

# STORMWATER MANAGEMENT PLAN

78-80A BENAROON ROAD, LAKEMBA, NSW 2195

## 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.
- G2 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.
- G3 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.
- G4 BENCHMARKS HAVE BEEN ESTABLISHED WHERE INDICATED IN 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.
- G5 SETTING OUT DIMENSIONS AND LEVELS SHOWN ON THE DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR.
- G6 ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE RELEVANT AUSTRALIAN CODES AND THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES.
- G7 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.
- G8 NO TREES SHALL BE REMOVED, CUTBACK OR RELOCATED WITHOUT THE WRITTEN INSTRUCTION FROM THE SUPERINTENDENT/COUNCIL.
- G9 WHERE NEW WORKS ABUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED.
- G10 ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS AND THESE SPECIFICATIONS.
- G11 DESIGN LEVELS GIVEN ARE TO FINISHED SURFACE LEVEL AND INCLUSIVE OF TOPSOIL. TOPSOIL DEPTH VARIES!
- G12 THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A N.A.T.A. REGISTERED SURVEYOR.
- G13 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.
- G14 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.
- G15 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.
- G16 HORIZON ENGINEERS 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.
- G17 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.
- G18 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.
- G19 THE CONTRACTOR SHALL PREPARE ACCURATE WORKS-AS-EXECUTED DRAWINGS FOLLOWING THE COMPLETION OF ALL WORKS.
- G20 IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE IN PLACE & MAINTAIN TRAFFIC FACILITIES AT ALL TIMES DURING CONSTRUCTION
- G21 GEOTEXTILE FABRIC MATERIAL TO BE BIDIM A14 OR APPROVED EQUIVALENT AND SHALL COMPLY WITH AS3030-1011'GEOTEXTILES- IDENTIFICATION, MARKING AND GENERAL DATA'.

## RESTORATION

- R1 RESTORE ALL TRAFFIC AREAS TO PRE-EXISTING CONDITIONS  
R2 FOR ALL SURFACES OTHER THAN IN TRAFFIC AREAS RESTORE  
DISTURBED SURFACES TO PRE-EXISTING CONDITIONS AND  
COMPACT AS SPECIFIED.

## APPROVALS

- AP1 THE AS-BUILT WORKS SHALL BE INSPECTED BY THE ENGINEER. MINIMUM 48 HOURS NOTICE SHALL APPLY TO ALL INSPECTIONS.
- AP2 THE DESIGN PLANS HEREIN ARE SUBJECT TO LOCAL COUNCIL APPROVAL PRIOR TO CONSTRUCTION. OBTAIN EXPRESS IN WRITING ADVICE TO PROCEED FROM PROJECT SUPERINTENDENT PRIOR TO COMMENCEMENT.
- AP3 SUBMIT WORK-AS-EXECUTED DRAWINGS IN DWG FORMAT AND HARD COPY FORMAT UNDERTAKEN BY A REGISTERED SURVEYOR. VERIFY ALL CONSTRUCTION WORKS SHOWN HEREON.
- AP4 CERTIFY THAT THE AS-BUILT SYSTEM HAS BEEN BUILT IN ACCORDANCE WITH THE APPROVED PLANS ISSUED FOR CONSTRUCTION.
- AP5 ALLOW FOR SUB GRADE AND PAVEMENT THICKNESS TO BE VERIFIED BY THE GEOTECHNICAL ENGINEER AFTER INSPECTION OF PRELIMINARY BOXING.
- AP6 ALLOW FOR ANY SUB-GRADE REPLACEMENT WORK TO BE DETERMINED AS REQUIRED BY GEOTECHNICAL ENGINEER AT THE TIME OF PAVEMENT CONSTRUCTION.

## KERB AND GUTTER

- KG1 ALL KERB AND GUTTER SHALL COMPLY WITH AS2786-2000,'CONCRETE KERBS AND CHANNELS-MANUALLY OR MACHINE PLACED'.
- KG2 CONCRETE CHARACTERISTICS SHALL BE IN ACCORDANCE WITH THE CONCRETE NOTES.
- KG3 CONTROL JOINTS SHALL BE FORMED AT A MAXIMUM SPACING OF 3m.
- KG4 THE CONTRACTOR SHALL LIAISE WITH RELEVANT AUTHORITIES TO DETERMINE THEIR REQUIREMENTS FOR THE KERBS AND GUTTERS.
- KG5 ALL KERB & GUTTER IS TO BE MACHINE LAID UNLESS OTHERWISE APPROVED BY THE SUPERINTENDANT

## KERB INLET PITS

- |    |   |
|----|---|
| K1 | COMPRESSIVE STRENGTH (F'c) FOR CAST IN SITU CONCRETE SHALL BE A MINIMUM 15MPa AT 18 DAYS.   |
| K2 | 100 DIA SUBSOIL DRAINAGE PIPE 3000mm LONG WRAPPED IN FABRIC SOCK SHALL BE PROVIDED ON THE UPSTREAM SIDE OF PIT, ADJACENT TO INLET PIPES.  |
| K3 | ALL PITS SHALL BE PROVIDED WITH A LOCKING CLIP.   |
| K4 | PIT GRATE SHALL BE "WELDLOCK" GULLY GRATE GGTB-SS OR EQUAL (APPROVED BY COUNCIL) WITH SKIRT FOR INDUSTRIAL ROADS. WITH 41x5 EDGE BARS. GRATE TO BE CAST IRON HEAVY DUTY. THE RESISTANT SWING AND BICYCLE SAFE |
| K5 | DURING INSTALLATION OF GRATE & FRAME, CONTRACTOR SHALL ENSURE CLEARANCE BETWEEN LINTEL & OPENED GRATE   |

