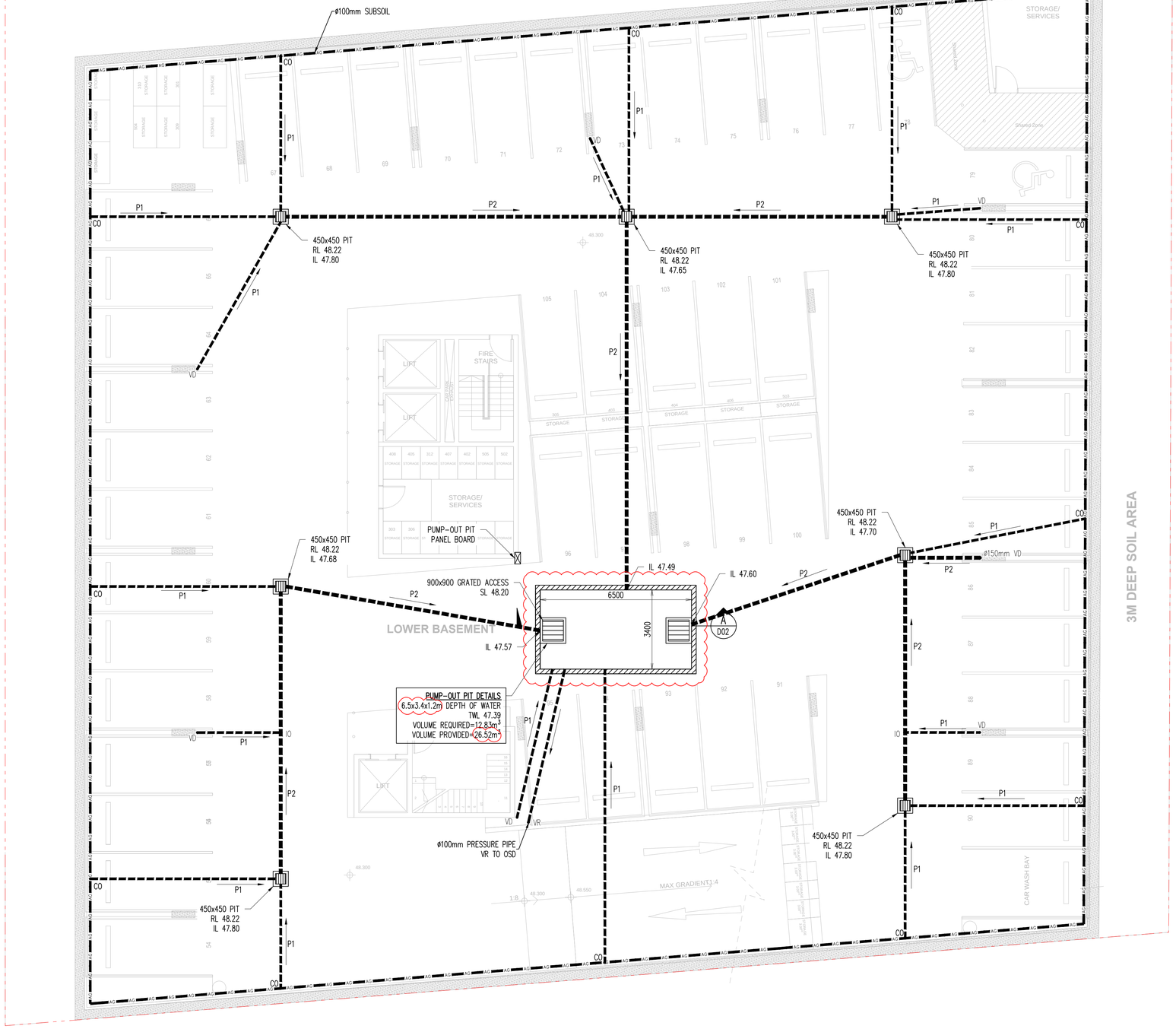


STANDARD PIT
N.T.S.

LEGEND
DP : 100ø DOWN PIPE
: STORMWATER PIPE @1% MIN. U.N.O.
P1 : 100ø UPVC PIPE AT 1% MIN. GRADE
P2 : 150ø UPVC PIPE AT 1% MIN. GRADE

DIAL 1100 BEFORE YOU DIG

Type	Output		Outlet		Rated Head Capacity		Maximum Head	Maximum Capacity	Weigh	Dimension		
	HP	kW	mm	Inch	M	LPM	M	LPM	Kg	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



No	AMENDMENT	ENG	DRAFT	DATE	No	AMENDMENT	ENG	DRAFT	DATE	No	AMENDMENT	ENG	DRAFT	DATE
F	FOR APPROVAL	E.H.	M.D.	08.04.21										
E	FOR APPROVAL	E.H.	M.D.	22.01.19										
D	FOR D.A. APPROVAL	O.C.	S.N.	04.07.16										
C	FOR D.A. APPROVAL	O.C.	M.L.	16.10.15										
B	FOR D.A. APPROVAL	A.S.H.	E.H.	03.02.15	H	FOR APPROVAL	E.H.	Y.K.K.	12.01.22					
A	FOR D.A. APPROVAL	A.S.H.	E.H.	28.01.15	G	FOR APPROVAL	E.H.	D.B.F.	13.05.21					

ARCHITECT
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PROJECT
PROPOSED MIXED USE DEVELOPMENT
892, 898-902 & 906 CANTERBURY ROAD ROSELANDS NSW

SHEET SUBJECT
LOWER BASEMENT STORMWATER PLAN & DETAILS

ARCH. REF:

PROJECT	892, 898-902 & 906 CANTERBURY ROAD, ROSELANDS		
DATE	DRAWN	DESIGNED	CHECKED
JAN 15	E.H.	A.S.H.	A.S.H
SCALE @ A1		JOB No	
1:100 U.N.O.		140896	
AUTHORISED		DWG No	REV
		D02	H

