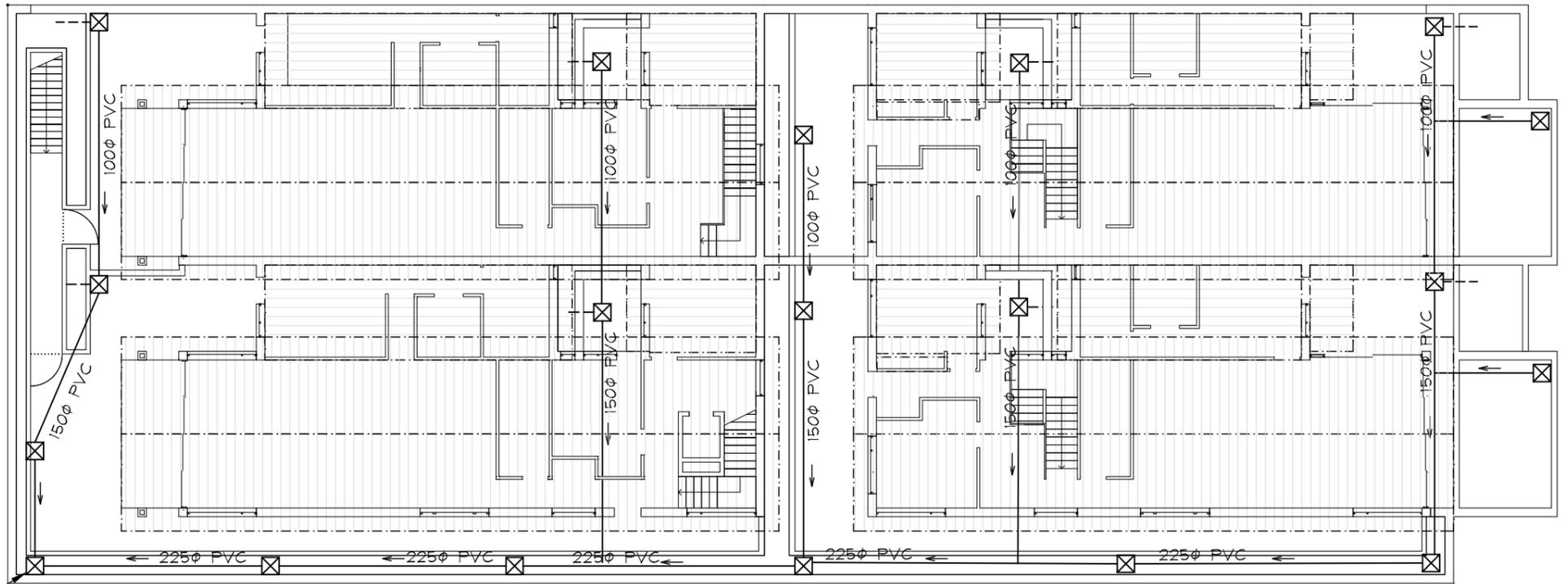


STORMWATER STRATEGY

1. ALL UPPER TERRACE SURFACE WATER TO DISCHARGE VIA SURFACE INLET PITS AND/OR GRATED DRAINS DIRECTLY TO KERB INLET PIT IN BALUNE LANE (IE BYPASS STORAGE TANK). PITS AND PIPES DESIGNED FOR 1:100 YEAR 5 MINUTE STORM EVENT.
2. ALL ROOF WATER COLLECTED IN GUTTERS TO DISCHARGE TO BASIX / RE-USE TANK UNDER GARAGE FLOOR. OVERFLOW TO KERB INLET PIT IN BALUNE LANE. ROOF WATER DRAINAGE BY PLUMBER.
3. SECONDARY OVERFLOWS TO BE PROVIDED TO INTERNAL COURTYARD AREAS. ALSO PROVIDE SECONDARY OVERFLOWS TO PARAPET WALLS
4. DETENTION NOT REQUIRED AS NO INCREASE IN IMPERVIOUS AREA PROPOSED