## STORMWATER

- S1 ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE  
AS3500-3-2003 'STORMWATER DRAINAGE'.
- S2 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 AS3500-3-2003 SECTION 8.10
- S3 EXISTING SERVICES SHOWN IN APPROXIMATE LOCATIONS ONLY.  
CONDUCT TEST LOCATIONS ON SITE PRIOR TO COMMENCING WORK
- S4 COORDINATE THE INSTALLATION OF NEW SERVICES WITH ALL NEW &  
EXISTING SERVICES & STRUCTURAL PROVISIONS AS  
DETERMINED ON SITE.
- S5 ALL PIPEWORK TO BE SUPPORTED IN ACCORDANCE WITH  
AS3500-3-2003.
- S6 ALL PIPEWORK IS TO BE TESTED IN ACCORDANCE WITH THE  
REQUIREMENTS AS SET DOWN IN AS3500-3-2003. ALL  
IN-GROUND PIPEWORK TO BE INSPECTED BY THE  
SUPERINTENDENT UNDER TEST CONDITIONS PRIOR TO BACKFILLING.
- S7 BACKFILLING AND BEDDING TO AS3500-3-2003.  
PIPES SHALL BE TRUE TO GRADES SHOWN AND ALIGNED SO THAT  
THE CENTER OF THE INLET PIPE INTERSECTS WITH THE CENTER OF  
THE OUTLET PIPE AT THE DOWNSTREAM FACE OF THE PITT.
- S8 BED ALL PIPES FIRMLY AND EVENLY WITH IMPORTED FILL ONLY.  
THICKNESS OF BEDDING LAYER SHALL BE 75mm IN SOIL AND  
100mm IN ROCK.
- S9 LAY AND JOINT ALL PIPES IN ACCORDANCE WITH THE  
MANUFACTURER'S RECOMMENDATIONS AND  
AS3725-2007, 'DESIGN FOR INSTALLATION OF BURIED  
CONCRETE PIPES'.
- S10 ALLOW TO TEST ALL PIPES AND PITS TO LOCAL AUTHORITY'S  
REQUIREMENTS.
- S11 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 10% 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.

S13 COMPACT BEDDING, EMBEDMENT AND TRENCH FILL MATERIALS AS FOLLO.- EMBEDMENT;  
FOR GRANULAR FILL MATERIAL (NON-COHESIVE SOILS 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%.

S14 EXISTING SERVICES  
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.

S15 THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION AND REMOVAL (IF REQUIRED) OF ALL EXISTING SERVICES IN AREAS AFFECTED BY THE WORKS.

S16 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.

S17 DRAINAGE PIPES  
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.

S18 WHERE DOWNPIPES PASS UNDER FLOOR SLABS, SEWER GRADE uPVC WITH RUBBER RING JOINTS ARE TO BE USED.

S19 MINIMUM GRADE TO DRAINAGE PIPES TO BE 1% (U.N.O.), MIN. SIZE 100mm DIAMETER (U.N.O.).

S20 PIPES LARGER THAN OR EQUAL TO 300mm DIAMETER TO BE REINFORCED CONCRETE RUBBER RING JOINTED TYPE (CLASS 2) MANUFACTURED TO AS4058 (U.N.O.).

S21 PIPE INSTALLATION UNDER TRAFFICABLE AREAS SHALL BE IN ACCORDANCE WITH CONCRETE PIPE ASSOCIATION OF AUSTRALIA PUBLICATION "CONCRETE PIPE SELECTION & INSTALLATION" TYPE H33 SUPPORT.

S22 EQUIVALENT STRENGTH FRC PIPES MAY BE USED SUBJECT TO AUTHORITY APPROVAL.

S23 MINIMUM PIPE COVER TO BE 600mm UNDER TRAFFICABLE AREAS AND 300mm ELSEWHERE U.N.O.

S24 CONTRACTOR TO SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTORS TO ENSURE PROPER CONNECTION BETWEEN DISSIMILAR PIPEWORKS.

S25 STORMWATER DRAINAGE CONNECTIONS TO COUNCIL'S SYSTEM SHALL BE TO THE REQUIREMENTS AND THE SATISFACTION OF LOCAL COUNCIL.

S26 DRAINAGE PITS PITTS DEEPER THAN 1200mm TO BE FITTED WITH STEP IRON AT 300 CENTRES TO AS1657-2013: 'FIXED PLATFORMS, WALKWAYS, STAIRWAYS AND LADDERS - DESIGN, CONSTRUCTION AND INSTALLATION'

S27 ALL EXPOSED EDGES TO BE ROUNDED WITH 20mm RADIUS, OR CHAMFERED 20mm X 20mm

S28 PIT REINFORCEMENT - BUSH SL82 LAP TO BE 400mm MIN. CLEAR COVER 40 MIN. CAST AGAINST BLINDING OR FORMWORK.

S30 BENCHING TO BE HALF OUTGOING PIPE DEPTH. CONCRETE FOR BENCHING TO BE 20MPa MASS CONCRETE.

S31 APPROVED PRECAST PITS MAY BE USED.

S32 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.

S33 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.

S34 PIT GRATE. FRAMES AND SOLID COVERS SHALL BE CLASS B IN NON TRAFFIC AREAS AND CLASS D IN TRAFFICABLE AREAS IN ACCORDANCE WITH AS3996.

S35 ALL GRATES SHALL BE PROVIDED WITH A LOCKING CLIP.

