

STORMWATER MANAGMENT PLAN (DA)

LOT 1, 41 MAY RD DEE WHY NSW

GENERAL

1. FINAL LOCATION OF NEW DOWNPIPES TO BE DETERMINED BY BUILDER/ARCHITECT AT TIME OF CONSTRUCTION.
2. THESE DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTS AND OTHER CONSULTANTS DRAWINGS. ANY DISCREPANCIES TO BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH WORK.
3. ALL MATERIALS AND WORKMANSHIP TO BE IN ACCORDANCE WITH AS/NZS 3500.3:2018 STORMWATER DRAINAGE, BCA AND LOCAL COUNCIL POLICY/CONSENT/REQUIREMENTS.
4. ALL DIMENSIONS AND LEVELS TO BE VERIFIED BY BUILDER ON-SITE PRIOR TO COMMENCEMENT OF WORKS.
5. THESE DRAWINGS ARE NOT TO BE SCALED FOR DIMENSIONS NOR TO BE USED FOR SETOUT PURPOSES.
6. ALL SURVEY INFORMATION AND PROPOSED BUILDING AND FINISHED SURFACE LEVELS SHOWN IN THESE DRAWINGS ARE BASED ON LEVELS OBTAINED FROM DRAWINGS BY OTHERS.
7. THESE DRAWINGS DEPICT THE DESIGN OF SURFACE STORMWATER RUNOFF DRAINAGE SYSTEMS ONLY AND DO NOT DEPICT ROOF DRAINAGE OR SUBSOIL DRAINAGE SYSTEMS
8. UNLESS NOTED OTHERWISE, THE DESIGN OF ROOF AND SUBSOIL DRAINAGE SYSTEMS IS THE RESPONSIBILITY OF OTHERS.
9. ALL STORMWATER DRAINAGE PIPES ARE TO BE uPVC AT MINIMUM 1% GRADE UNLESS NOTED OTHERWISE.
10. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE AND LEVEL ALL EXISTING SERVICES OR OTHER STRUCTURES WHICH MAY AFFECT/BE AFFECTED BY THIS DESIGN PRIOR TO COMMENCEMENT OF WORKS.
11. ALL PITS WITHIN DRIVEWAYS TO BE 150mm THICK CONCRETE OR EQUAL.
12. THIS PLAN IS THE PROPERTY OF PLATINUM ENGINEERING SOLUTIONS AND MAY NOT BE USED OR REPRODUCED WITHOUT WRITTEN PERMISSION FROM PLATINUM ENGINEERING SOLUTIONS.

DRAINAGE NOTES

1. ALL DRAINAGE LEVELS TO BE CONFIRMED ON SITE, PRIOR TO ANY CONSTRUCTION COMMENCING
2. ALL PIPES WITHIN THE PROPERTY TO BE A MINIMUM OF 100 DIA UPVC @ 1% MINIMUM GRADE, UNO.
3. ALL PITS WITHIN THE PROPERTY ARE TO BE FITTED WITH "WELDLK" OR APPROVED EQUIVALENT GRATES:
 - LIGHT DUTY FOR LANDSCAPED AREAS
 - HEAVY DUTY WHERE SUBJECTED TO VEHICULAR TRAFFIC
4. ALL PITS WITHIN THE PROPERTY TO BE CONSTRUCTED AS ONE OF THE FOLLOWING:
 - PRECAST STORMWATER PITS
 - CAST INSITU MASS CONCRETE
 - CEMENT RENDERED 230MM BRICKWORK SUBJECT TO THE RELEVANT LOCAL AUTHORITY CONSTRUCTION SPECIFICATION.
5. ENSURE ALL GRATES TO PITS ARE SET BELOW FINISHED SURFACE LEVEL WITHIN THE PROPERTY.
6. TOP OF PIT RL'S ARE APPROXIMATE ONLY AND MAY BE VARIED SUBJECT TO APPROVAL OF THE ENGINEER. ALL INVERT LEVELS ARE TO BE ACHIEVED.
7. ANY PIPES BENEATH RELEVANT LOCAL AUTHORITY ROAD TO BE RUBBER RING JOINTED RCP, UNO.
8. ALL PITS IN ROADWAYS ARE TO BE FITTED WITH HEAVY DUTY GRATES WITH LOCKING BOLTS AND CONTINUOUS HINGE.
9. PROVIDE STEP IRONS TO STORMWATER PITS GREATER THAN 1200 IN DEPTH
10. TRENCH BACK FILL IN ROADWAYS SHALL COMPRISE SHARP, CLEAN GRANULAR BACK FILL IN ACCORDANCE WITH THE RELEVANT LOCAL AUTHORITY SPECIFICATION TO NON-TRAFFICABLE AREAS TO BE COMPACTED BY RODDING AND TAMPING USING A FLAT PLATE VIBRATOR.
11. WHERE A HIGH EARLY DISCHARGE (HED) PIT IS PROVIDED ALL PIPES ARE TO BE CONNECTED TO THE HED PIT, UNO.
12. DOWN PIPES SHALL BE A MINIMUM OF DN100 SW GRADE UPVC OR 100 X100 COLORBOND/ZINCALUME STEEL, UNO.
13. COLORBOND OR ZINCALUME STEEL BOX GUTTERS SHALL BE A MINIMUM OF 450 WIDE X 150 DEEP, UNO.
14. EAVES GUTTERS SHALL BE A MINIMUM OF 125 WIDE X 100 DEEP (OR OF EQUIVALENT AREA) COLORBOND OR ZINCALUME STEEL, UNO.
15. SUBSOIL DRAINAGE SHALL BE PROVIDED TO ALL RETAINING WALLS & EMBANKMENTS, WITH THE LINES FEEDING INTO THE STORMWATER DRAINAGE SYSTEM, UNO.

