TNT WAREHOUSE & DISTRIBUTION FACILITY

LOCKWOOD ROAD, ERSKINE PARK, NSW

CIVIL DRAWING FOR DEVELOPMENT APPLICATION

LIST OF DRAWINGS

DRAWING NO.	DRAWING TITLE
C012156.00-DA 10	DRAWING LIST & GENERAL NOTES
C012156.00-DA 20	EROSION AND SEDIMENT CONTROL PLAN
C012156.00-DA 25	EROSION AND SEDIMENT CONTROL DETAILS
C012156.00-DA 40	CONCEPT STORMWATER DRAINAGE PLAN
C012156.00-DA 45	CONCEPT STORMWATER DETAILS - SHEET 1
C012156.00-DA 46	CONCEPT STORMWATER DETAILS - SHEET 2
C012156.00-DA 50	FINISHED LEVELS PLAN
C012156.00-DA 65	RETAINING WALL DETAILS

SITE PLAN
N.T.S

GENERAL NOTES:

G1 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. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

G2 ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT AND CURRENT STANDARDS AUSTRALIA CODES AND WITH THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES EXCEPT WHERE VARIED BY THE PROJECT SPECIFICATION.

G3 ALL DIMENSIONS SHOWN SHALL BE VERIFIED BY THE BUILDER ON SITE. ENGINEER'S DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS. ENGINEER'S DRAWINGS ISSUED IN ANY ELECTRONIC FORMAT MUST NOT BE USED FOR DIMENSIONAL SETOUT. REFER TO THE ARCHITECT'S DRAWINGS FOR ALL DIMENSIONAL SETOUT INFORMATION.

G4 DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED. TEMPORARY BRACING SHALL BE PROVIDED BY THE BUILDER TO KEEP THE WORKS AND EXCAVATIONS STABLE AT ALL TIMES.

G5 UNLESS NOTED OTHERWISE ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES.

G6 ALL WORKS SHALL BE UNDERTAKEN IN ACCORDANCE WITH ACCEPTABLE SAFETY STANDARDS & APPROPRIATE SAFETY SIGNS SHALL BE INSTALLED AT ALL TIMES DURING THE PROGRESS OF THE JOB.

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
FOR DEVELOPMENT APPLICATION	28.08.13	C
FOR DEVELOPMENT APPLICATION	27.08.13	B
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ERSKINE PARK NSW

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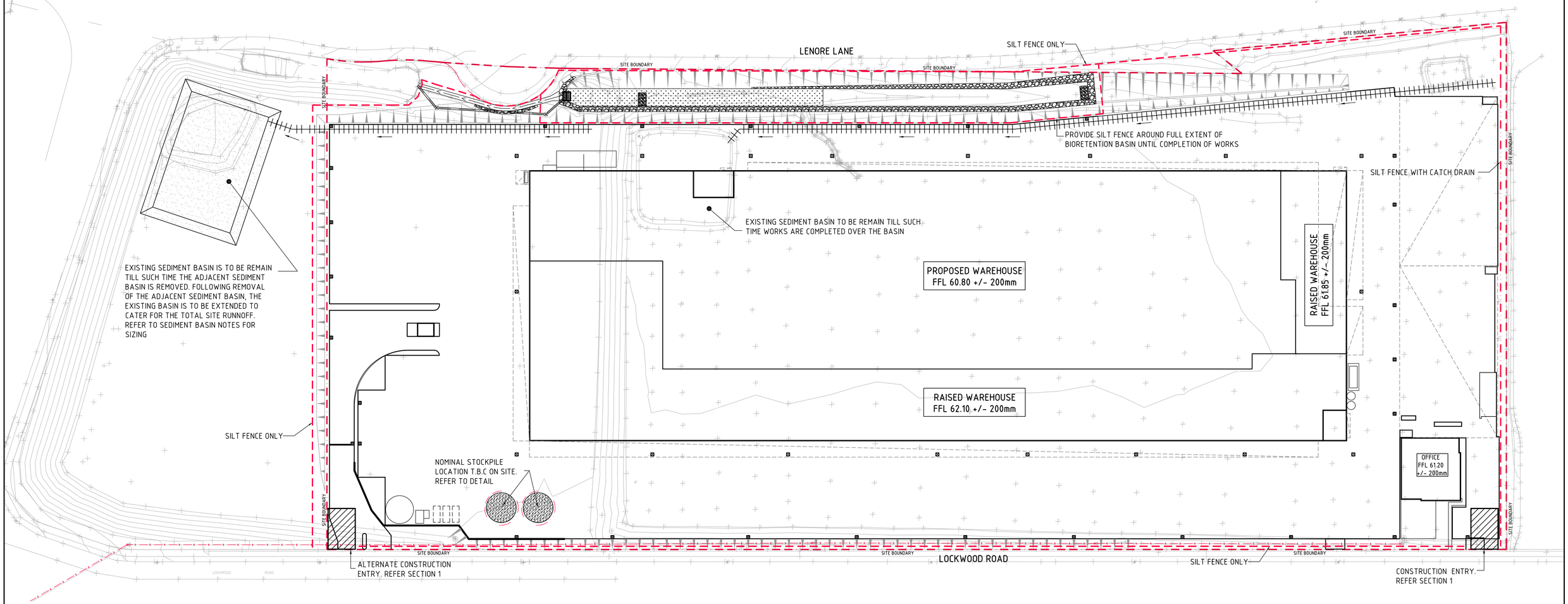
DRAWING TITLE
DRAWING LIST AND GENERAL NOTES