LEGEND

REFER TO AS.3500 PART 3 TABLE 7.2

P1 : 100ø UPVC PIPE AT 1.0% MIN. GRADE
P2 : 150ø UPVC PIPE AT 1.0% MIN. GRADE
P3 : 225ø UPVC PIPE AT 0.5% MIN. GRADE
P4 : 300ø UPVC PIPE AT 0.4% MIN. GRADE
P5 : 375ø UPVC PIPE AT 0.4% MIN. GRADE

DIAL 1100 BEFORE YOU DIG

NOTES

1. ALL LINES ARE TO BE MIN. 100ø UPVC @ MIN 1.0% GRADE UNLESS NOTED OTHERWISE.
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3. ALL PIPES TO HAVE MIN 200mm COVER IF LOCATED WITHIN PROPERTY.
4. ALL PITS IN DRIVEWAYS BE HEAVY DUTY GRATES. DIRECT SURFACE FLOW TO ALL GRATED SURFACE INLET PITS.
5. ALL WORK DO BE DONE IN ACCORDANCE WITH AS/NZ 3500.3.2:2015 AND COUNCIL SPECIFICATIONS.
6. LOCATION OF DOWNPIPES & FLOOR WASTES ARE INDICATIVE ONLY. DOWNPIPE & FLOOR WASTE SIZE, LOCATION & QUANTITY TO BE DETERMINED BY BUILDER & IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.
7. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, LANDSCAPE AND STRUCTURAL PLANS.
8. ANY DISCREPANCIES OR OMISSIONS SHALL BE REFERRED TO THE DESIGN ENGINEER FOR RESOLUTION.
9. ALL PITS OR GRATES IN TRAFFICABLE AREAS TO BE HEAVY DUTY.
10. ALL GUTTERS WILL BE FITTED WITH LEAF GUARDS AND SHOULD BE INSPECTED AND CLEANED TO ENSURE LEAF LITTER CANNOT ENTER THE DOWNPIPES

SYMBOLS

RL	PIT SURFACE LEVEL
IL	INVERT LEVEL
TK	TOP OF KERB
SW	STORMWATER DRAINAGE PIPE
RWT	DOWNPIPE TO RAINWATER TANK
SW	OVERFLOW PIPE FROM RAINWATER TANK
AG	ø100 SUBSOIL PIPE
FW	FLOOR WASTE 300X300 (ALLOW MINIMUM 1.0% FALL TO FW)
FW	FLOOR WASTE 150ø
RWO	RAINWATER OUTLET 260ø SPS (ALLOW MINIMUM 1.0% FALL TO RWO)
DP	DOWN PIPE
CO	CLEAN OUT
IO	INSPECTION OPENING
VD	VERTICAL DROP
VR	VERTICAL RISER
	CONCRETE COVER JUNCTION PIT
	GRATED INLET PIT
	WIDE GRATED DRAIN
	OVERLAND FLOW PATH

A1

No	AMENDMENT	ENG	DRAFT	DATE
F	FOR APPROVAL	E.H.	M.D.	08.04.21
E	FOR APPROVAL	E.H.	M.D.	22.01.19
D	FOR D.A. APPROVAL	O.C.	S.N.	04.07.16
C	FOR D.A. APPROVAL	O.C.	M.L.	16.10.15
B	FOR D.A. APPROVAL	A.S.H.	E.H.	03.02.15
A	FOR D.A. APPROVAL	A.S.H.	E.H.	28.01.15
H	FOR APPROVAL	E.H.	Y.K.K.	12.01.22
G	FOR APPROVAL	E.H.	D.B.F.	13.05.21

ARCHITECT
ADS PTY LTD
#3/8 AVENUE OF THE AMERICAS,
NEWINGTON, NSW 2127
(02) 9648 6663 (02) 9648 6664
e: mc@ad-s.com.au

CLIENT
AHMAD CORPORATION

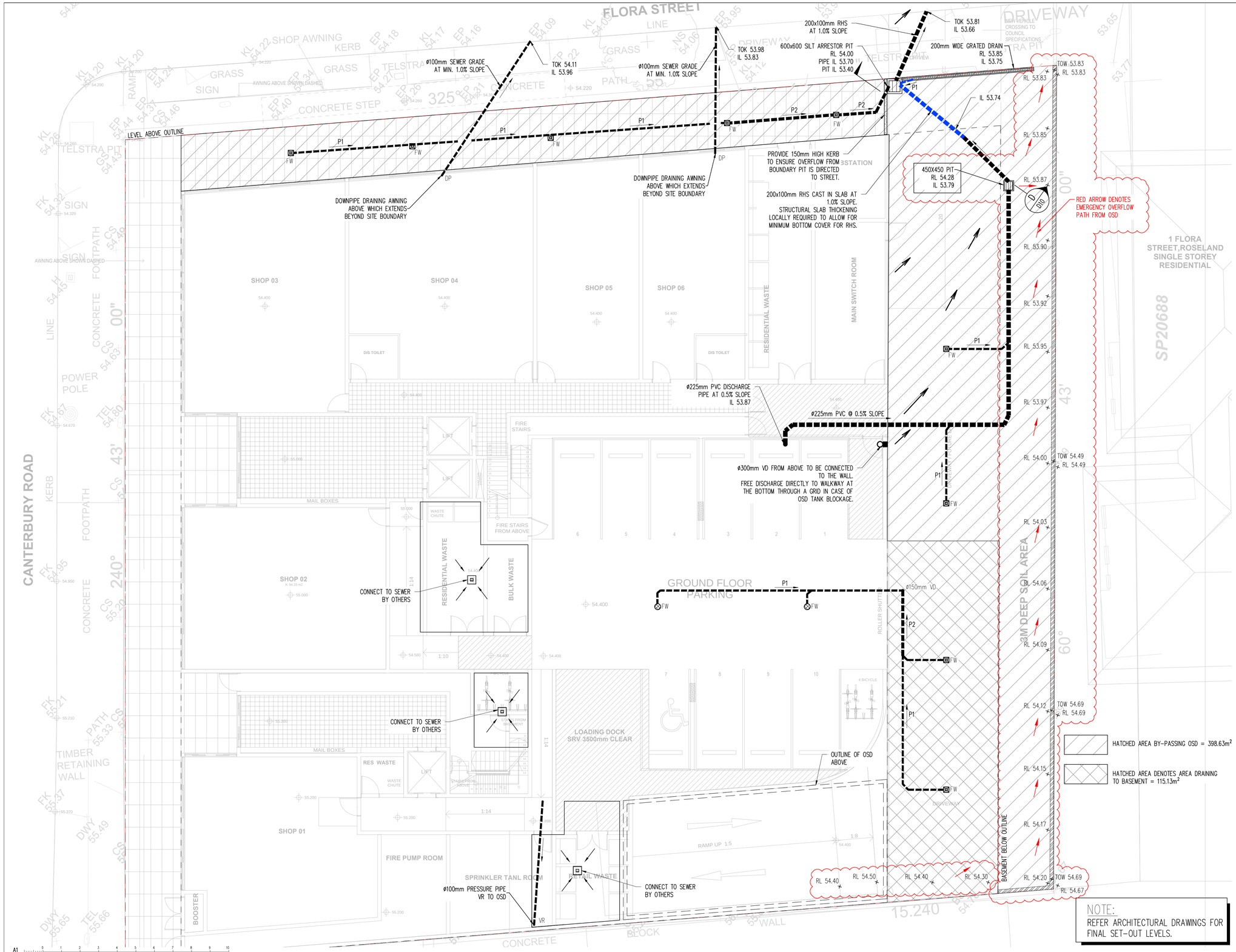
ENGINEERING THE FUTURE
CIVIL & STORMWATER ENGINEERING SERVICES PTY LTD
ABN: 27 644 422 506
Shop 1, 143-147 Parramatta Road, Concord, NSW 2137
P:(02) 8397 6500
E:info@esgconsult.com.au