EROSION AND SEDIMENT CONTROL NOTES

GENERAL INSTRUCTIONS

1. THIS SOIL AND WATER MANAGEMENT PLAN IS TO BE READ IN CONJUNCTION WITH OTHER ENGINEERING PLANS RELATING TO THIS DEVELOPMENT
2. CONTRACTORS WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE UNDERTAKEN AS INSTRUCTED IN THIS SPECIFICATION AND CONSTRUCTED FOLLOWING THE GUIDELINES OF "MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION", DEPT OF HOUSING, 2004 (BLUE BOOK).
3. ALL SUBCONTRACTORS WILL BE INFORMED OF THEIRRESPONSIBILITIES IN REDUCING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE AREAS.

LAND DISTURBANCE INSTRUCTIONS

4. DISTURBANCE TO BE NO FURTHER THAN 5 (PREFERABLY METRES FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY AS SHOWN ON APPROVED PLANS. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCING (DOWNSLOPE) OR SIMILAR MATERIALS.
5. ACCESS AREAS ARE TO BE LIMITED TO A MAXIMUM WIDTH OF 10 METRES THE SITE MANAGER WILL DETERMINE AND MARK THE LOCATION OF THESE ZONES ON-SITE. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE BOUNDARIES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCING (DOWNSLOPE) OR SIMILAR MATERIALS.
6. ENTRY TO LANDS NOT REQUIRED FOR CONSTRUCTION OR ACCESS IS PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH.
7. WORKS ARE TO PROCEED IN THE FOLLOWING SEQUENCE:
 - A. INSTALL ALL BARRIER AND SEDIMENT FENCING WHERE SHOWN ON THE PLAN.
 - B. CONSTRUCT THE STABILISED SITE ACCESS.
 - C. CONSTRUCT DIVERSION DRAINS AS REQUIRED.
 - D. INSTALL MESH AND GRAVEL INLETS FOR ANY ADJACENT KERB INLETS.
 - E. INSTALL GEOTEXTILE INLET FILTERS AROUND ANY ON-SITE DROP INLET PITS.
 - F. CLEAR SITE AND STRIP AND STOCKPILE TOPSOIL IN LOCATIONS SHOWN ON THE PLAN.
 - G. UNDERTAKE ALL ESSENTIAL CONSTRUCTION WORKS ENSURING THAT ROOF AND/OR PAVED AREA STORMWATER SYSTEMS ARE CONNECTED TO PERMANENT DRAINAGE AS SOON AS PRACTICABLE.
 - H. GRADE LOT AREAS TO FINAL GRADES AND APPLY PERMANENT STABILISATION (LANDSCAPING) WITHIN 20 DAYS OF COMPLETION OF CONSTRUCTION WORKS.
 - I. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT LANDSCAPING HAS BEEN COMPLETED.