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|-----|--|
| S36 | MAXIMUM FRONT ENTRY PIPE,-STRAIGHT ENTRY- 750 DIAMETER<br>SKEW ENTRY 45 DEGREES - 525 DIAMETER   |
| S37 | PIT GRATING TO BE GALVANISED STEEL TYPE "WELDLOK" OR<br>APPROVED EQUIVALENT.   |
| S38 | SUBSOIL DRAINAGE PIPES SHALL BE LAID AT A MIN GRADE OF<br>0.5% U.N.O.  |
| S39 | ADDITIONAL SUBSOIL DRAINAGE SHALL BE LAID TO SUIT SITE<br>CONDITIONS AND GROUNDWATER PRESENCE AS DIRECTED.   |
| S40 | SUBSOIL PIPES SHALL BE LAID BEHIND KERBS IN CUT AREAS<br>OF THE SITE.  |
| S41 | SUBSOIL DRAINAGE SHALL CONSIST OF A SLOTTED 100mm<br>DIAMETER PLASTIC PIPE WRAPPED IN GEOTEXTILE AND PLACED<br>A MINIMUM OF 650mm BELOW THE FINISHED SURFACE LEVEL<br>AND COVERED WITH 500mm OF 20mm GRAVEL.<br>PROVIDE A MINIMUM OF 150mm GRAVEL AROUND SUBSOIL PIPE.<br>TRENCH TO BE LINED WITH GEOTEXTILE FABRIC TYPE BIDIM A24 |
| S42 | GRATES TO PITS IN FOOTPATH AREAS SHALL BE HEEL SAFE<br>COMPLYING WITH THE DISABLED ACCESS CODE   |

## EROSION CONTROL

- EC1 BEFORE EARTHWORKS CAN COMMENCE THE EROSION & SEDIMENT CONTROL MEASURES MUST BE IN PLACE.
- EC2 DURING THE CONSTRUCTION PERIOD, THESE CONTROL MEASURES WILL NEED TO BE INSPECTED & MAINTAINED REGULARLY, ESPECIALLY AFTER STORM EVENTS, BY THE CONTRACTOR.
- EC3 ALL WORK IS TO BE CARRIED OUT TO PREVENT EROSION, CONTAMINATION & SEDIMENTATION OF THE STORAGE SITE, SURROUNDING AREAS & DRAINAGE SYSTEMS.
- EC4 MINIMIZE DISTURBED AREA COVERED WITH NATURAL VEGETATION. ONLY THOSE AREAS DIRECTLY REQUIRED FOR CONSTRUCTION ARE TO BE DISTURBED.
- EC5 INSTALL EROSION/SEDIMENT CONTROL MEASURES PRIOR TO COMMENCEMENT OF CONSTRUCTION OR EXCAVATION OPERATIONS.
- EC6 PROVIDE SILT FENCE/STRAW BAIL BARRIERS TO THE LOW SIDE OF ALL EXPOSED EARTH EXCAVATIONS. THE SEDIMENT FENCING MATERIAL TO CYCLONE WIRE SECURITY FENCE. SEDIMENT CONTROL FABRIC SHALL BE AN APPROVED MATERIAL (EG. HUMES PROPEX SILT STOP) STANDING 300mm ABOVE GROUND & EXTENDING 150mm BELOW GROUND.
- EC7 ISOLATE EXISTING STORMWATER PITS WITH STRAW BALES OR SILT TRAPS TO FILTER ALL INCOMING FLOWS.
- EC8 DO NOT STOCKPILE EXCAVATED MATERIAL ON THE ROAD WAY.
- EC9 DIVERT CLEAN WATER FROM UNDISTURBED AREAS AROUND THE WORKING AREAS.
- EC10 CONSTRUCTION ENTRY/EXIT SHALL BE VIA THE LOCATION NOTED ON THE DRAWING. CONTRACTOR SHALL ENSURE ALL DROPPABLE SOIL & SEDIMENT IS REMOVED PRIOR TO CONSTRUCTION TRAFFIC EXITING SITE. CONTRACTOR SHALL ENSURE ALL CONSTRUCTION TRAFFIC ENTERING AND LEAVING THE SITE DO SO IN A FORWARD DIRECTION.
- EC11 TREAT THE STORMWATER RUNOFF WITH SUSPENDED SOLIDS SO THE DISCHARGE WATER QUALITY TO COUNCIL STORMWATER DRAINAGE SYSTEM HAS A MAXIMUM CONCENTRATION OF SUSPENDED SOLIDS THAT DOES NOT EXCEED 50 MILLIGRAMS PER LITTER IN ACCORDANCE WITH THE PROTECTION OF THE ENVIRONMENT OPERATION ACT (POED 1997) AND SHALL BE APPROVED BY LOCAL COUNCIL.
- EC12 ADOPT TEMPORARY MEASURES AS MAY BE NECESSARY FOR EROSION AND SEDIMENT CONTROL, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:-
- DRAINS: TEMPORARY DRAINS AND CATCH DRAINS
- SPREADER BANKS OR OTHER STRUCTURES: TO DISPERSE CONCENTRATED RUNOFF
- SILT TRAPS: CONSTRUCTION AND MAINTENANCE OF SILT TRAPS TO PREVENT DISCHARGE OF SCOURED MATERIAL TO DOWNSTREAM AREAS.
- EC13 AFTER RAIN, INSPECT, CLEAN AND REPAIR IF REQUIRED TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.
- EC14 REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES WHEN THEY ARE NO LONGER REQUIRED.
- EC15 COMPLY WITH THE REQUIREMENTS OF LANDCOM'S MANAGEMENT URBAN STORMWATER
- SOIL AND CONSTRUCTION 'THE BLUE BOOK' LATEST EDITION
- EC16 THE EROSION AND SEDIMENT CONTROL PLAN PROVIDES IS ONLY INDICATIVE. THE CONTRACTOR SHOULD PREPARE A DETAILED ESCP SUITABLE FOR THE SPECIFIC SITE CONDITIONS.