PROJECT
PROPOSED MIXED USE DEVELOPMENT
892, 898-902 & 906 CANTERBURY ROAD ROSELANDS NSW

SHEET SUBJECT
UPPER BASEMENT STORMWATER DRAINAGE PLAN

ARCH. REF:

PROJECT 892, 898-902 & 906 CANTERBURY ROAD, ROSELANDS
DATE JAN 15 | DRAWN E.H. | DESIGNED A.S.H. | CHECKED A.S.H
SCALE @ A1 1:100 U.N.O. | JOB No 140896
AUTHORISED | DWG No D03 | REV H



LEGEND

REFER TO AS.3500 PART 3 TABLE 7.2

P1 : 100ø UPVC PIPE AT 1.0% MIN. GRADE
P2 : 150ø UPVC PIPE AT 1.0% MIN. GRADE
P3 : 225ø UPVC PIPE AT 0.5% MIN. GRADE
P4 : 300ø UPVC PIPE AT 0.4% MIN. GRADE
P5 : 375ø UPVC PIPE AT 0.4% MIN. GRADE

DIAL 1100 BEFORE YOU DIG

NOTES

1. ALL LINES ARE TO BE MIN. 100ø UPVC @ MIN 1.0% GRADE UNLESS NOTED OTHERWISE.
2. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE & LEVEL ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS. ALL DESIGN LEVELS SHOWN ON PLAN SHALL BE VERIFIED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORK.
3. ALL PIPES TO HAVE MIN 200mm COVER IF LOCATED WITHIN PROPERTY.
4. ALL PITS IN DRIVEWAYS BE HEAVY DUTY GRATES. DIRECT SURFACE FLOW TO ALL GRATED SURFACE INLET PITS.
5. ALL WORK DO BE DONE IN ACCORDANCE WITH AS/NZ 3500.3.2:2015 AND COUNCIL SPECIFICATIONS.
6. LOCATION OF DOWNPIPES & FLOOR WASTES ARE INDICATIVE ONLY. DOWNPIPE & FLOOR WASTE SIZE, LOCATION & QUANTITY TO BE DETERMINED BY BUILDER & IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.
7. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, LANDSCAPE AND STRUCTURAL PLANS.
8. ANY DISCREPANCIES OR OMISSIONS SHALL BE REFERRED TO THE DESIGN ENGINEER FOR RESOLUTION.
9. ALL PITS OR GRATES IN TRAFFICABLE AREAS TO BE HEAVY DUTY.
10. ALL GUTTERS WILL BE FITTED WITH LEAF GUARDS AND SHOULD BE INSPECTED AND CLEANED TO ENSURE LEAF LITTER CANNOT ENTER THE DOWNPIPES

SYMBOLS

RL	PIT SURFACE LEVEL
IL	INVERT LEVEL
TK	TOP OF KERB
SW	STORMWATER DRAINAGE PIPE
RWT	DOWNPIPE TO RAINWATER TANK
SW	OVERFLOW PIPE FROM RAINWATER TANK
AG	ø100 SUBSOIL PIPE
FW	FLOOR WASTE 300X300 (ALLOW MINIMUM 1.0% FALL TO FW)
FW	FLOOR WASTE 150ø
RWO	RAINWATER OUTLET 260ø SPS (ALLOW MINIMUM 1.0% FALL TO RWO)
DP	DOWN PIPE
CO	CLEAN OUT
IO	INSPECTION OPENING
VD	VERTICAL DROP
VR	VERTICAL RISER
	CONCRETE COVER JUNCTION PIT
	GRATED INLET PIT
	WIDE GRATED DRAIN
	OVERLAND FLOW PATH
	MASONRY RETAINING WALL TO STRUCTURAL ENGINEER'S DETAILS

NOTE:
IT IS CONTRACTOR'S RESPONSIBILITY TO ENSURE MINIMUM PONDING IS ACHIEVED OVER THE FLOOR WASTES BY GRADING CATCHMENTS' SURFACES AT MINIMUM 1.0% FALL.

NOTES:
1– CONTRACTOR IS TO PROVIDE OVERFLOW OUTLETS & EMERGENCY OVERFLOW SPITTERS TO ALL ENTRAPPED AREAS.
2– DP/VD ARE ø100mm PIPES U.N.O.
3– ALL TRANSFERRING PIPES AREA SUSPENDED U.N.O.
4– BALCONIES PIPES ARE ø65mm CAST IN SLAB.