5. ENSURE THAT SLOPE LENGTHS DO NOT EXCEED 80 METRES WHERE PRACTICABLE. SLOPE LENGTHS ARE DETERMINED BY SILTATION FENCING AND CATCH DRAIN SPACING.
 6. ON COMPLETION OF MAJOR WORKS LEAVE DISTURBED LANDS WITH A SCARIFIED SURFACE TO ENCOURAGE WATER INFILTRATION AND ASSIST WITH KEYING TOPSOIL LATER.
- SITE MAINTENANCE INSTRUCTIONS

7. THE SITE SUPERINTENDENT WILL INSPECT THE SITE AT LEAST WEEKLY AND AT THE CONCLUSION OF EVERY STORM EVENT TO:
 - A. ENSURE THAT DRAINS OPERATE PROPERLY AND TO EFFECT ANY NECESSARY REPAIRS.
 - B. REMOVE SPILLED SAND OR OTHER

MATERIALS FROM HAZARD AREAS, INCLUDING LANDS CLOSER THAN 5 METRES FROM AREAS OF LIKELY CONCENTRATED OR HIGH VELOCITY FLOWS ESPECIALLY WATERWAYS AND PAVED AREAS.

C. REMOVE TRAPPED SEDIMENT WHENEVER THE DESIGN CAPACITY OF THAT STRUCTURE HAS BEEN EXCEEDED.

D. ENSURE REHABILITATED LANDS HAVE EFFECTIVELY REDUCED THE EROSION HAZARD AND TO INITIATE UPGRADING OR REPAIR AS NECESSARY.

E. CONSTRUCT ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS. MAKE ONGOING CHANGES TO THE PLAN WHERE IT PROVES INADEQUATE IN PRACTICE OR IS SUBJECTED TO CHANGES IN CONDITIONS ON THE WORK-SITE OR ELSEWHERE IN THE CATCHMENT.

F. MAINTAIN EROSION AND SEDIMENT CONTROL STRUCTURES IN A FULLY FUNCTIONING CONDITION UNTIL ALL EARTHWORK ACTIVITIES ARE COMPLETED AND THE SITE IS REHABILITATED.

8. THE SITE SUPERINTENDENT WILL KEEP A LOGBOOK MAKING ENTRIES AT LEAST WEEKLY, IMMEDIATELY BEFORE FORECAST RAIN AND AFTER RAINFALL. ENTRIES WILL INCLUDE:

- A. THE VOLUME AND INTENSITY OF ANY RAINFALL EVENTS.
- B. THE CONDITION OF ANY SOIL AND WATER MANAGEMENT WORKS.
- C. THE CONDITION OF VEGETATION AND ANY NEED TO IRRIGATE.
- D. THE NEED FOR DUST PREVENTION STRATEGIES.
- E. ANY REMEDIAL WORKS TO BE UNDERTAKEN.

THE LOGBOOK WILL BE KEPT ON-SITE AND MADE AVAILABLE TO ANY AUTHORISED PERSON UPON REQUEST. IT WILL BE GIVEN TO THE PROJECT MANAGER AT THE CONCLUSION OF THE WORKS.

SEDIMENT CONTROL INSTRUCTIONS

9. SEDIMENT FENCES WILL BE INSTALLED AS SHOWN ON THE PLAN AND ELSEWHERE AT THE DISCRETION OF THE SITE SUPERINTENDENT TO CONTAIN SOIL AS NEAR AS POSSIBLE TO THEIR SOURCE.
10. SEDIMENT FENCES WILL NOT HAVE CATCHMENT AREAS EXCEEDING 900 SQUARE METRES AND HAVE A STORAGE DEPTH OF AT LEAST 0.6 METRES.
11. SEDIMENT REMOVED FROM ANY TRAPPING DEVICES WILL BE RELOCATED WHERE FURTHER POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS CANNOT OCCUR.
12. STOCKPILES ARE NOT TO BE LOCATED WITHIN 5 METRES OF HAZARD AREAS INCLUDING AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS AND DRIVEWAYS.
13. WATER WILL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR WATER HAS BEEN TREATED BY AN APPROVED DEVICE.
14. TEMPORARY SEDIMENT TRAPS WILL REMAIN IN PLACE UNTIL AFTER THE LANDS THEY ARE PROTECTING ARE COMPLETELY REHABILITATED.
15. ACCESS TO SITES SHOULD BE STABILISED TO REDUCE THE LIKELIHOOD OF VEHICLES TRACKING SOIL MATERIALS ONTO PUBLIC ROADS AND ENSURE ALL-WEATHER ENTRY/EXIT.