## ABBREVIATIONS












## LEVELS

- |     |                      |
|-----|----------------------|
| FFL | FINISH FLOOR LEVEL   |
| FSL | FINISH SURFACE LEVEL |
| IL  | INVERT LEVEL         |
| RL  | REDUCED LEVEL        |
| H/L | HIGH LEVEL           |
| L/L | LOW LEVEL            |
| TK  | TOP OF KERB          |
| HP  | HIGH POINT           |


## PIPES

- |     |                      |
|-----|----------------------|
| VP  | VENT PIPE            |
| RV  | RELIEF VENT          |
| SW  | STORMWATER           |
| SRM | SEWER RISING MAIN    |
| DTU | DRAINAGE TURN UP     |
| RWO | RAIN WATER OUTLET    |
| RWH | RAIN WATER HEAD      |
| O/F | OVERFLOW             |
| BO  | BALCONY OUTLET       |
| PDO | PLANTER DRAIN OUTLET |

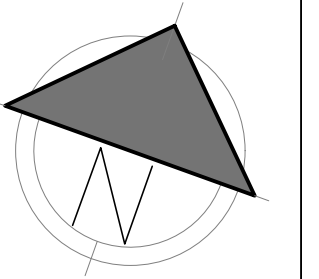
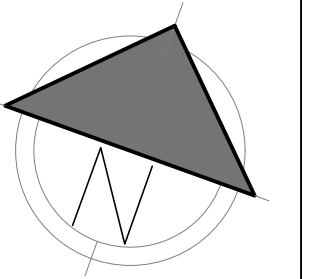
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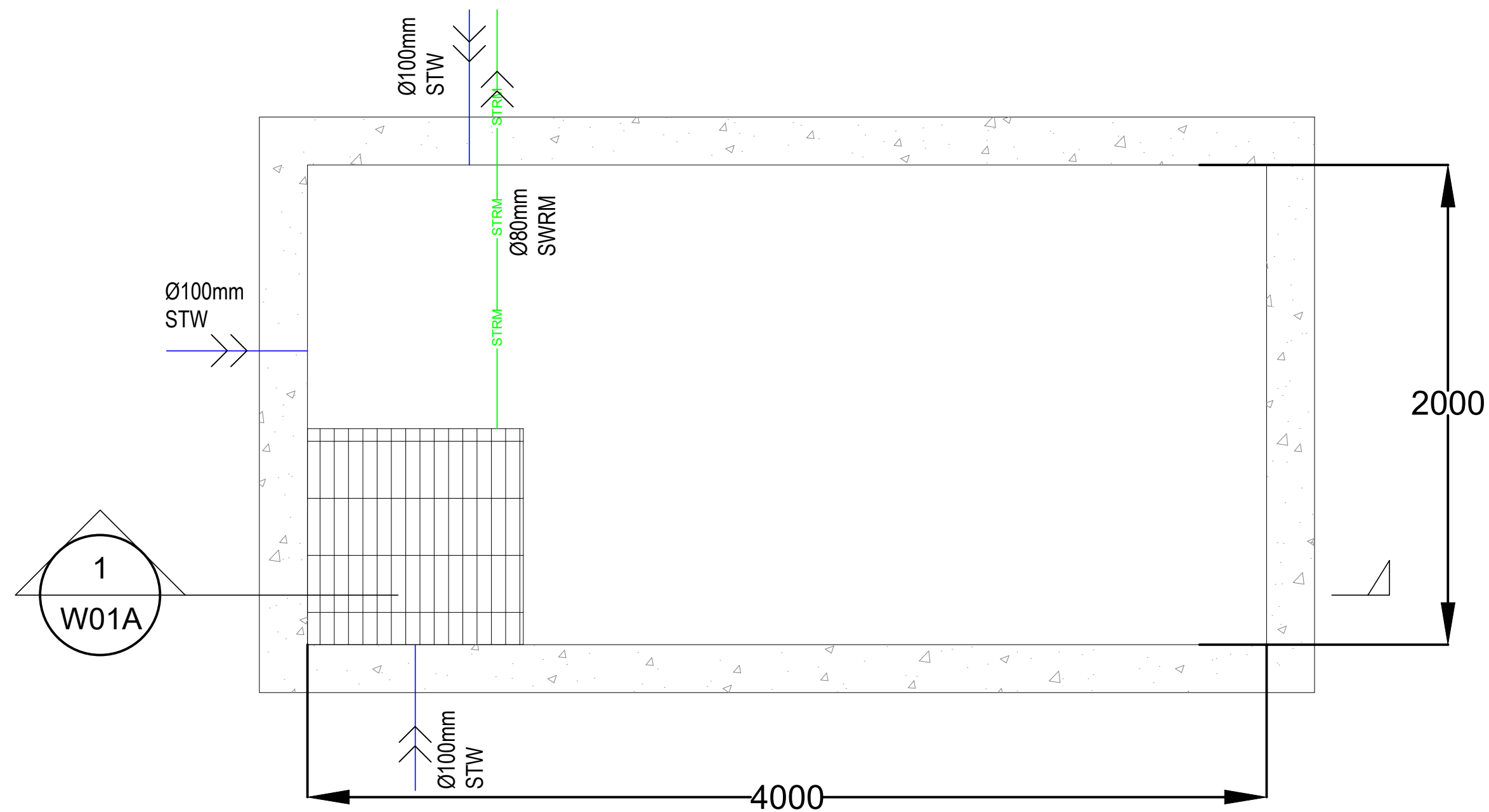
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|---|--------------|---|---------------------|
|  | CLEAR OUT    |  | DIRECTION OF FLOW   |
|  | BEND RISER   |  | RW0/PDO             |
|  | BEND DROPPER |  | SEALED JUNCTION PIT |
|  | TEE RISER    |  | GRATED INLET PIT    |
|  | TEE DROPPER  |  | TRENCH GRATE        |
|  | END CAP      |   |                     |