NOTE:
REFER ARCHITECTURAL DRAWINGS FOR FINAL SET-OUT LEVELS.

No	AMENDMENT	ENG	DRAFT	DATE
F	FOR APPROVAL	E.H.	M.D.	08.04.21
E	FOR APPROVAL	E.H.	M.D.	22.01.19
D	FOR D.A. APPROVAL	O.C.	S.N.	04.07.16
C	FOR D.A. APPROVAL	O.C.	M.L.	16.10.15
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G	FOR APPROVAL	E.H.	D.B.F.	13.05.21

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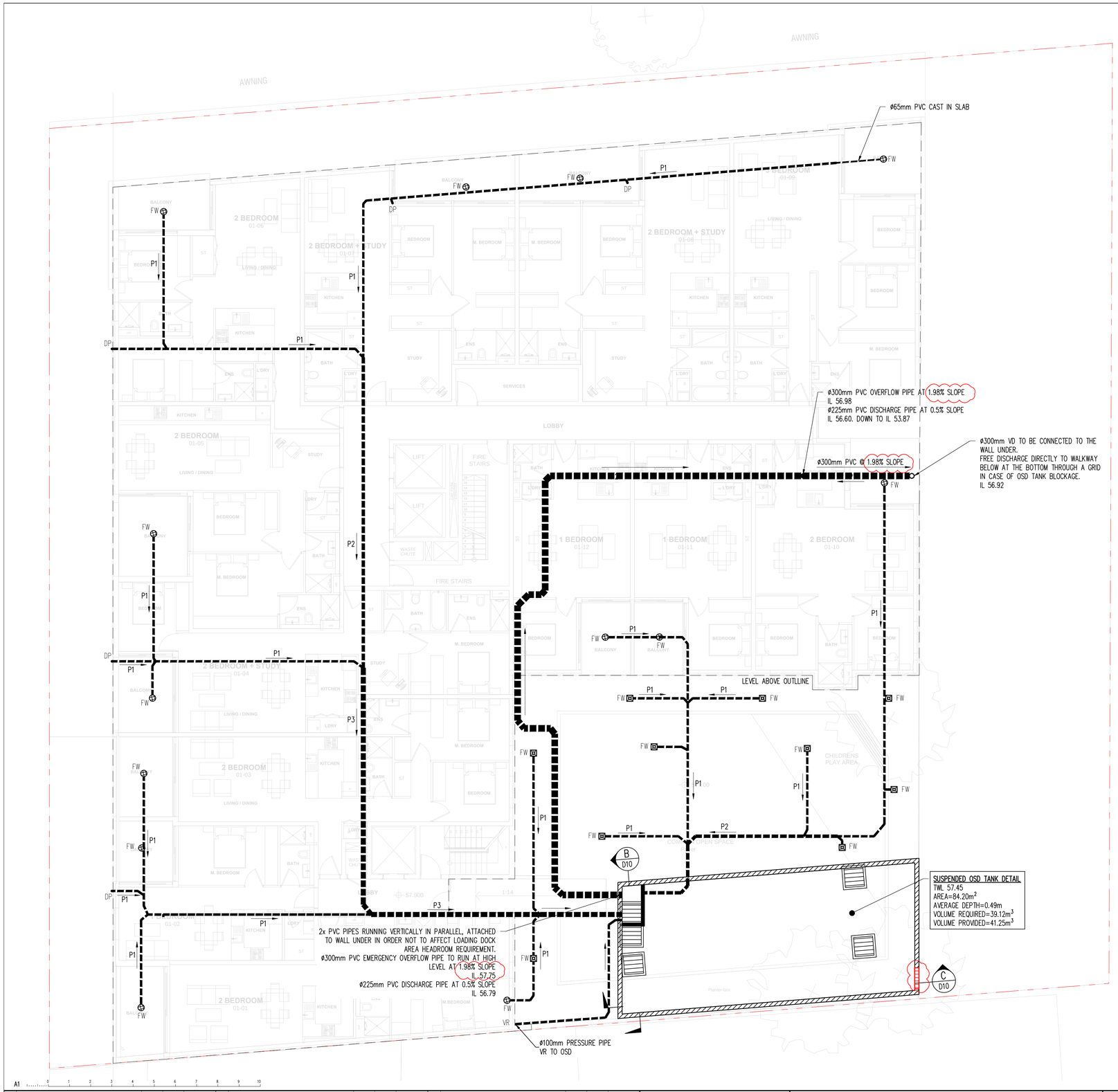
ENGINEERING THE FUTURE

PROJECT
PROPOSED MIXED USE DEVELOPMENT
892, 898–902 & 906 CANTERBURY ROAD ROSELANDS NSW

SHEET SUBJECT
GROUND FLOOR STORMWATER DRAINAGE PLAN

ARCH. REF:

PROJECT	892, 898–902 & 906 CANTERBURY ROAD, ROSELANDS		
DATE	DRAWN	DESIGNED	CHECKED
JAN 15	E.H.	A.S.H.	A.S.H
SCALE @ A1		JOB No	
1:100 U.N.O.		140896	
AUTHORISED		DWG No	REV
		D04	H



A1 0 1 2 3 4 5 6 7 8 9 10

LEGEND

REFER TO AS.3500 PART 3 TABLE 7.2
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DIAL 1100 BEFORE YOU DIG

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NOTE:
REFER ARCHITECTURAL DRAWINGS FOR FINAL SET-OUT LEVELS.

NOTE:
ALL LINEAR GRATED DRAINS TO BE MIN. 100mm DEEP.

NOTE:
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NOTES:
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4- BALCONIES PIPES ARE ø65mm CAST IN SLAB.