16. EARTH BATTERS WILL BE CONSTRUCTED WITH AS LOW A
 - GRADIENT AS PRACTICABLE BUT NO STEEPER,

UNLESS OTHERWISE NOTED, THAN:

- 2(H):1(V) WHERE SLOPE LENGTH LESS THAN 12 METRES
 - 2.5(H):1(V) WHERE SLOPE LENGTH BETWEEN 12 AND 16 METRES.
 - 3(H):1(V) WHERE SLOPE LENGTH BETWEEN 16 AND 20 METRES.
 - 4(H):1(V) WHERE SLOPE LENGTH GREATER THAN 20 METRES.
17. ALL WATERWAYS, DRAINS, SPILLWAYS AND THEIR OUTLETS WILL BE CONSTRUCTED TO BE STABLE IN AT LEAST THE 1:20 YEAR ARI, TIME OF CONCENTRATION STORM EVENT.
 18. WATERWAYS AND OTHER AREAS SUBJECT TO CONCENTRATED FLOWS AFTER CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND COVER C-FACTOR OF 0.05 (70% GROUND COVER) WITHIN 10 WORKING DAYS FROM COMPLETION OF FORMATION. FLOW VELOCITIES ARE TO BE LIMITED TO THOSE SHOWN IN TABLE 5-1 OF "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION", DEPT OF HOUSING 2004 (BLUE BOOK). FOOT AND VEHICULAR TRAFFIC WILL BE PROHIBITED IN THESE AREAS.
 19. STOCKPILES AFTER CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND-COVER C-FACTOR OF 0.1 (60% GROUND-COVER) WITHIN 10 WORKING DAYS FROM COMPLETION OF FORMATION.
 20. ALL LANDS, INCLUDING WATERWAYS AND STOCKPILES, DURING CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND-COVER C-FACTOR OF 0.15 (50% GROUND COVER) WITHIN 20 WORKING DAYS FROM INACTIVITY EVEN THOUGH WORKS MAY CONTINUE LATER.
 21. FOR AREAS OF SHEET FLOW USE THE FOLLOWING GROUND COVER PLANT SPECIES FOR TEMPORARY JAPANESE MILLET 20 KG/HA AND OATS 20 KG/HA.
 22. PERMANENT REHABILITATION OF LANDS AFTER CONSTRUCTION WILL ACHIEVE A GROUND-COVER C-FACTOR OF LESS THAN 0.1 AND LESS THAN 0.05 WITHIN 60 DAYS. NEWLY PLANTED LANDS WILL BE WATERED REGULARLY UNTIL AN EFFECTIVE COVER IS ESTABLISHED AND PLANTS ARE GROWING VIGOROUSLY. FOLLOW-UP SEED AND FERTILISER WILL BE APPLIED AS NECESSARY.
 23. REVEGETATION SHOULD BE AIMED AT RE-ESTABLISHING NATURAL SPECIES. NATURAL SURFACE SOILS SHOULD BE REPLACED AND NON-PERSISTANT ANNUAL COVER CROPS SHOULD BE USED.

WASTE CONTROL INSTRUCTIONS

24. ACCEPTABLE BINS WILL BE PROVIDED FOR ANY CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHING, LIGHTWEIGHT WASTE MATERIALS AND LITTER. CLEARANCE SERVICES WILL BE PROVIDED AT LEAST DISPOSAL OF WASTE WILL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT.
25. ALL POSSIBLE POLLUTANT MATERIALS ARE TO BE STORED WELL CLEAR OF ANY POORLY DRAINED AREAS, FLOOD PRONE AREAS, STREAMBANKS, CHANNELS AND STORMWATER DRAINAGE AREAS. STORE SUCH MATERIALS IN A DESIGNATED AREA UNDER COVER WHERE POSSIBLE AND WITHIN CONTAINMENT BUNDS.
26. ALL SITE STAFF AND SUB-CONTACTORS ARE TO BE INFORMED OF THEIR OBLIGATION TO USE WASTE CONTROL FACILITIES PROVIDED.
27. ANY DE-WATERING ACTIVITIES ARE TO BE CLOSELY MONITORED TO ENSURE THAT WATER IS NOT POLLUTED BY SEDIMENT, TOXIC MATERIALS OR PETROLEUM PRODUCTS.
28. PROVIDE DESIGNATED VEHICULAR WASHDOWN AND MAINTENANCE AREAS WHICH ARE TO HAVE CONTAINMENT BUNDS.