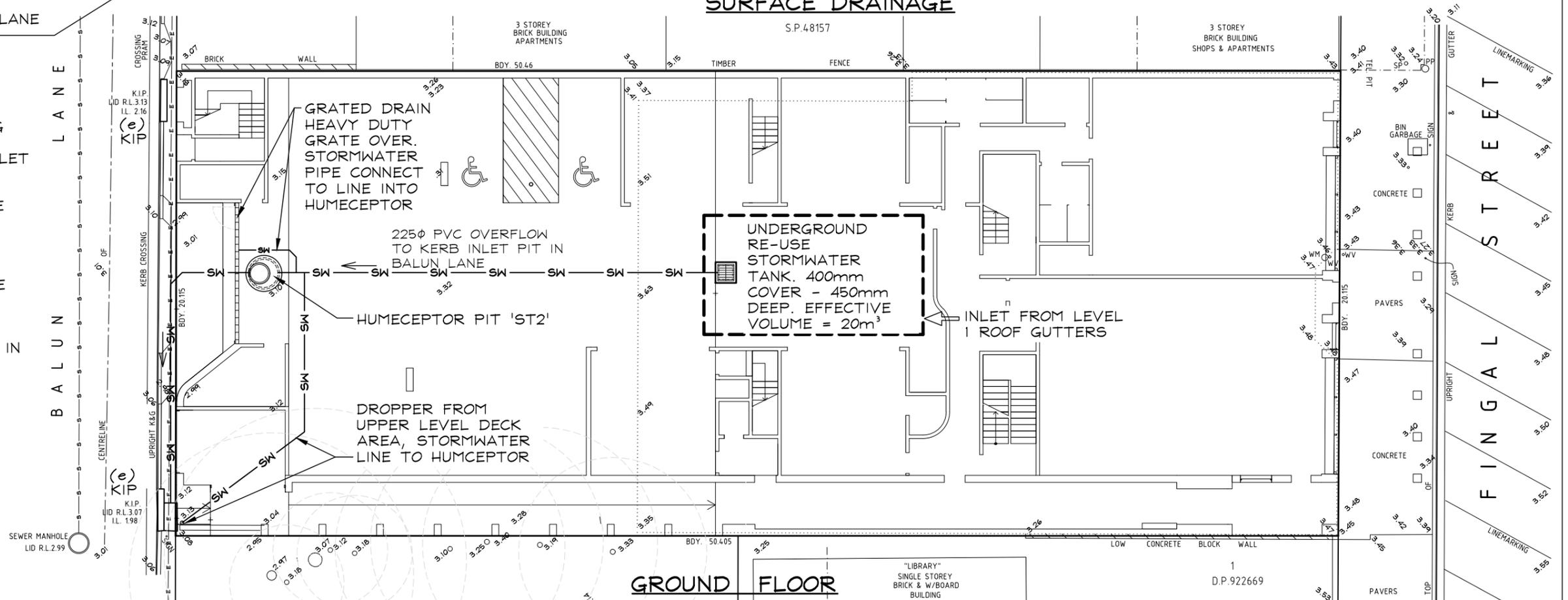


FIRST FLOOR - TERRACE SURFACE DRAINAGE

OUTLET POINT, DISCHARGE TO KERB INLET PIT IN BALUNE LANE VIA HUMCEPTOR PIT

LEGEND

- (e) DENOTES EXISTING
- KIP DENOTES KERB INLET PIT
- SIP DENOTES SURFACE INLET PIT
- SW — DENOTES STORMWATER PIPE
- ⊠ DENOTES 450 SQ. STORMWATER PIT IN FIRST FLOOR SUSPENDED SLAB OVER.