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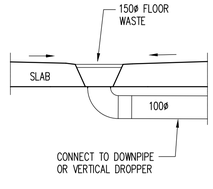
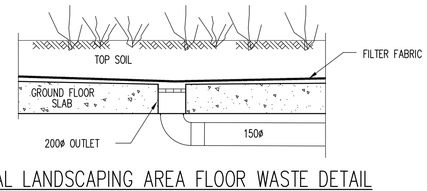
	CONCRETE COVER JUNCTION PIT
	GRATED INLET PIT
	WIDE GRATED DRAIN
	OVERLAND FLOW PATH



TYPICAL FLOOR WASTE 'FW' DETAIL
SCALE 1:20



TYPICAL LANDSCAPING AREA FLOOR WASTE DETAIL
SCALE 1:20

No	AMENDMENT	ENG	DRAFT	DATE
F	FOR APPROVAL	E.H.	M.D.	08.04.21
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C	FOR D.A. APPROVAL	A.S.H.	E.H.	03.02.15
B	FOR D.A. APPROVAL	A.S.H.	E.H.	30.01.15
A	FOR D.A. APPROVAL	A.S.H.	E.H.	28.01.15
I	FOR APPROVAL	E.H.	Y.K.K.	12.01.22
H	FOR APPROVAL	E.H.	D.B.F.	24.05.21
G	FOR APPROVAL	E.H.	D.B.F.	13.05.21

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PROJECT
PROPOSED MIXED USE DEVELOPMENT
892, 898-902 & 906 CANTERBURY ROAD ROSELANDS NSW

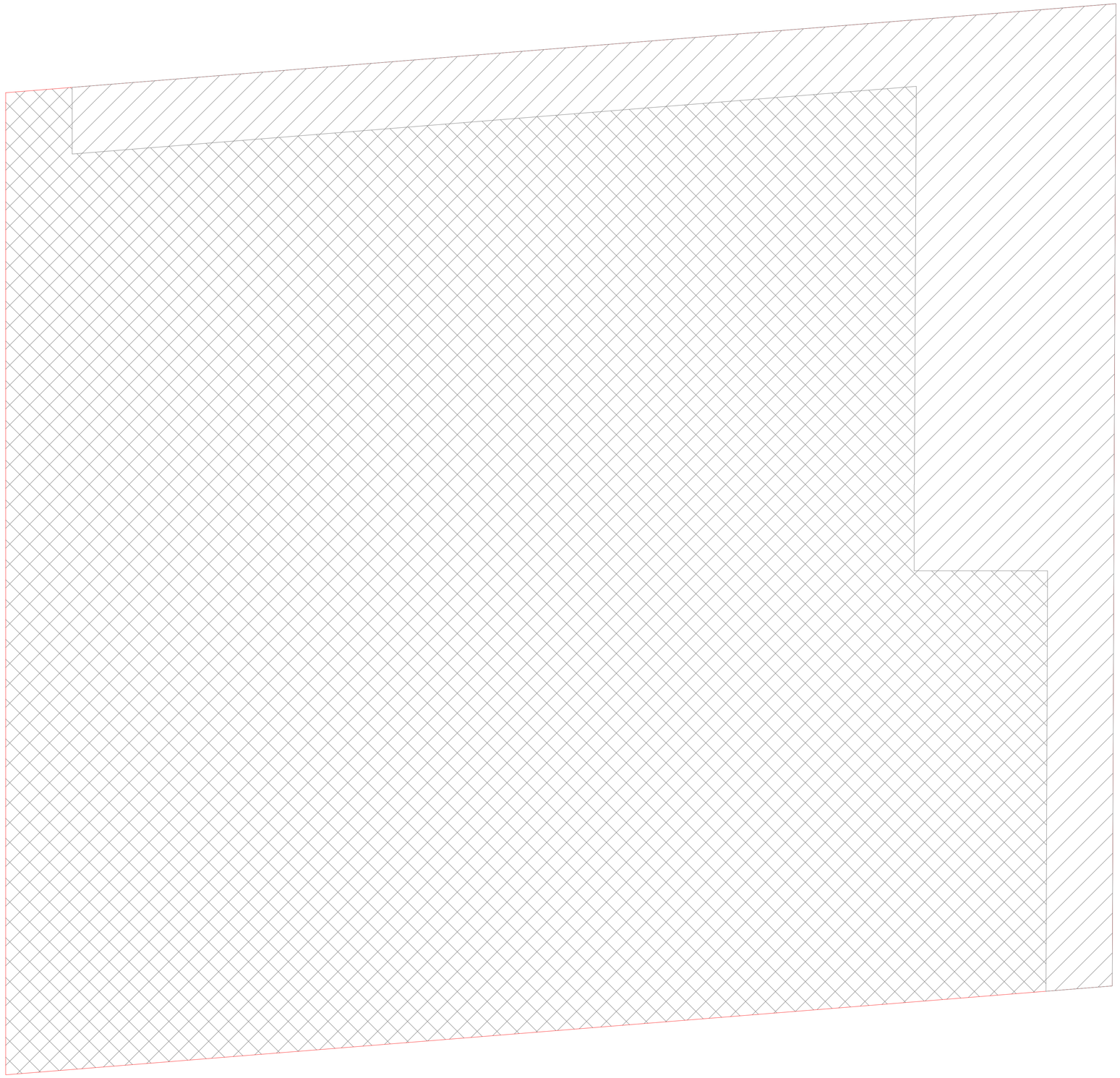
SHEET SUBJECT
FIRST FLOOR STORMWATER DRAINAGE PLAN

ARCH. REF:

PROJECT 892, 898-902 & 906 CANTERBURY ROAD, ROSELANDS

DATE	DRAWN	DESIGNED	CHECKED
JAN 15	E.H.	A.S.H.	A.S.H

SCALE @ A1: 1:100 U.N.O.
JOB No: 140896
AUTHORISED:
DWG No: D05
REV: I



HATCHED AREA BY-PASSING OSD = 398.63m^2
(66.70% IMPERVIOUS)

HATCHED AREA DENOTES AREA DRAINING
TO OSD = 1820.43m^2 (100% IMPERVIOUS)