DRAWING No. C012156.00-DA 10 ISSUE C



EROSION AND SEDIMENT CONTROL PLAN
1:500

EROSION CONTROL NOTES

ALL CONTROL WORK INCLUDING DIVERSION BANKS AND CATCH DRAINS, V-DRAINS AND SILT FENCES SHALL BE COMPLETED DIRECTLY FOLLOWING THE COMPLETION OF THE EARTHWORKS.

1. SILT FENCES AND SILT FENCE RETURNS SHALL BE ERECTED CONVEX TO THE CONTOUR TO POND WATER.
2. HAY BALE BARRIERS AND GEOFABRIC FENCES ARE TO BE CONSTRUCTED TO TOE OF BATTER, PRIOR TO COMMENCEMENT OF EARTHWORKS, IMMEDIATELY AFTER CLEARING OF VEGETATION AND BEFORE REMOVAL OF TOP SOIL.
3. ALL TEMPORARY EARTH BERMS, DIVERSION AND SILT DAM EMBANKMENTS ARE TO BE MACHINE COMPACTED, SEEDED AND MULCHED FOR TEMPORARY VEGETATION COVER AS SOON AS THEY HAVE BEEN FORMED.
4. CLEAR WATER IS TO BE DIVERTED AWAY FROM DISTURBED GROUND AND INTO THE DRAINAGE SYSTEM.
5. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND PROVIDING ON GOING ADJUSTMENT TO EROSION CONTROL MEASURES AS REQUIRED DURING CONSTRUCTION.
6. ALL SEDIMENT TRAPPING STRUCTURES AND DEVICES ARE TO BE INSPECTED AFTER STORMS FOR STRUCTURAL DAMAGE OR CLOGGING, TRAPPED MATERIAL IS TO BE REMOVED TO A SAFE, APPROVED LOCATION.
7. ALL FINAL EROSION PREVENTION MEASURES INCLUDING THE ESTABLISHMENT OF GRASSING ARE TO BE MAINTAINED UNTIL THE END OF THE DEFECTS LIABILITY PERIOD.
8. ALL EARTHWORKS AREAS SHALL BE ROLLED ON A REGULAR BASIS TO SEAL THE EARTHWORKS.
9. ALL FILL AREAS ARE TO BE LEFT WITH A BUND AT THE TOP OF THE SLOPE AT THE END OF EACH DAYS EARTHWORKS. THE HEIGHT OF THE BUND SHALL BE A MINIMUM OF 200MM.
10. ALL CUT AND FILL SLOPES ARE TO BE SEEDED AND MULCHED WITHIN 10 DAYS OF COMPLETION OF FORMATION.
11. AFTER REVEGETATION OF THE SITE IS COMPLETE AND THE SITE IS STABLE IN THE OPINION OF A SUITABLY QUALIFIED PERSON ALL TEMPORARY WORK SUCH AS SILT FENCE, DIVERSION DRAINS ETC SHALL BE REMOVED.
12. ALL TOPSOIL STOCKPILES ARE TO BE SUITABLY COVERED TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR TO PREVENT WIND AND WATER EROSION.
13. ANY AREA THAT IS NOT APPROVED BY THE CONTRACT ADMINISTRATOR FOR CLEARING OR DISTURBANCE BY THE CONTRACTOR'S ACTIVITIES SHALL BE CLEARLY MARKED AND SIGN POSTED, FENCED OFF OR OTHERWISE APPROPRIATELY PROTECTED AGAINST ANY SUCH DISTURBANCE.
14. ALL STOCKPILE SITES SHALL BE SITUATED IN AREAS APPROVED FOR SUCH USE BY THE CONTRACT ADMINISTRATOR. A 6m BUFFER ZONE SHALL EXIST BETWEEN STOCKPILE SITES AND ANY STREAM OR FLOW PATH. ALL STOCKPILES SHALL BE ADEQUATELY PROTECTED FROM EROSION AND CONTAMINATION OF THE SURROUNDING AREA BY USE OF THE MEASURES APPROVED IN THE EROSION AND SEDIMENTATION CONTROL PLAN.
15. ACCESS AND EXIT AREAS SHALL INCLUDE SHAKE-DOWN OR OTHER METHODS APPROVED BY THE CONTRACT ADMINISTRATOR FOR THE REMOVAL OF SOIL MATERIALS FORM MOTOR VEHICLES.
16. THE CONTRACTOR IS TO ENSURE RUNOFF FROM ALL AREAS WHERE THE NATURAL SURFACE IS DISTURBED BY CONSTRUCTION, INCLUDING ACCESS ROADS, DEPOT AND STOCKPILE SITES, SHALL BE FREE OF POLLUTANTS BEFORE IT IS EITHER DISPERSED TO STABLE AREAS OR DIRECTED TO NATURAL WATERCOURSES.
17. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SLOPES, CROWNS AND DRAINS ON ALL EXCAVATIONS AND EMBANKMENTS TO ENSURE SATISFACTORY DRAINAGE AT ALL TIMES WATER SHALL NOT BE ALLOWED TO POND ON THE WORKS UNLESS SUCH PONDING IS PART OF AN APPROVED ESCP / SWMP.
18. THE CONTRACTOR SHALL INCORPORATE THE MEASURES ON THIS PLAN WITHIN THE CONTRACTORS CONSTRUCTION MANAGEMENT PLAN.