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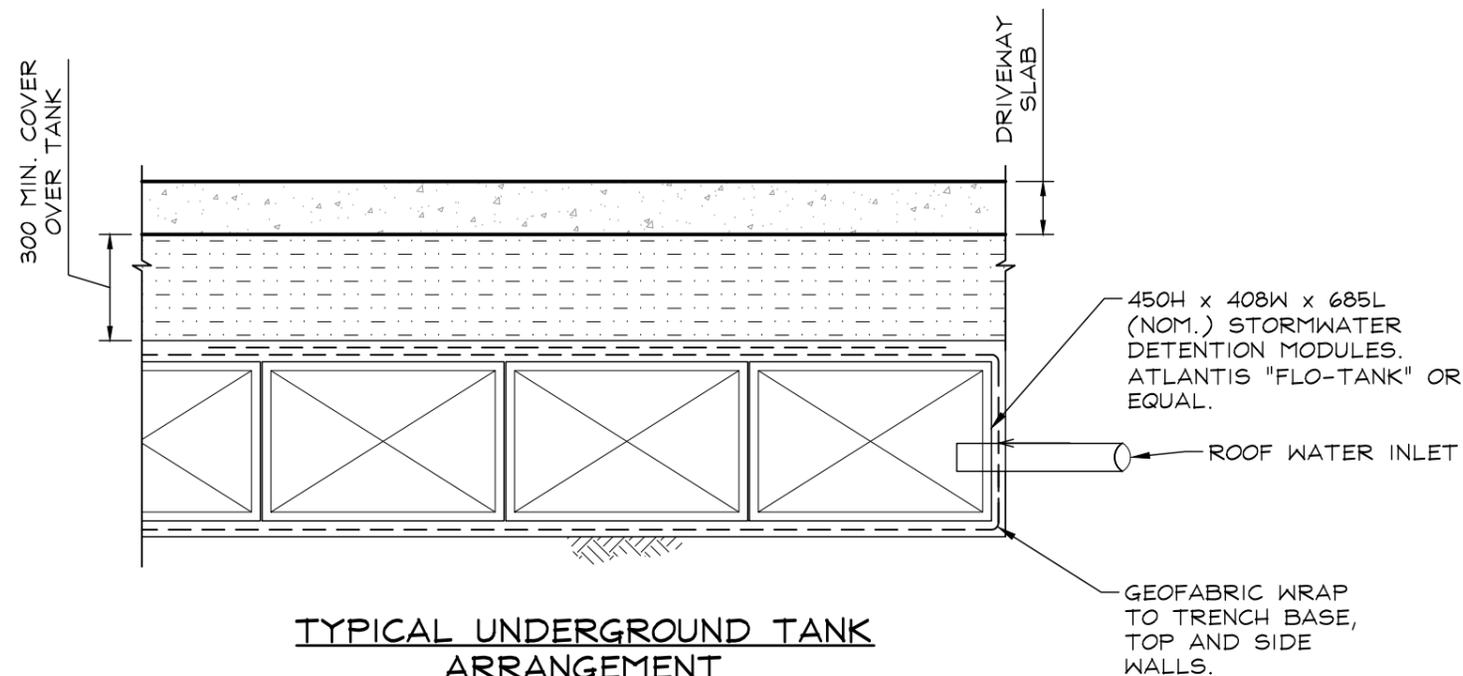
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PROJECT
CONCEPT STORMWATER MANAGEMENT PLAN

AT
9 FINGAL STREET, BRUNSWICK HEADS

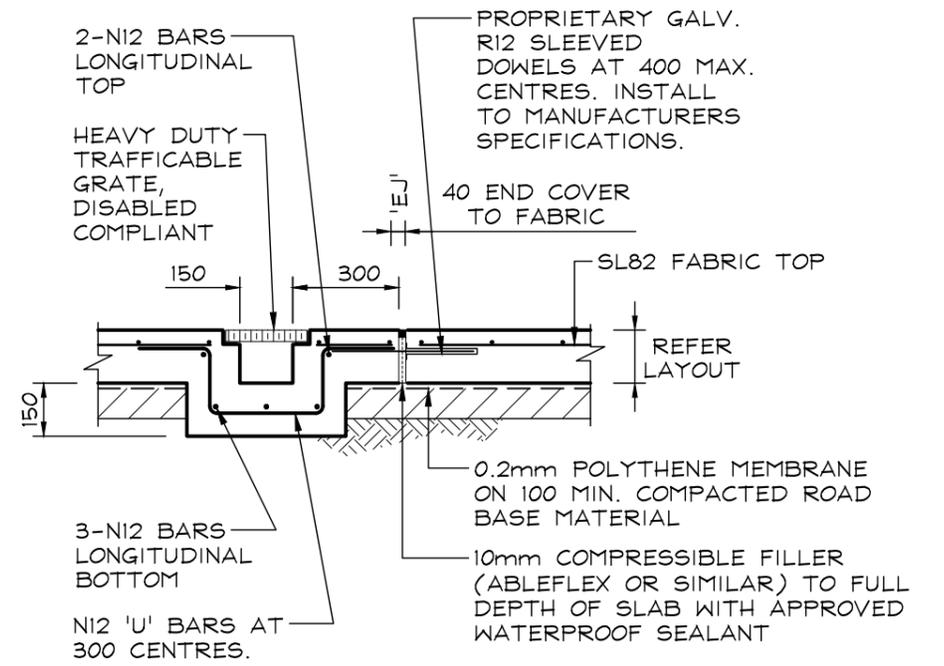
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STORMWATER PLAN			
DESIGN DM	DRAWN WSA	DRAWING SCALE 1:200	SHEET SIZE A3
PROJECT REF No 230411		DRAWING No SWMP1	REVISION B