A1 0 1 2 3 4 5 6 7 8 9 10

No	AMENDMENT	ENG	DRAFT	DATE
B	FOR APPROVAL	E.H.	M.D.	08.04.21
A	FOR APPROVAL	E.H.	M.D.	22.01.19

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ADS PTY LTD
13/8 AVENUE OF THE AMERICAS,
NEWINGTON, NSW 2127
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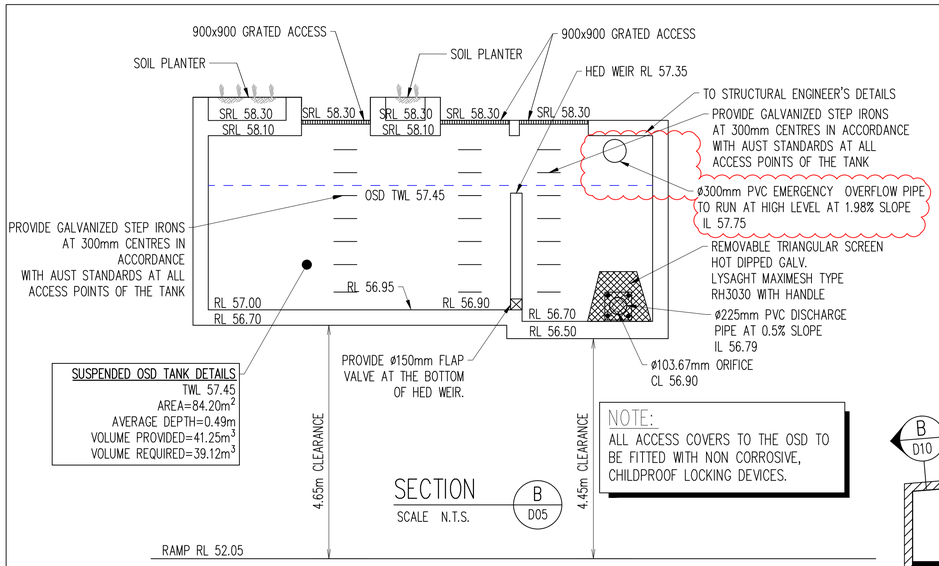
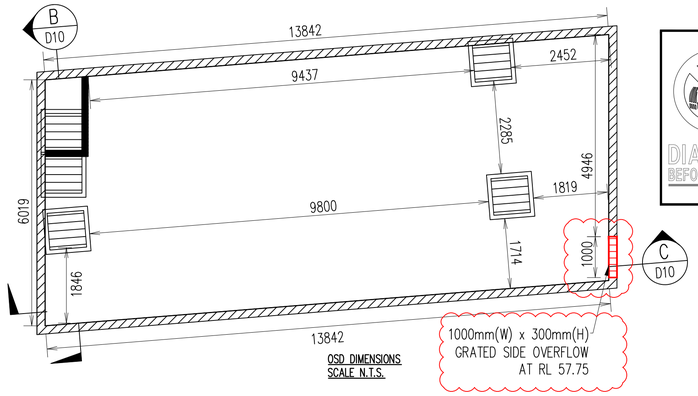
PROJECT
PROPOSED MIXED USE DEVELOPMENT
892, 898-902 & 906 CANTERBURY ROAD ROSELANDS NSW

SHEET SUBJECT
OSD CATCHMENT PLAN

ARCH. REF:

PROJECT 892, 898-902 & 906 CANTERBURY ROAD, ROSELANDS			
DATE JAN 15	DRAWN E.H.	DESIGNED A.S.H.	CHECKED A.S.H
SCALE @ A1 1:100		JOB No 140896	
AUTHORISED		DWG No D06	REV B