STANDARD LINE TYPES, SYMBOLS AND ABBREVIATIONS

	PROPOSED BELOW GROUND SEALED ROOF WATER TO RWT
	PROPOSED BELOW GROUND STORMWATER PIPE
	SUBSOIL DRAINAGE LINE
	SEDIMENT CONTROL FENCE
	PROPOSED JUNCTION PIT
	OVERLAND FLOW PATH
	OVERFLOW
	DOWNPIPE
	SPREADER
	CLEANING EYE
	FLOOR OUTLET, REFER TO DETAIL
	FLOOR GULLY Ø 150
	Ø150 INSPECTION POINT
	INVERT LEVEL
	RAIN WATER HEAD
	RAIN WATER OUTLET (300 x 300)
	RAIN WATER TANK
	SURFACE LEVEL

DEPTH OF COVER FOR PVC PIPES

MINIMUM PIPE COVER SHALL BE AS FOLLOWS1;

LOCATION	MINIMUM COVER
NOT SUBJECT TO VEHICLE LOADING	100mm SINGLE RESIDENTIAL 300mm ALL OTHER DEVELOPMENTS
SUBJECT TO VEHICLE LOADING	450mm WHERE NOT ON ROAD
UNDER A SEALED ROAD	600mm
UNSEALED ROAD	750mm
PAVED DRIVEWAY	100mm BELOW CONCRETE

PIT SIZES AND DESIGN

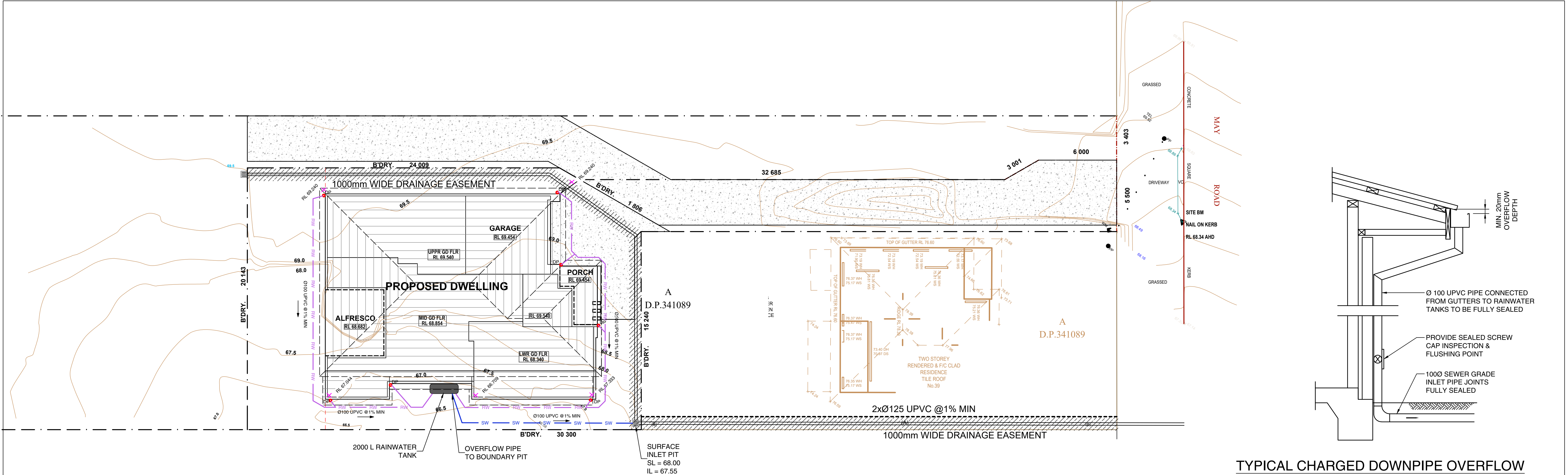
DEPTH (mm)	MINIMUM PIT SIZE (mm)
UP TO 450mm	450 x 450
450mm TO 600mm	600 x 600
600mm TO 900mm	600 x 900
900mm TO 1500mm	900 x 900 (WITH STEP IRONS)
1500mm TO 2000mm	1200 x 1200 (WITH STEP IRONS)