TYPICAL UNDERGROUND TANK ARRANGEMENT

NOT TO SCALE



DRIVEWAY GRATED TRENCH DETAIL

PROPRIETARY SLEEVED DOWEL OPTION

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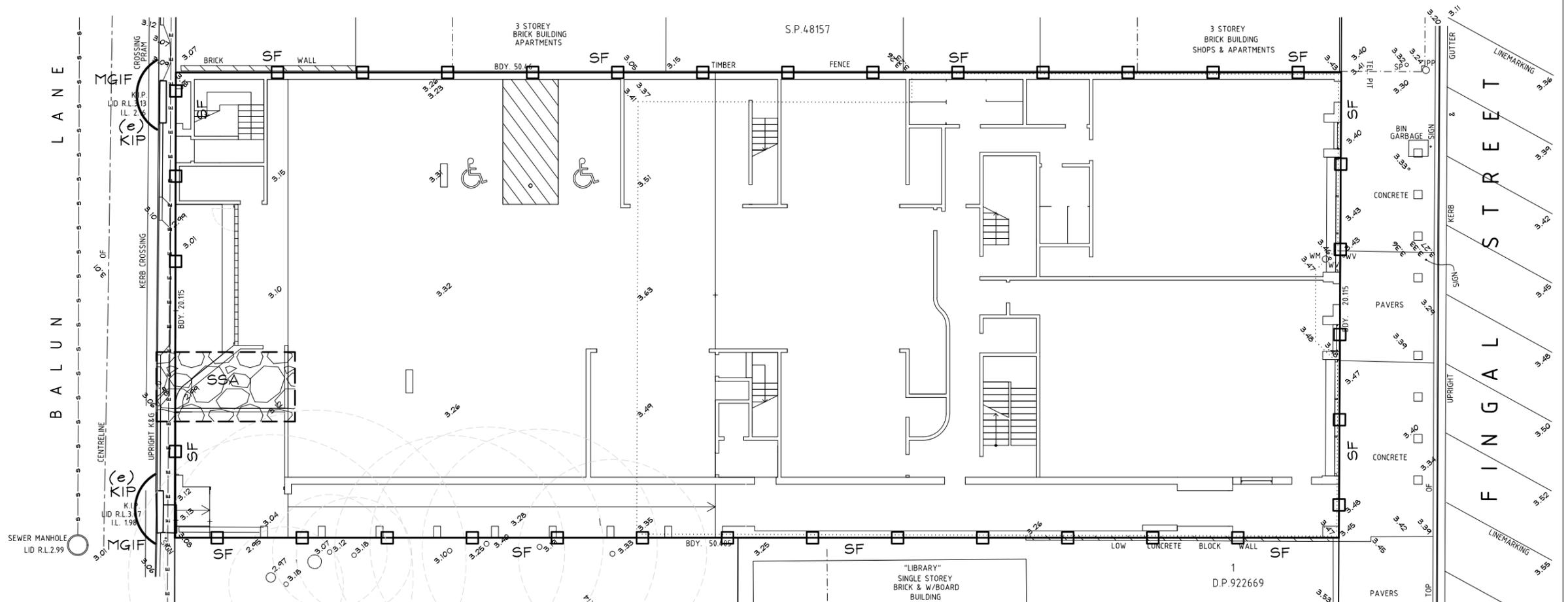
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TYPICAL STORAGE TANK DETAIL			
DESIGN	DRAWN	DRAWING SCALE	SHEET SIZE
DM	WSA	1:20	A3
PROJECT REF No		DRAWING No	REVISION
230411		SWMP2	B

LEGEND

- MGIF  INDICATES MESH AND GRAVEL INLET FILTER
- GIF  INDICATES GEOTEXTILE INLET FILTER
- SF  INDICATES SEDIMENTATION FENCE
- HBF  INDICATES HAY BALE FILTER
- (e) DENOTES EXISTING
- KIP DENOTES KERB INLET PIT
- SIP DENOTES SURFACE INLET PIT
- SSA DENOTES STABILISED SITE ACCESS
- DCP DENOTES DISCHARGE CONTROL PIT

NOTES

1. REFER TO DRAWINGS FOR EROSION AND SEDIMENT CONTROL DETAILS.
2. REFER TO DRAWING SECPGN FOR EROSION AND SEDIMENT CONTROL GENERAL NOTES.
3. ROOF DRAINAGE DESIGN BY OTHERS.
4. ROOF DRAINAGE PIPEWORK MUST NOT BE CONNECTED TO SURFACE PIT DRAINAGE PIPEWORK UNLESS SPECIFICALLY SHOWN THIS LAYOUT.