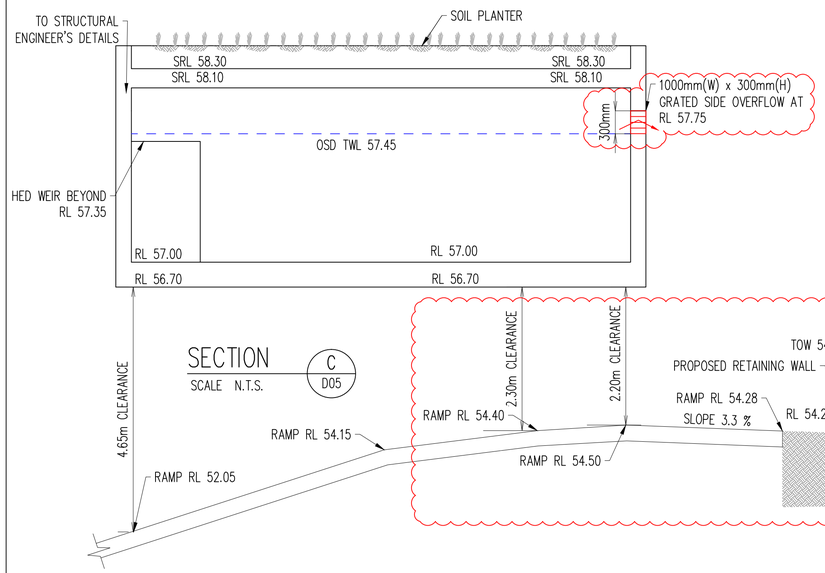


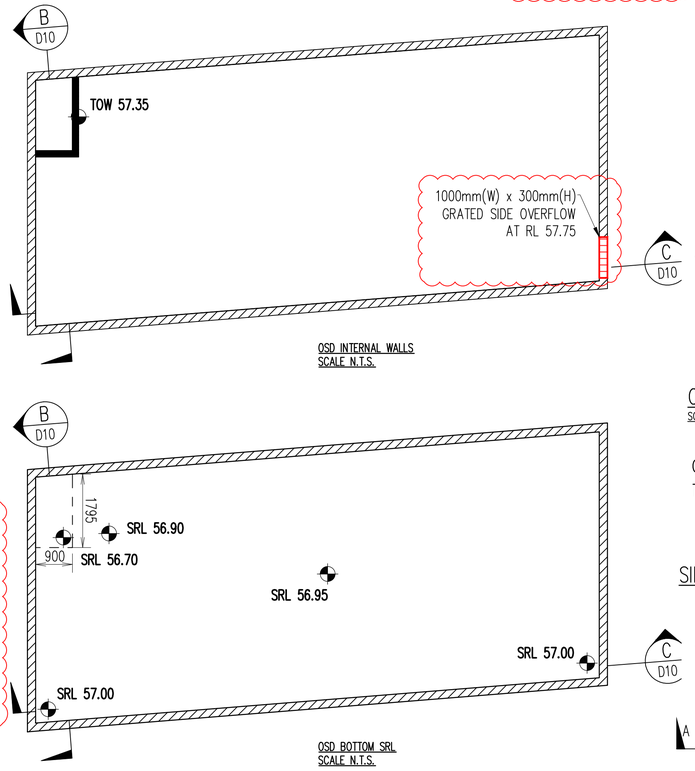


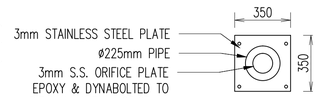
DIAL 1100 BEFORE YOU DIG

Stormwater Drainage System Maintenance Schedule
140896

Maintenance Action	Frequency	Responsibility	Procedure
General			
Inspect roof drainage system of building and remove any debris/sludge	Six Monthly	Maintenance Contractor	Remove any leaves or debris and sludge from gutters of building and flush downpipes of building to remove any blockages. Pits downstream of downpipes to be cleaned of flushed debris.
Inspect pits and trench drains on site and remove debris/litter/sludge	Monthly or following Rain Period	Maintenance Contractor	Remove grate. Remove any debris/litter/sludge from within pits.
Inspect site for litter and floatable debris and remove	Fortnightly	Maintenance Contractor	Remove litter from site and sweep all driveway and pathways in order to remove leaves or sediments that may enter into the drainage system.
Basement Pump out			
Inspect and clean flap valve,	Six Monthly	Owner/Mainten ance Contractor	Remove grate and check flap valve and pipe for blockages and clean. Check hinges for rust and test operation by moving flap to full extent.
Check hinge operation.			
Check attachment of flap valve to wall pit.	Annually	Maintenance Contractor	Remove grate and ensure valve fixings are secure.
Check flap valve seal.	Six Monthly	Maintenance Contractor	Remove grate and fill pit with water, ensure flap seals against side of pit with minimal leakage.
Inspect walls for cracking or spalling.	Annually	Maintenance Contractor	Remove grate to inspect internal walls, remove vegetation to inspect external wall, repair as required.
Inspect sump and clean.	Six Monthly	Owner	Remove grate and clean sediment/sludge from sump.
Inspect grate for damage or blockage.	Six Monthly	Owner	Check both sides of grate for corrosion (particularly welds and corners); also check for damage and blockages.
Inspect outlet pipe and remove blockages	Six Monthly	Maintenance Contractor	Remove grate and flush outlet pipe to ensure it drains freely. Check for debris on upstream side of return line.
Outlets			
Inspect & remove any blockage of orifices	Six monthly	Owner	Remove grate & screen to inspect orifice. See plan for location of outlets
Check attachment of orifice plates to wall of chamber and/or pit (gaps less than 5 mm)	Annually	Maintenance Contractor	Remove grate and screen. Ensure plates are mounted securely, tighten fixings if required. Seal gaps as required.
Check orifice diameters are correct and retain sharp edges	Five yearly	Maintenance Contractor	Compare diameter to design (see Work-as-Executed) and ensure edge is not pitted or damaged.
Inspect screen and clean	Six monthly	Owner	Remove grate(s) and screens if required to clean them.
Check attachment of screens to wall of chamber or pit	Annually	Maintenance Contractor	Remove grate(s) and screen(s). Ensure screen fixings are secure. Repair as required.
Check screen(s) for corrosion	Annually	Maintenance Contractor	Remove grate(s) and examine screen(s) for rust or corrosion, especially at corners or welds.
Inspect walls (internal and external, if appropriate) for cracks or spalling	Annually	Maintenance Contractor	Remove grate(s) to inspect internal walls. Repair as required. Clear vegetation from external walls if necessary and repair as required.
Inspect outlet sumps & remove any sediment/sludge	Six monthly	Owner	Remove grate(s) and screen(s). Remove sediment/sludge build-up and check orifices are clear.
Inspect grate(s) for damage or blockage	Six monthly	Owner	Check both sides of a grate for corrosion, (especially corners and welds) damage or blockage.
Inspect outlet pipe & remove any blockage	Six monthly	Maintenance Contractor	Remove grate(s) and screen(s). Ventilate underground storage if present. Check orifices and remove any blockages in outlet pipe. Flush outlet pipe to confirm it drains freely. Check for sludge/debris on upstream side of return line.
Check step irons for corrosion	Annually	Maintenance	Remove grate. Examine step irons and repair any corrosion or damage
Check fixing of step irons is secure	Six monthly	Maintenance Contractor	Remove grate(s) and ensure fixings are secure prior to placing weight on step iron.
Storage			
Inspect storage & remove any sediment/sludge in pit	Six monthly	Owner	Remove grate(s) and screen(s). Remove sediment/sludge build-up.
Inspect internal walls of storage (and external, if appropriate) for cracks or spalling	Annually	Maintenance Contractor	Remove grate(s) to inspect internal walls. Repair as required. Clear vegetation from external walls if necessary and repair as required.
Inspect & remove any debris/litter/mulch etc blocking grates	Six monthly	Owner	Remove blockages from grate(s) and check if storage is blocked.
Inspect areas draining to the storage(s) & remove debris/mulch/litter etc likely to block screens/grates	Six monthly	Owner	Remove debris and floatable material likely to be carried to grates.
Compare storage volume to volume approved. (Rectify if loss > 5%)	Annually	Maintenance Contractor	Compare actual storage available with Work-as Executed plans. If volume loss is greater than 5%, arrange for reconstruction to replace the volume lost. Council to be notified of the proposal.
Inspect storages for subsidence near pits	Annually	Maintenance	Check along drainage lines and at pits for subsidence likely to indicate leakages.



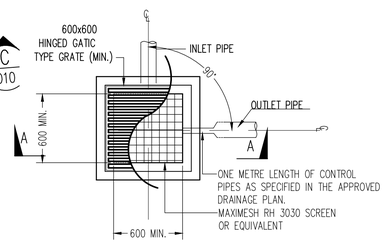




ORIFICE & ORIFICE PLATE DETAIL
SCALE N.T.S.