DRAWING SCHEDULE		
DWG NO.	DRAWING TITLE	REV.
W-00	LEGEND & NOTES	3
W-01	BASEMENT PLAN	3
W-01A	PUMP OUT PIT DETAIL	3
W-02	GROUND FLOOR PLAN	3
W-02A	OSD PLAN AND SECTION	3
W-03	EROSION & SEDIMENT CONTROL PLAN	3
W-03A	EROSION & SEDIMENT CONTROL DETAIL	3

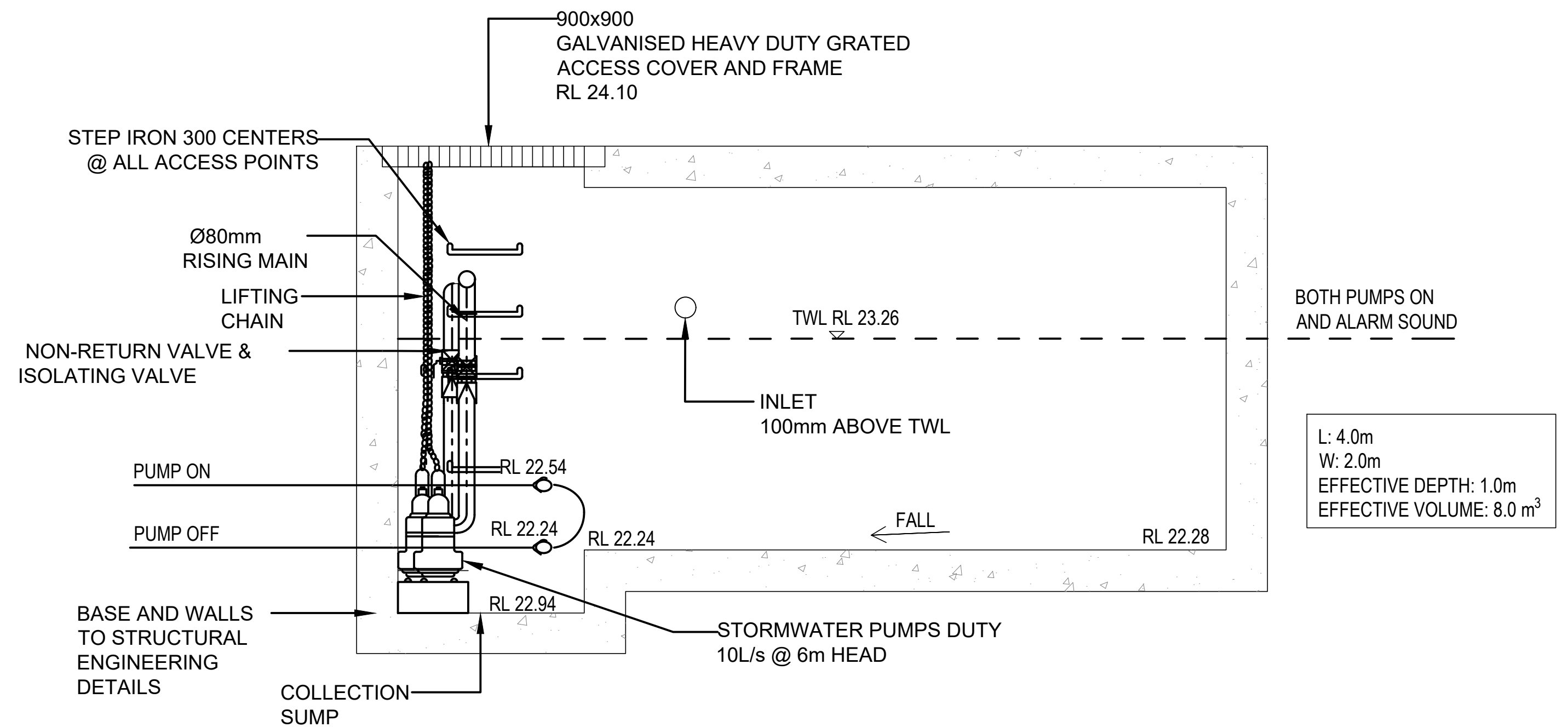
						ADDRESS: Suite 1, Level 2, 96 Phillip St, Parramatta NSW 2150 PHONE: 9635 9890  WEBSITE: <a href="http://www.horizonengineers.com.au">www.horizonengineers.com.au</a> E-MAIL: <a href="mailto:info@horizonengineers.com.au">info@horizonengineers.com.au</a>		DESIGNED	S.U	DATE	30/03/2023	ADDRESS 78-80A BENAROON RD, LAKEMBA						
								VERIFIED	H. N.	DATE	30/03/2023	SHEET TITLE						
3	S.U	30/03/23	H.N	30/03/23	RE-ISSUED FOR DA			© THIS DRAWING AND DESIGN IS THE COPYRIGHT OF HORIZON ENGINEERS PTY. LTD. NO PART OF THIS DRAWING OR DESIGN SHALL BE REPRODUCED OR USED WITHOUT PRIOR WRITTEN CONSENT FROM HORIZON ENGINEERS PTY. LTD.	DRAWN	S.U	SCALE	⊙ A1	LEGEND & NOTES					
2	S.U	22/12/22	H.N	22/12/22	ISSUED FOR DA													
1	S.U	20/12/22	H.N	20/12/22	ISSUED FOR DA													
REV.	DES.	DATE	VER.	DATE	DESCRIPTION								PROJECT NO.	22235-W	DRAWING NO.	W-00	REVISION	3