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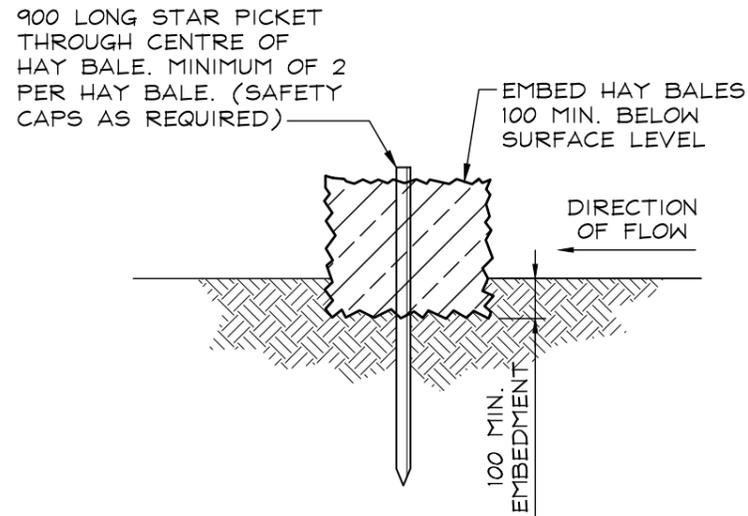
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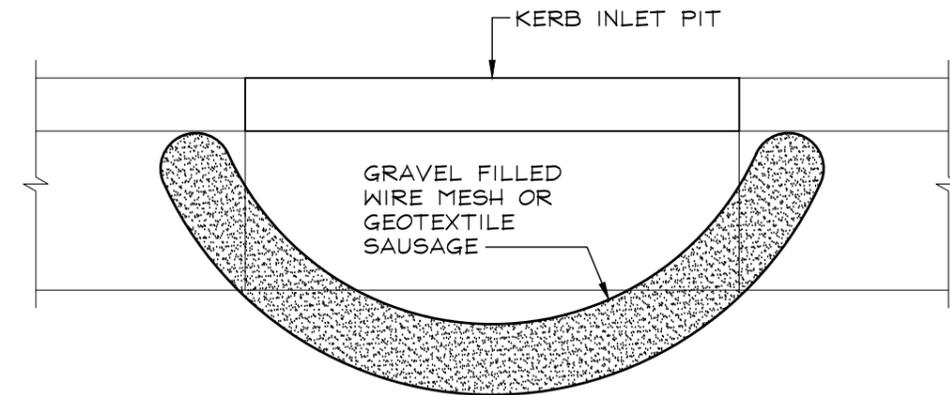
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DESIGN DM	DRAWN WSA	DRAWING SCALE 1:200	SHEET SIZE A3
PROJECT REF No 230411		DRAWING No SEC1	REVISION B



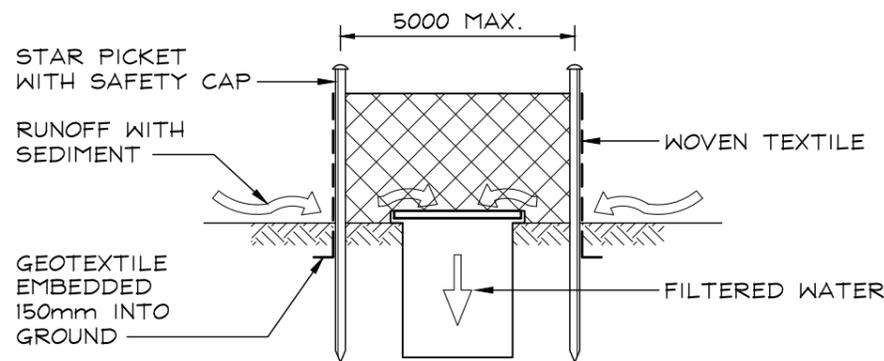
TYPICAL HAY BALE FILTER 'HBF' DETAIL
SCALE - 1:20



TYPICAL CONSTRUCTION SEQUENCE:-

1. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT.
2. FILL THE SLEEVE WITH 25mm TO 50mm GRAVEL.
3. FORM AN ELLIPTICAL CROSS SECTION ABOUT 150mm HIGH x 400mm WIDE.
4. PLACE THE FILTER AT THE OPENING OF THE KERB INLET LEAVING A 100mm GAP AT THE TOP TO ACT AS AN EMERGENCY SPILLWAY.
5. MAINTAIN THE OPENING WITH SPACER BLOCKS.
6. FORM A SEAL WITH THE KERBING AND PREVENT SEDIMENT BYPASSING THE FILTER.
7. FIT TO ALL KERB INLETS AT SAG POINTS.