A	16.12.19	ISSUED FOR DA	M.H	Z.D
ISSUE	DATE	DESCRIPTION	DRAWN	APPROVED
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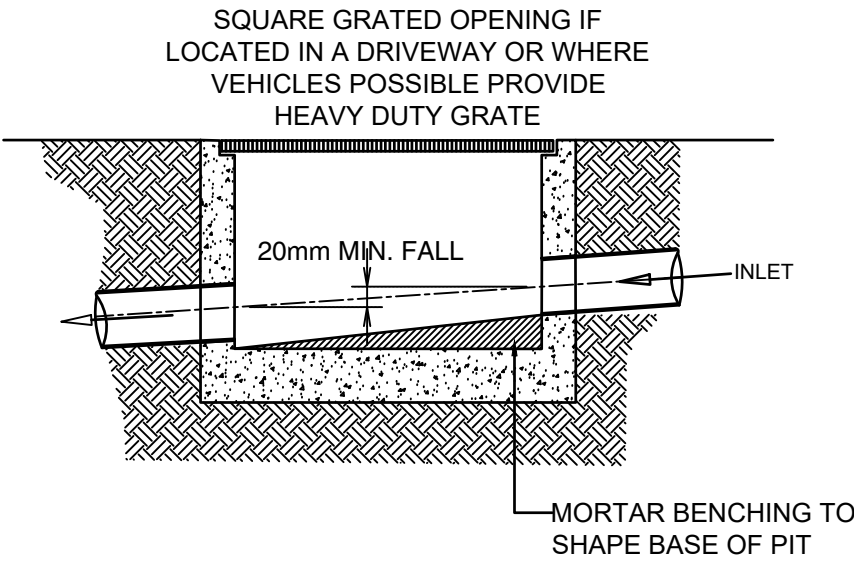
APPROVED BY PRINCIPAL ENGINEER ZIAD DAKKAK 	NORTH POINT
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CONSULTANT Platinum Engineering Solutions Pty Ltd LEVEL 11, CLARENCE ST SYDNEY NSW 2200 EMAIL: ADMIN@PLEN.COM.AU	PROJECT MANAGERS STRUCTURAL STORMWATER FLOOD MODELING GEOTECHNICAL
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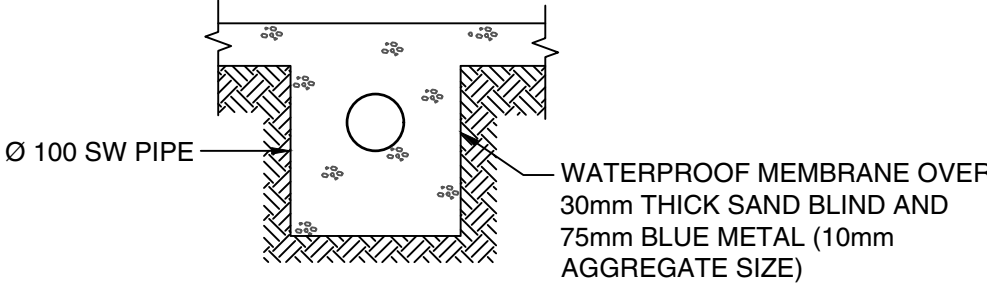
PROJECT ADDRESS LOT 1 41 MAY RD DEE WHY	DRAWING TITLE GENERAL NOTES
PROJECT TITLE PROPOSED DWELLING	CLIENT DETAILS MRS. RAINA ZHOU
SCALE 1:100	DESIGNED BY M.H
PROJECT NO 19010	SHEET NO SW-000
	ISSUE A