SEDIMENTATION BASIN NOTE:

SEDIMENTATION BASIN SIZING BASED ON RECOMMENDATIONS OF 'SOILS AND CONSTRUCTION, MANAGING URBAN STORMWATER-THE BLUE BOOK'.
CAPACITY BASED UPON 5 DAY RAINFALL DEPTH AT 80th PERCENTILE INTENSITY (27.40mm).

APPROXIMATE AREA OF SITE = 9.5ha

REQUIRED SETTLING ZONE VOLUME	= 1300m^3
REQUIRED SEDIMENT STORAGE ZONE VOLUME	= 650m^3
TOTAL REQUIRED BASIN VOLUME	= 1950m^3

SEDIMENTATION BASIN DIMENSIONS:

BASE DIMENSIONS (L X B)	= 30.0m x 45.0m
TOP DIMENSIONS (L X B)	= 37.2m x 52.2m
MAX SIDE SLOPE	= 1V:3H
DEPTH	= 1.2m
TOTAL VOLUME PROVIDED	= 1964m^3

SEDIMENTATION BASIN TO BE CONSTRUCTED TO DIMENSIONS AS SPECIFIED ABOVE AND TO BE FENCED.

BASIN IS TO HAVE SEDIMENT MARKER PLACED AS PER DETAIL ON DRG DA25 TO INDICATE WHEN SEDIMENT IS TO BE REMOVED. REMOVED SEDIMENT IS TO BE CLASSED AND DEWATERED PRIOR TO REMOVAL FROM SITE.

ALLOWANCE IS TO BE MADE DURING BENCHING OF SITE TO ENSURE RUN-OFF IS DIRECTED TO SEDIMENTATION BASIN.