MESH AND GRAVEL INLET FILTER 'MGIF' DETAIL
SCALE - 1:20



NOTES:-

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES SUPPORT GEOTEXTILE WITH MESH TIED TO POSTS AT 1m CENTRES.
2. DO NOT COVER INLET WITH GEOTEXTILE.

GEOTEXTILE INLET FILTER 'GIF' DETAIL
SCALE - 1:20

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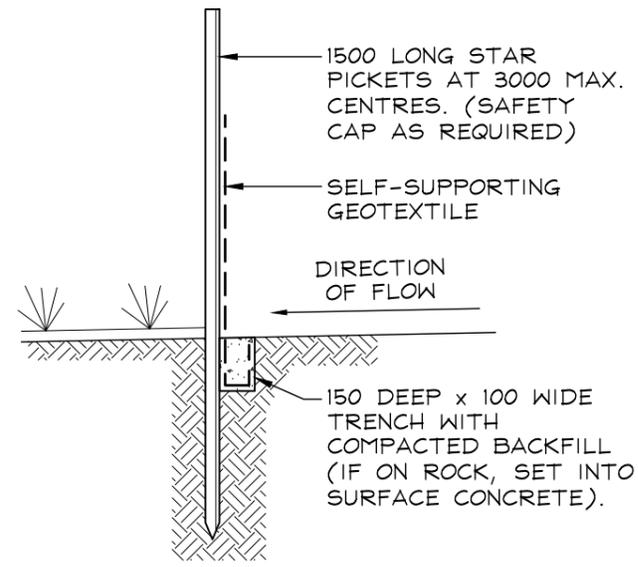
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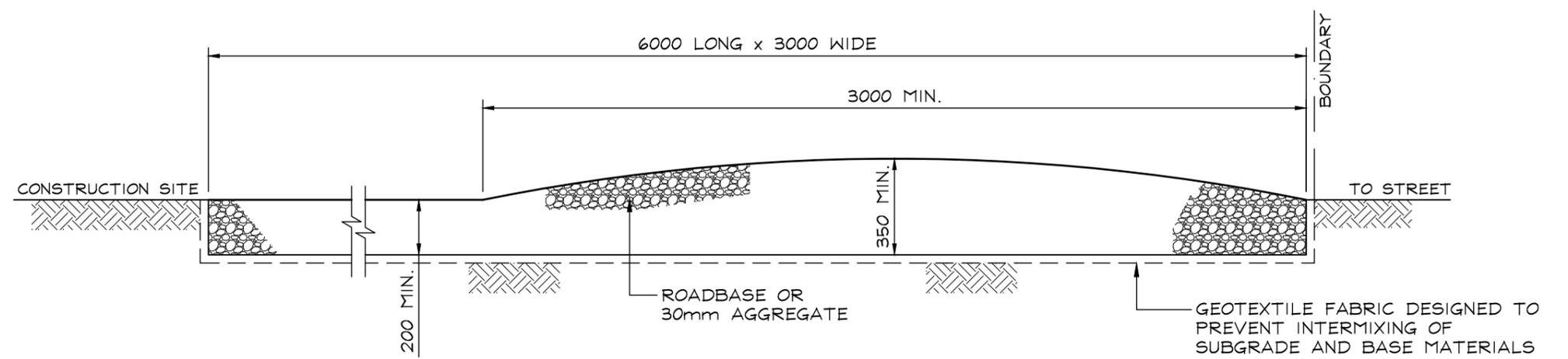
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DM	WSA	1:200	A3
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- TYPICAL CONSTRUCTION SEQUENCE:-
1. CONSTRUCT SEDIMENT FENCE PARALLEL WITH CONTOURS ON SITE WHERE POSSIBLE.
 2. DRIVE 1.5m LONG STAR PICKETS INTO GROUND AT 3m MAXIMUM CENTRES.
 3. DIG A 150mm DEEP TRENCH ALONG THE UPSLOPE SIDE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
 4. BACKFILL TRENCH OVER BASE OF FABRIC.
 5. FIX SELF-SUPPORTING GEOTEXTILE TO UPSLOPE SIDE OF POSTS WITH WIRE TIES OR AS RECOMMENDED BY GEOTEXTILE MANUFACTURER.
 6. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH 150mm OVERLAP.