STORMWATER PUMP OUT PIT - PLAN  
SCALE 1:20



STORMWATER PUMP OUT PIT SECTION  
SCALE 1:20

#### PUMP WELL DETAILS

DRIVEWAY AREA DRAINING TO SUMP = 96.85m<sup>2</sup>

SUMP SIZE BASED ON 100YR 2 HR STORM, I = 39.5 mm/hr

$Q = CIA/3600 = 1 \times 96.85 \times 39.5/3600 = 1.063 \text{ L/sec}$

VOLUME REQUIRED =  $1.063 \times 2 \times 60 \times 60 = 7654 \text{ L} = 7.66 \text{ m}^3$

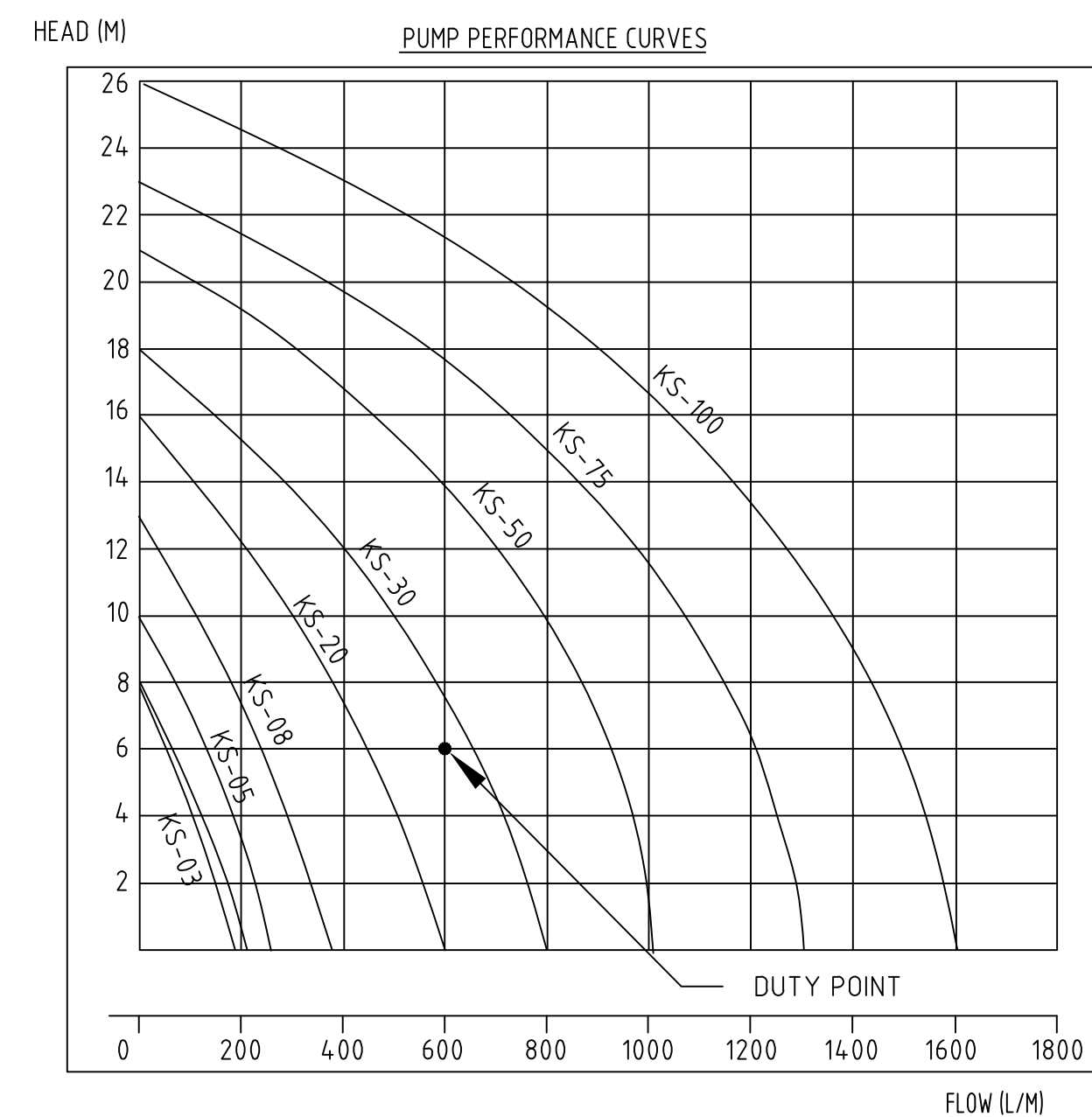
STORAGE PROVIDED  $4.0 \times 2.0 \times 1.0 = 8.00 \text{ m}^3$

PUMP OUT RATE BASED ON 100YR 5 MIN STORM, I = 213 mm/hr

(MIN.RATE REQUIRED AS PER AS 3500.3 is 10 L/sec)

$Q = CIA/3600 = 1 \times 213 \times 96.85/3600 = 5.730 \text{ L/sec}$

DUAL KS-30 PUMP OR EQUIVALENT TO BE INSTALLED IN SUMP AND CONNECTED TO CONTROL PANEL WHICH WILL ALLOW FOR THE PUMPS TO OPERATE ALTERNATIVELY ON HIGH LEVEL ALARMS AT 10L/sec(PER PUMP) AT 6 m HEAD