6m 0 10 20 30 40 50 60m
SCALE 1:600 AT B1 SIZE PLOT

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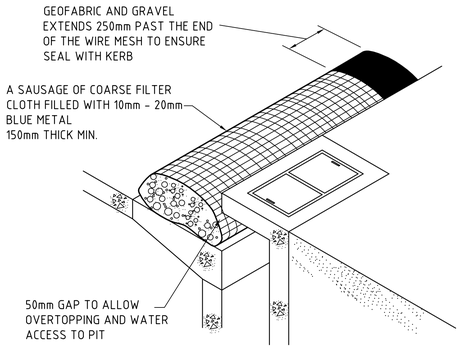
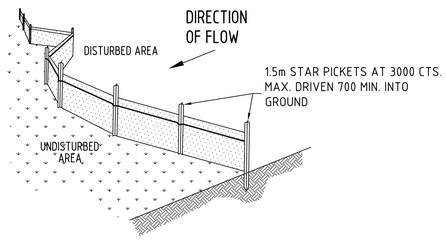
DRAWING TITLE
EROSION AND SEDIMENT CONTROL PLAN

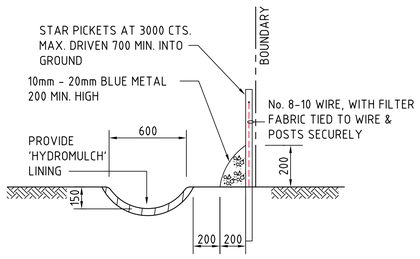
DRAWING No C012156.00-DA 20 | ISSUE B



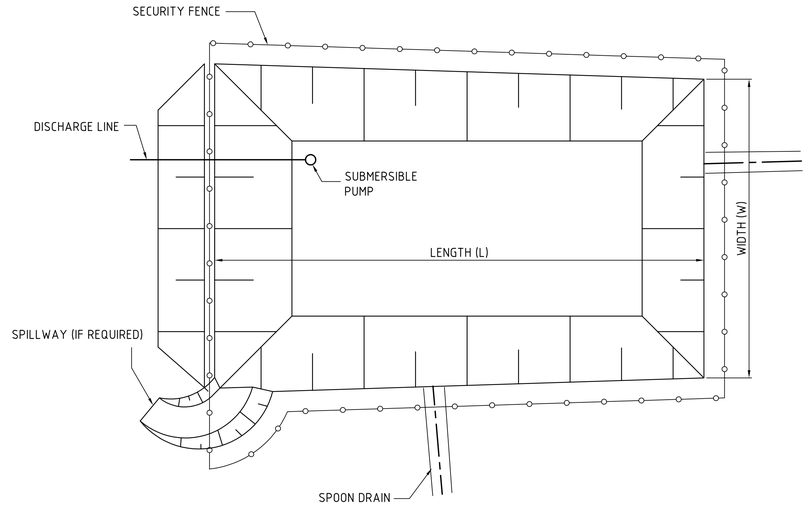
KERB INLET PIT CONTROL
N.T.S



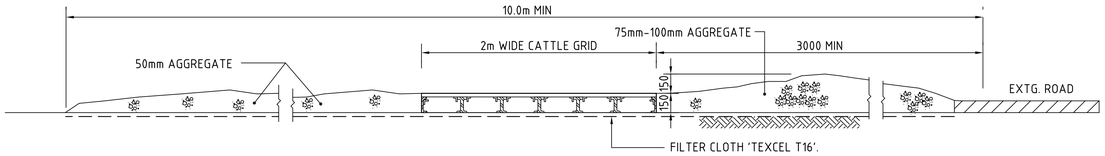
TYPICAL SILT FENCE DETAIL
N.T.S.
PROVIDE 1m RETURNS AT 30m INTERVALS.
TYPICAL



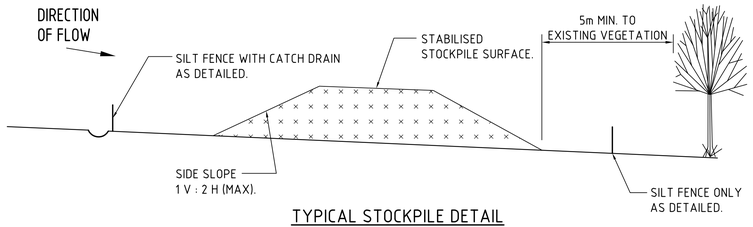
TYPICAL OPEN DRAIN & SILT FENCE
SCALE 1:20