CONTRACTOR IS TO PROVIDE OVERFLOW OUTLETS TO ALL BALCONIES AND OTHER ENTRAPPED AREAS

SILT ARRESTOR PIT DETAILS & NOTES



PLAN
SCALE 1:20

CANTERBURY COUNCIL

Area (m^2) = 1820.43
C (10yrs) ARAR 1987 p307 = 0.90

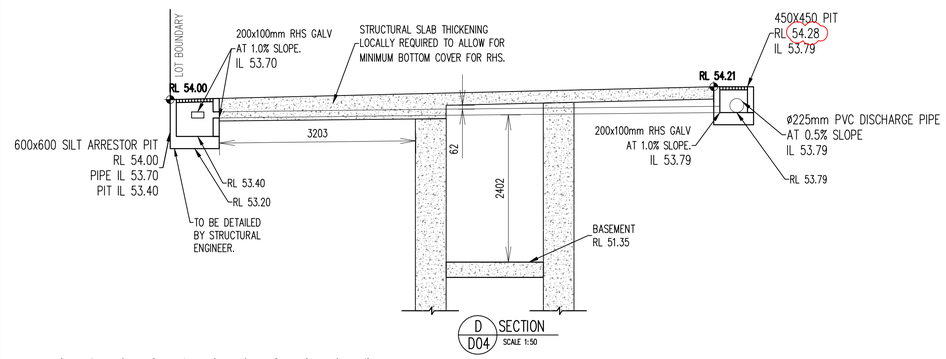
Storm Duration T (min)	I 10 yrs (mm/hr)	V of Hydrograph (m^3)	Inflow Peak discharge (L/s)	Required Storage (m^3)
5	173	23.62	78.73	18.81
6	163	26.71	74.18	20.93
7	155	29.63	70.54	22.89
8	147	32.11	66.90	24.41
9	141	34.65	64.17	25.99
10	135	36.86	61.44	27.24
11	130	39.05	59.16	28.46
12	126	41.29	57.34	29.74
13	121	42.95	55.07	30.44
14	118	45.11	53.70	31.64
15	114	46.69	51.88	32.26
16	111	48.50	50.52	33.10
17	108	50.13	49.15	33.77
18	105	51.61	47.79	34.29
20	100	54.61	45.51	35.36
25	90	61.44	40.96	37.38
30	83	67.99	37.77	39.12
35	76	72.64	34.59	38.95
40	71	77.55	32.31	39.05
45	67	82.33	30.49	39.02
50	63	86.02	28.67	37.90
55	60	90.11	27.31	37.18
60	57	93.39	25.94	35.64

MIN Storage m^3 (Below Ground)=	**39.12**	
MIN Storage m3 (Above Ground) =	**46.95**	Not Applicable
Storage Provided m^3=	41.25	
Area m^2=	84.20	
Av depth water=	0.49	
Head in 1:10 (m) =	0.55	
PSD (L/s) =	**16.04**	(150/10,000 x Area)
Diameter (mm) =	103.67	

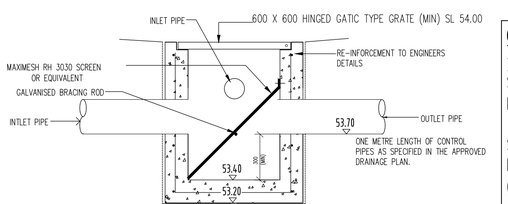
OSD DISCHARGE CALCULATIONS

1-OSD DISCHARGE
SITE AREA =2,219.06m^2
PSD=150L/s/Ha=150x0.2219=33.28L/s

SITE BYPASS=398.63m^2
BYPASS DISCHARGE
(10YR)=CxIxA/3600=0.9x173x398.63/3600=17.24L/s
OSD DISCHARGE=PSD-BYPASS DISCHARGE=33.28-17.24=16.04L/s



CONFINED SPACE WARNING SIGN



SILT ARRESTOR PIT DETAILS
NTS

A1 0 1 2 3 4 5 6 7 8 9 10

No	AMENDMENT	ENG	DRAFT	DATE
F	FOR APPROVAL	E.H.	M.D.	08.04.21
E	FOR APPROVAL	E.H.	M.D.	22.01.19
D	FOR D.A. APPROVAL	O.C.	M.L.	16.10.15
C	FOR D.A. APPROVAL	A.S.H.	E.H.	03.02.15
B	FOR D.A. APPROVAL	A.S.H.	E.H.	30.01.15
A	FOR D.A. APPROVAL	A.S.H.	E.H.	28.01.15
I	FOR APPROVAL	E.H.	Y.K.K.	12.01.22
H	FOR APPROVAL	E.H.	D.B.F.	24.05.21
G	FOR APPROVAL	E.H.	D.B.F.	13.05.21

ARCHITECT
ADS PTY LTD
45/8 AVENUE OF THE AMERICAS, NEWINGTON, NSW 2127
(02) 9648 6663 (02) 9648 6664
e: md@ad-s.com.au

CLIENT
AHMAD CORPORATION

ENGINEERING THE FUTURE
CIVIL & STORMWATER ENGINEERING SERVICES PTY LTD
ABN: 27 644 422 506
Shop 1, 143-147 Parramatta Road, Concord, NSW 2137
P:(02) 8397 6500
E:info@esgconsult.com.au

PROJECT
PROPOSED MIXED USE DEVELOPMENT
892, 898-902 & 906 CANTERBURY ROAD ROSELANDS NSW

SHEET SUBJECT
STORMWATER DRAINAGE SECTIONS & DETAILS

ARCH. REF:

PROJECT	892, 898-902 & 906 CANTERBURY ROAD, ROSELANDS		
DATE	DRAWN	DESIGNED	CHECKED
JAN 15	E.H.	A.S.H.	A.S.H
SCALE @ A1		JOB No	
AS SHOWN		140896	
AUTHORISED		DWG No	REV.
		D10	I