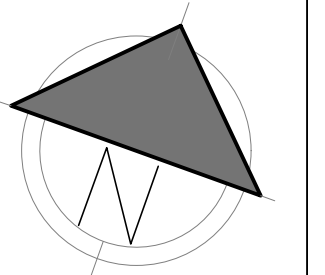


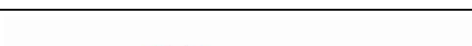
Type	Output		Outlet		Rated Head Capacity		Maximum Head Capacity		Weigh Kg	Dimension		
	HP	kW	mm	Inch	M	LPM	M	LPM		L(mm)	W(mm)	H(mm)
KS-03	1/3	0.25	40	1 1/2"	3	130	8	180	9	188	141	305
KS-04	1/2	0.4	50	2"	5	150	8	220	11	208	140	359
KS-05	1/2	0.4	50	2"	5	160	10	260	14	230	156	375
KS-08	1	0.75	50	2"	6	240	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



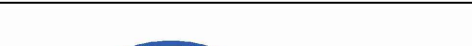
						ADDRESS: Suite 1, Level 2, 96 Phillip St, Parramatta NSW 2150 PHONE: 9635 9890  WEBSITE: www.horizonengineers.com.au E-MAIL: info@horizonengineers.com.au		DESIGNED	S.U	DATE	30/03/2023	ADDRESS 78-80A BENAROON RD, LAKEMBA									
									VERIFIED	H. N.	DATE	30/03/2023	SHEET TITLE								
3	S.U	30/03/23	H.N	30/03/23	RE-ISSUED FOR DA					DRAWN	S.U	SCALE	AS SHOWN	PUMP OUT TANK DETAIL							
2	S.U	22/12/22	H.N	22/12/22	ISSUED FOR DA					© THIS DRAWING AND DESIGN IS THE COPYRIGHT OF HORIZON ENGINEERS PTY. LTD. NO PART OF THIS DRAWING OR DESIGN SHALL BE REPRODUCED OR USED WITHOUT PRIOR WRITTEN CONSENT FROM HORIZON ENGINEERS PTY. LTD.						PROJECT NO.	22235-W	DRAWING NO.	W-01A	REVISION	3
1	S.U	20/12/22	H.N	20/12/22	ISSUED FOR DA																
REV.	DES.	DATE	VER.	DATE	DESCRIPTION																