TYPICAL SEDIMENT CONTROL POND PLAN
SCALE 1:250



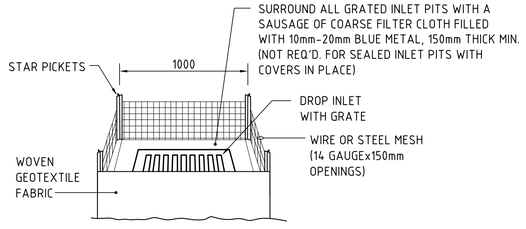
SECTION 1:20 (1 -) : STABILISED CONSTRUCTION ENTRANCE 'TRUCK SHAKER'



TYPICAL STOCKPILE DETAIL
N.T.S.

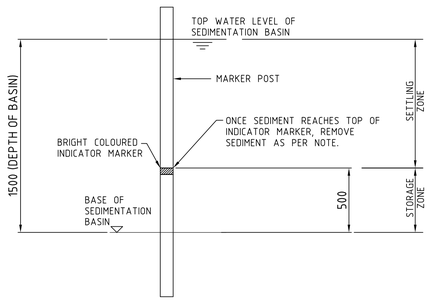
STOCKPILE NOTES

1. PLACE ALL STOCKPILES IN LOCATIONS MORE THAN 5m FROM EXISTING VEGETATION, ROADS & HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT ELONGATED MOUNDS. SIDE SLOPE TO BE 1 V: 2 H MAX.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT.
4. WHERE STOCKPILES ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE USING WOOD CHIP MULCH - 16 TONNE/Ha.
5. CONSTRUCT SILT FENCE WITH CATCH DRAIN ON UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES & SILT FENCE ONLY 1 TO 2m DOWNSLOPE AS SHOWN.

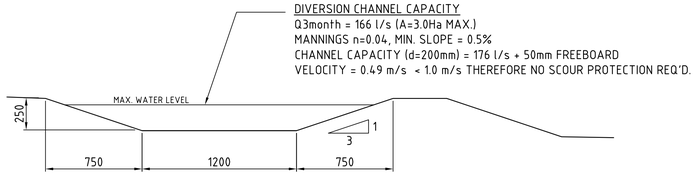


GRATED INLET PIT FILTER DETAIL
N.T.S

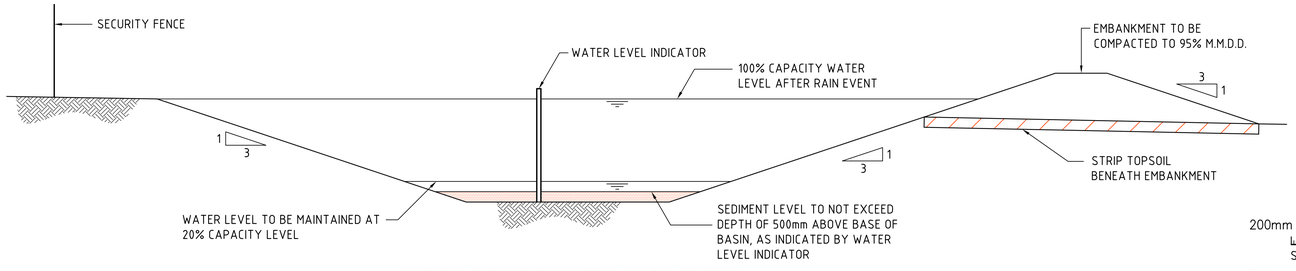
NOTE : ADOPT ABOVE DETAILS AROUND ALL PITS WITHIN AREA ENCOMPASSED BY SILT FENCE & TO PITS ON THE ROAD ADJACENT TO SITE BOUNDARY.