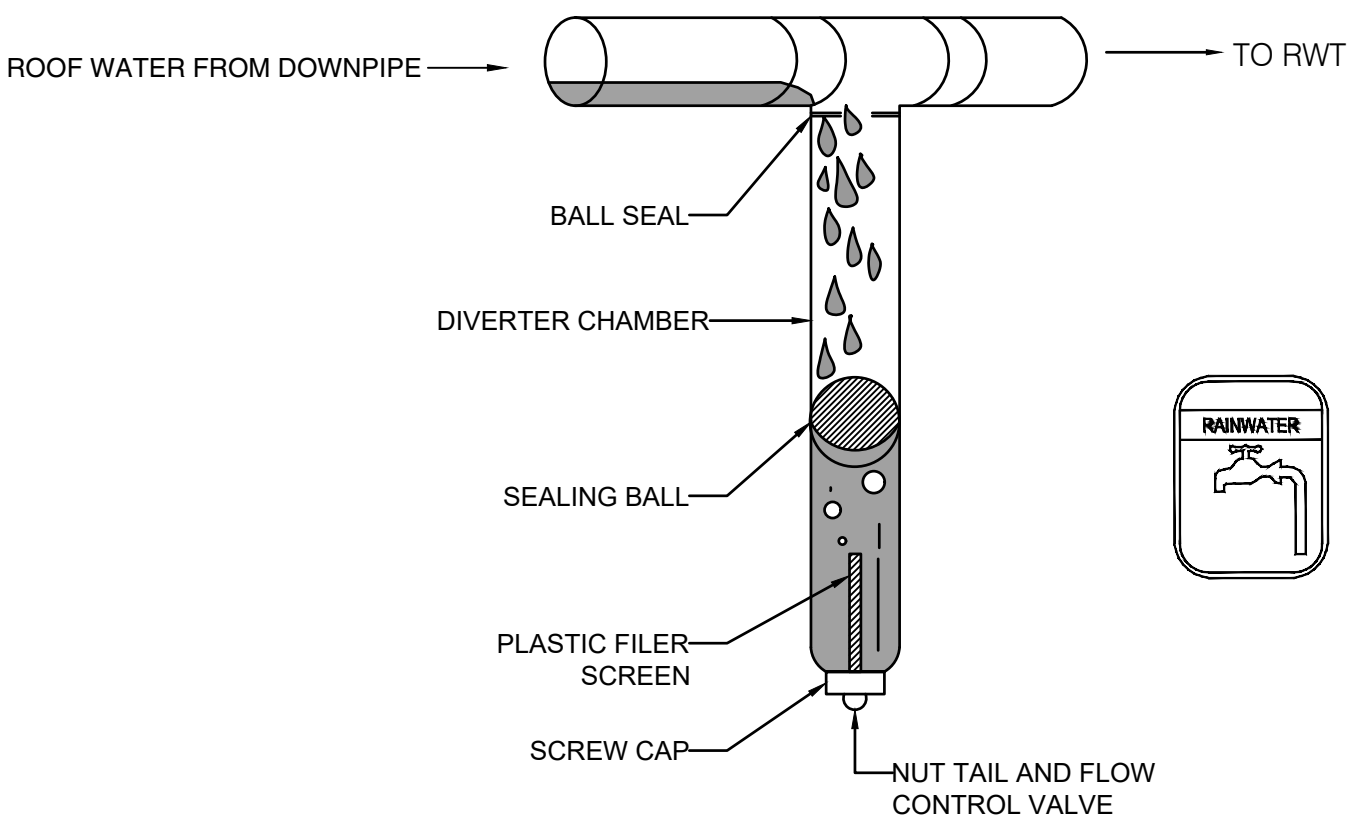
STORMWATER LAYOUT (LOT 1)
SCALE 1:50



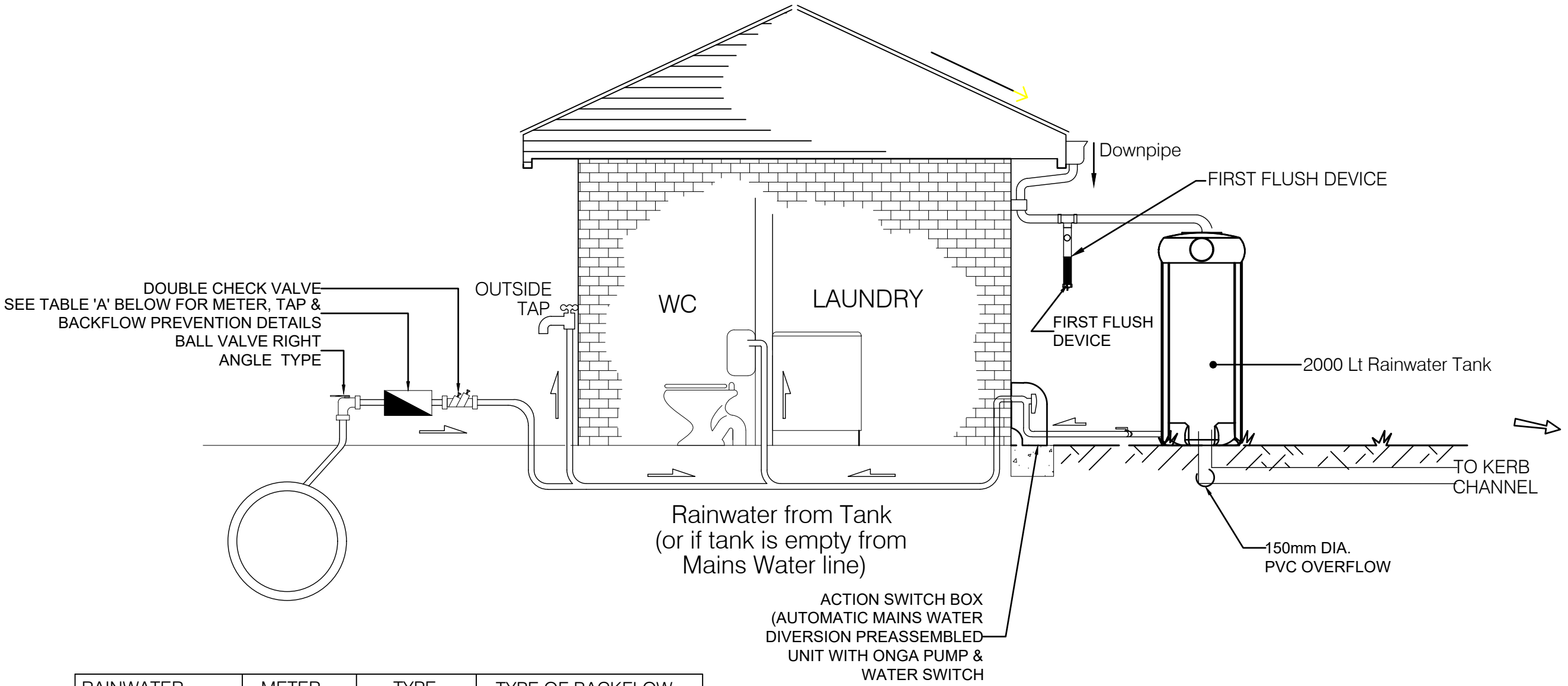
PIT DETAIL (NTS)



PIPE BEDDING DETAIL N.T.S.



FIRST FLUSH DEVICE DETAIL (not to scale)



RAINWATER TANK EXPLANATORY DIAGRAM (not to scale)

RAINWATER TANK LOCATION	METER SIZE (mm)	TYPE OF TAP	TYPE OF BACKFLOW PREVENTION
ABOVE GROUND	20	BALL VALVE	DUAL CHECK VALVE (COMBINED WITH METER)
	25	BALL VALVE	DUAL CHECK VALVE
	32	BALL VALVE	DUAL CHECK VALVE
BELOW GROUND	20	BALL VALVE	TESTABLE DOUBLE CHECK VALVE
	25	BALL VALVE	TESTABLE DOUBLE CHECK VALVE
	32	BALL VALVE	TESTABLE DOUBLE CHECK VALVE

A	16.12.19	ISSUED FOR DA	M.H	Z.D
ISSUE	DATE	DESCRIPTION	DRAWN	APPROVED
SCALE (cm) FULL SIZE 0 1 2 4 6 10 14				

APPROVED BY
PRINCIPAL ENGINEER
ZIAD DAKKAK

NORTH POINT

CONSULTANT

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PROJECT MANAGERS

STRUCTURAL

STORMWATER

FLOOD MODELING

GEOTECHNICAL

PROJECT ADDRESS
LOT 1 41 MAY RD DEE WHY

PROJECT TITLE
PROPOSED DWELLING

DRAWING TITLE
STORMWATER LAYOUT PLAN

CLIENT DETAILS
MRS. RAINA ZHOU

SCALE
1:100

PROJECT NO
19010

DESIGNED BY
M.H

SHEET NO
SW-100

ISSUE
A