TYPICAL SEDIMENT FENCE 'SF' DETAIL
SCALE - 1:20



- TYPICAL CONSTRUCTION SEQUENCE:-
1. STRIP TOPSOIL AND LEVEL SITE.
 2. COMPACT SUB-GRADE.
 3. COVER AREA WITH NEEDLE PUNCHED GEOTEXTILE.
 4. CONSTRUCT GRAVEL PAD OVER GEOTEXTILE USING ROADBASE OR 30mm AGGREGATE. MINIMUM 3m WIDE.
 5. CONSTRUCT HUMP IMMEDIATELY WITHIN BOUNDARY TO DIVERT WATER TO A SEDIMENT FENCE OR SEDIMENT TRAP.

GEOTEXTILE FABRIC DESIGNED TO PREVENT INTERMIXING OF SUBGRADE AND BASE MATERIALS AND TO MAINTAIN GOOD PROPERTIES OF THE SUB BASE LAYER. GEOTEXTILE MAY BE WOVEN OR A NEEDLE PUNCHED PRODUCT WITH A MINIMUM CBR BURST STRENGTH (AS3706.4-90) O 2500N.

STABILISED SITE ACCESS 'SSA' DETAIL
SCALE - 1:20

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230411		SEC3	B

CIVIL WORKS

- ALL CONSTRUCTION TO BE IN ACCORDANCE WITH LOCAL COUNCIL STANDARDS.
- FOR SETOUT REFER TO ARCHITECT'S DRAWINGS.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
- ALL LEVELS ARE GIVEN IN METRES UNLESS NOTED OTHERWISE.
- ALL LEVELS SHOWN ARE FINISHED SURFACE LEVELS UNLESS NOTED OTHERWISE.
- CONCRETE SHALL HAVE THE FOLLOWING PROPERTIES:
 - CLASS OF CONCRETE SHALL BE NORMAL,
 - MAXIMUM SLUMP SHALL BE 80mm,
 - MAXIMUM AGGREGATE SIZE SHALL BE 20mm,
 - PRODUCTION ASSESSMENT OF CONCRETE STRENGTHS IS SUFFICIENT, AND
 - MINIMUM 28 DAY COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 25 MPa UNLESS NOTED OTHERWISE.
- CONCRETE WORKS SHALL CONFORM TO AS 3600.
- APPROVAL OF LOCAL AUTHORITY TO BE OBTAINED BY CONTRACTOR PRIOR TO CONSTRUCTING CROSSING.
- MINIMUM GRADE OF ALL STORMWATER DRAINAGE TO BE 1 IN 200. PIPES TO BE P.V.C., F.R.C OR R.C.
- R.C. AND F.R.C PIPES SHALL BE CLASS '2', RUBBER RING JOINTED UNLESS NOTED OTHERWISE.
- MINIMUM COVER TO STORMWATER PIPES SHALL BE 300mm IN LANDSCAPED AREAS AND 600mm UNDER ROAD PAVEMENTS UNLESS NOTED OTHERWISE.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ADEQUATE EROSION AND SEDIMENTATION CONTROL DEVICES ARE ERECTED AND MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND TO THE SATISFACTION OF COUNCIL.
- CONTRACTOR TO CONFIRM LOCATION AND DEPTH OF ALL SERVICES PRIOR TO COMMENCEMENT OF ANY EXCAVATION WORKS.
- SEDIMENTATION AND EROSION CONTROL MEASURES ARE TO BE INSTALLED AT ALL DRAINAGE STRUCTURES. ALL DISTURBED AREAS ARE TO BE STABILISED AS SPECIFIED AND DIRECTED.
- IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT PROVISION IS MADE FOR THE INSTALLATION OF ALL SERVICES PRIOR TO THE CONSTRUCTION OF DRIVEWAYS, CARPARKS AND OTHER PAVED AREAS.
- THESE DRAWINGS ARE DIAGRAMMATIC ONLY AND ARE INTENDED TO INDICATE DESIGN IN ACCORDANCE WITH THE RELEVANT REGULATIONS AND REQUIREMENTS OF THE AUTHORITIES CONCERNED AND TO THE RELEVANT AUSTRALIAN STANDARDS. THEY DO NOT RELIEVE THE CONTRACTOR OR BUILDER FROM HIS RESPONSIBILITY TO COMPLY WITH THESE REQUIREMENTS, EVEN IF DRAWINGS ARE APPROVED.
- NATURAL SURFACE CONTOURS ARE COMPUTER INTERPOLATED FROM SURVEYORS ELECTRONIC FIELD DATA.