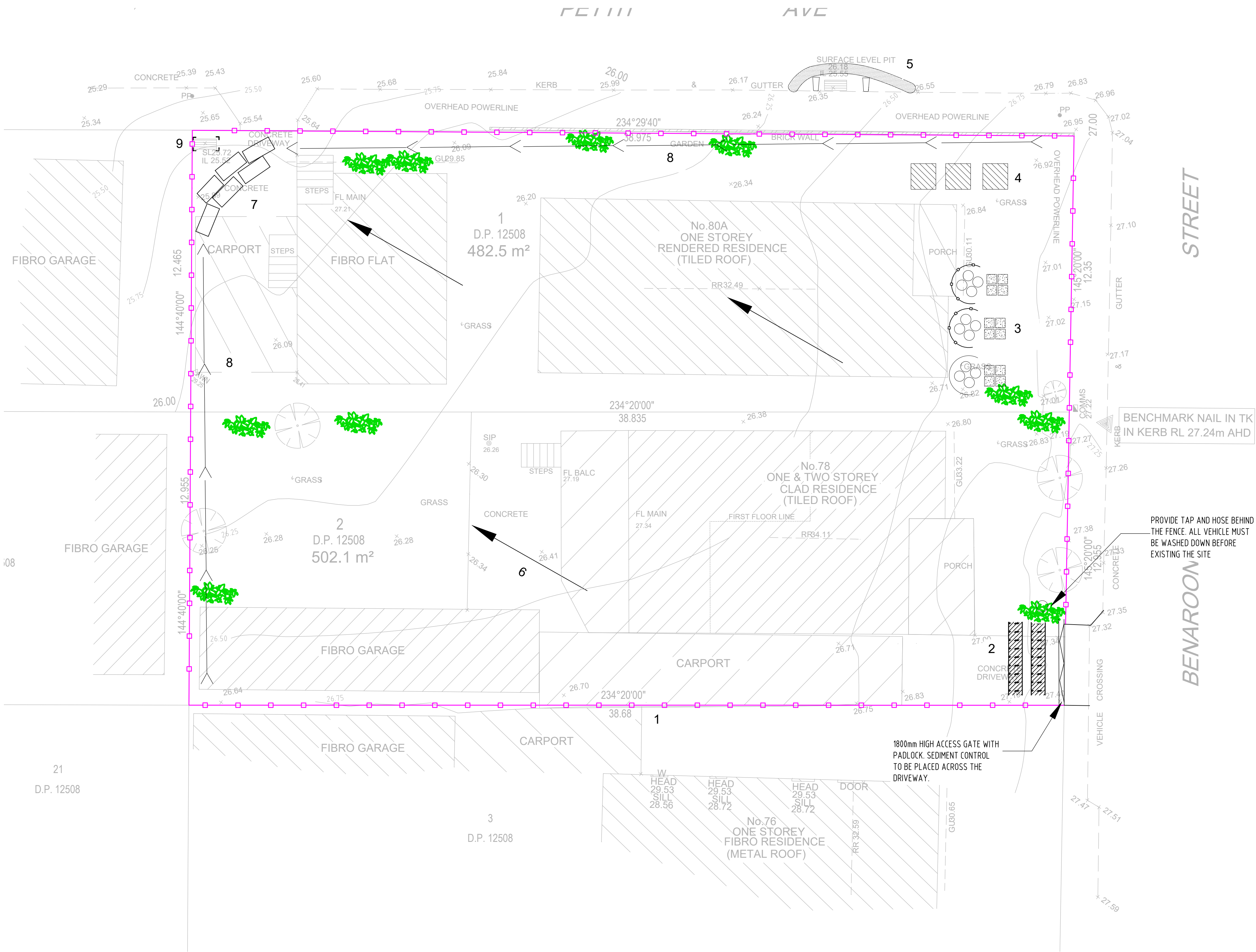


							<div>ADDRESS: Suite 1, Level 2, 96 Phillip St, Parramatta NSW 2150</div> <div>PHONE: 9635 9890</div> <div>WEBSITE: <a href="http://www.horizonengineers.com.au">www.horizonengineers.com.au</a></div> <div>E-MAIL: <a href="mailto:info@horizonengineers.com.au">info@horizonengineers.com.au</a></div>	<div></div>	DESIGNED	S.U	DATE	30/03/2023	ADDRESS 78-80A BENAROON RD, LAKEMBA			
						VERIFIED			H. N.	DATE	30/03/2023	SHEET TITLE				
3	S.U	30/03/23	H.N	30/03/23	RE-ISSUED FOR DA				DRAWN	S.U	SCALE	© A1	1:100	GROUND FLOOR PLAN		
2	S.U	22/12/22	H.N	22/12/22	ISSUED FOR DA				© THIS DRAWING AND DESIGN IS THE COPYRIGHT OF HORIZON ENGINEERS PTY. LTD. NO PART OF THIS DRAWING OR DESIGN SHALL BE REPRODUCED OR USED WITHOUT PRIOR WRITTEN CONSENT FROM HORIZON ENGINEERS PTY. LTD.							
1	S.U	20/12/22	H.N	20/12/22	ISSUED FOR DA				PROJECT NO. 22235-W						DRAWING NO. W-02	REVISION 3
REV.	DES.	DATE	VER.	DATE	DESCRIPTION											

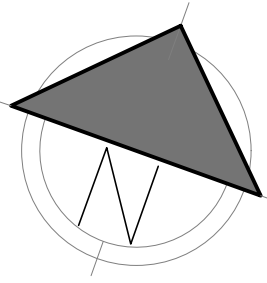


- |      |      |          |      |          |                  | ADDRESS: Suite 1, Level 2, 96 Phillip St, Parramatta NSW 2150<br>PHONE: 9635 9890 |  | DESIGNED<br>S.U   | DATE<br>30/03/2023 | ADDRESS 78-80A BENAROON RD, LAKEMBA          |         |             |       |          |   |
|------|------|----------|------|----------|------------------|---|---|---|--------------------|--|---------|-------------|-------|----------|---|
|      |      |          |      |          |                  |   |   | VERIFIED<br>H. N.   | DATE<br>30/03/2023 | SHEET TITLE<br><br>OSD TANK PLAN AND SECTION |         |             |       |          |   |
| 3    | S.U  | 30/03/23 | H.N  | 30/03/23 | RE-ISSUED FOR DA |   |   | DRAWN<br>S.U  | SCALE<br>A1        | AS SHOWN                                     |         |             |       |          |   |
| 2    | S.U  | 22/12/22 | H.N  | 22/12/22 | ISSUED FOR DA    | WEBSITE: www.horizonengineers.com.au  |   | <small>© THIS DRAWING AND DESIGN IS THE COPYRIGHT OF HORIZON ENGINEERS PTY. LTD. NO PART OF THIS DRAWING OR DESIGN SHALL BE REPRODUCED OR USED WITHOUT PRIOR WRITTEN CONSENT FROM HORIZON ENGINEERS PTY. LTD.</small> |                    |  |         |             |       |          |   |
| 1    | S.U  | 20/12/22 | H.N  | 20/12/22 | ISSUED FOR DA    | E-MAIL: info@horizonengineers.com.au  |   |   |                    |  |         |             |       |          |   |
| REV. | DES. | DATE     | VER. | DATE     | DESCRIPTION      |   |   |   |                    | PROJECT NO.                                  | 22235-W | DRAWING NO. | W-02A | REVISION | 3 |





LEGEND		
TAG	SYMBOL	DESCRIPTION
1		SEDIMENT FENCE. REFER TO SD 6-8 FOR DETAIL ON SHEET W-06A.
2		SHAKER GRID. REFER TO DETAIL.
3		MATERIAL STOCKPILE, REFER TO SD 4-1 FOR DETAIL ON SHEET W-06A.
4		TEMPORARY TOILET AND BIN
5		GRAVEL AND MESH FILTER. REFER TO SD 6-11 FOR DETAIL ON SHEET W-06A.
6		OVERLAND FLOW
7		STRAW BALE SEDIMENT FILTER. REFER TO DETAIL ON SHEET W-06A.
8		EARTH BANK (LOW FLOW). REFER TO SD 5-5 FOR DETAIL ON SHEET W-06A.
9		GEOTEXTILE INLET FILTER. REFER TO SD 6-12 FOR DETAIL ON SHEET W-07A.



REV.	DES.	DATE	VER.	DATE	DESCRIPTION
3	S.U.	30/03/23	H.N.	30/03/23	RE-ISSUED FOR DA
2	S.U.	22/12/22	H.N.	22/12/22	ISSUED FOR DA
1	S.U.	20/12/22	H.N.	20/12/22	ISSUED FOR DA

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DESIGNED	S.U.	DATE	30/03/2023
VERIFIED	H. N.	DATE	30/03/2023
DRAWN	S.U.	SCALE	© A1 1:100

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ADDRESS	78-80A BENAROON RD, LAKEMBA		
SHEET TITLE	EROSION & SEDIMENT CONTROL PLAN		
PROJECT NO.	22235-W	DRAWING NO.	W-03
REVISION	3		