CIVIL WORKS (cont'd)

- NOT WITHSTANDING THE LIMITS OF EARTWORKS SHOWN ON THE DRAWINGS, THE ACTUAL LIMITS SHALL BE CONFIRMED ON SITE BY THE CONTRACTOR.
- PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR IS TO ASCERTAIN THE LOCATION AND LEVEL OF EXISTING SERVICES TO HIS SATISFACTION. SERVICES SHOWN ON PLANS ARE TAKEN FROM SURVEYORS FIELD NOTES ONLY AND MAY NOT NECESSARILY INDICATE ALL SERVICES WITHIN THE WORKS AREA.

ROAD PAVEMENTS

- ALL WORK TO BE COMPLETED IN ACCORDANCE WITH THE RELEVANT COUNCIL'S CONSTRUCTION MANUAL AND DESIGN GUIDELINES.
- CONTRACTOR TO CONFIRM LOCATION, DEPTH AND EXTENT OF ALL SERVICES PRIOR TO COMMENCING ANY CONSTRUCTION.
- CONTRACTOR TO GIVE COUNCIL AND LUCENA ENGINEERS 48 HOURS NOTICE FOR ALL INSPECTIONS AND PROOF ROLLING.
- CONTRACTOR TO PREPARE AND SUBMIT A TRAFFIC CONTROL PLAN TO COUNCIL PRIOR TO COMMENCING WORKS. PLAN TO BE PREPARED BY A QUALIFIED PERSON(S).
- CONTRACTOR TO GIVE NOTICE TO COUNCIL WHEN WORKS ARE TO COMMENCE PRIOR TO STARTING WORK.

EROSION AND SEDIMENT CONTROL

GENERAL INSTRUCTIONS:-

- THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, AND ANY OTHER PLANS OR WRITTEN INSTRUCTIONS THAT MAY BE ISSUED AND RELATING TO DEVELOPMENT AT THE SUBJECT SITE.
- THE SITE SUPERINTENDENT WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE LOCATED AS INSTRUCTED IN THIS SPECIFICATION.
- ALL BUILDERS AND SUB-CONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS.

CONSTRUCTION SEQUENCE:-

- THE SOIL EROSION POTENTIAL ON THIS SITE SHALL BE MINIMISED. HENCE WORKS SHALL BE UNDERTAKEN IN THE FOLLOWING SEQUENCE:-
 - INSTALL SEDIMENT FENCES.
 - UNDERTAKE SITE DEVELOPMENT WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS. PHASE DEVELOPMENT SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF WORKABLE SIZE.

EROSION AND SEDIMENT CONTROL (cont'd)

EROSION CONTROL:-

- DURING WINDY CONDITIONS, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.
- FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE AND WITHIN 20 WORKING DAYS FROM COMPLETION OF CONSTRUCTION ACTIVITIES.

FENCING:-

- STOCKPILES WILL NOT BE LOCATED WITHIN 2 METRES OF HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS. WHERE THEY ARE BETWEEN 2 AND 5 METRES FROM SUCH AREAS, SPECIAL SEDIMENT CONTROL MEASURES SHOULD BE TAKEN TO MINIMISE POSSIBLE POLLUTION TO DOWNSLOPE WATERS, E.G. THROUGH INSTALLATION OF SEDIMENT FENCING.
- ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) WILL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.
- WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE, I.E. THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE.
- TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.

OTHER MATTERS:-

- ACCEPTABLE RECEPTORS WILL BE PROVIDED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER.
- RECEPTORS FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER ARE TO BE EMPTIED AS NECESSARY. DISPOSAL OF WASTE SHALL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT.

SITE INSPECTION AND MAINTENANCE:-

- EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED AFTER RAINFALL EVENTS TO ENSURE THAT THEY OPERATE EFFECTIVELY. REPAIR AND OR MAINTENANCE SHALL BE UNDERTAKEN AS REQUIRED.

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