SEDIMENT STORAGE MARKER
SCALE 1:20



TYPICAL DIVERSION DRAIN SECTION
SCALE 1:20



TYPICAL SEDIMENT CONTROL BASIN SECTION
SCALE 1:50

200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT B1 SIZE PLOT

500mm 0 1 2 3 4 5m
SCALE 1:50 AT B1 SIZE PLOT

2m 0 5 10 15 20 25m
SCALE 1:250 AT B1 SIZE PLOT

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
FOR DEVELOPMENT APPLICATION	27.08.13	B
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DRAWING TITLE
EROSION AND SEDIMENT CONTROL DETAILS

DRAWING No C012156.00-DA 25 | ISSUE B

LENORE LANE

SITE BOUNDARY

BIO-RETENTION BASIN
BE LEVEL = FFL-850mm

HARDSTAND
BE LEVEL = FFL-280mm

WAREHOUSE
BE LEVEL = 60.60mAHD +/-200mm
(BE LEVEL = FFL-200mm)

RAISED WAREHOUSE
BE LEVEL = 61.90mAHD +/-200mm
(BE LEVEL = FFL-200mm)

RAISED WAREHOUSE
BE LEVEL = 61.65mAHD +/-200mm
(BE LEVEL = FFL-200mm)

CARPARK
BE LEVEL = FFL-280mm

OFFICE
BE LEVEL = FFL-200mm
BE LEVEL = 61.00mAHD

LOCKWOOD ROAD

BULK EARTHWORKS PLAN
1:500

LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY LAND PARTNERS DATED 01.07.08.

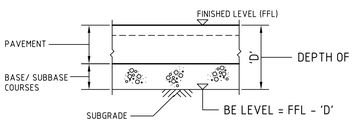
- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- KIP, KERB INLET PIT
- GRATED DRAIN (300 WIDE UNO)
- 50.00 – FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- 50.10 – FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
- 50.12 – FINISHED PAVEMENT CHANGE IN GRADE

SITE PREPARATION NOTES:

1. ALL EARTHWORKS SHALL BE COMPLETED GENERALLY IN ACCORDANCE WITH THE GUIDELINES SPECIFIED BY THE GEOTECHNICAL REPORT.
2. EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED NY LAND PARTNERS DATED 01.07.08
3. STRIP ANY TOP SOIL OR DELETERIOUS MATERIAL AND DISPOSE OF FROM SITE OR STORE AS DIRECTED.
4. COMPLETE CUT TO FILL EARTHWORKS TO ACHIEVE THE REQUIRED LEVELS AS INDICATED ON THE DRAWINGS WITHIN A TOLERANCE OF +0mm/-20mm THROUGH BUILDING PADS/PAVEMENTS AND +0mm/-50mm ELSEWHERE.
5. PREPARE STEEP BATTERS TO RECEIVE FILL BY CONSTRUCTING BENCHING TO FACILITATE FILL PLACEMENT AND COMPACTION.
6. AREAS TO RECEIVE FILL (THAT ARE NOT ON BENCHED BATTERS) AND AREAS IN CUT SHALL BE PROOF ROLLED TO IDENTIFY ANY SOFT HEAVING MATERIAL. SOFT MATERIAL SHALL BE BOXED OUT AND REMOVED PRIOR TO FILL PLACEMENT.
7. SITE WON FILL TO BE PLACED IN MAXIMUM 300mm LOOSE LAYERS AND COMPACTED TO 100% STANDARD AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT.
8. IMPORTED FILL SHALL BE PLACED IN MAXIMUM 300mm LOOSE LAYERS AND COMPACTED TO 100% STANDARD AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT.
9. MAXIMUM PARTICLE SIZE TO BE THE SMALLER OF 150mm OR HALF THE (LOOSE) LAYER THICKNESS AND/OR TWO THIRDS THE LAYER THICKNESS AFTER COMPACTION.
10. ALL EARTHWORKS SHALL BE COMPLETED UNDER LEVEL 1 CONTROL IN ACCORDANCE WITH AS 3798-2007.
11. PRIOR TO ANY EARTHWORKS, EROSION CONTROL AS OUTLINED IN THE EROSION AND SEDIMENTATION CONTROL PLAN SHALL BE COMPLETED.
12. EXISTING ROCK, IF ANY, SHALL BE REMOVED BY HEAVY ROCK BREAKING OR RIPPING.
13. MATCH EXISTING LEVELS AT BATTER INTERFACE.
14. CONTRACTOR TO MATCH EXISTING LEVELS AT THE INTERFACE OF EARTHWORKS AND EXISTING SURFACE AT BATTER LOCATIONS OR WHERE NO RETAINING WALLS ARE PRESENT. ANY DISCREPANCY BETWEEN DESIGN AND EXISTING LEVELS TO BE REFERRED TO THE ENGINEER FOR DIRECTION OR ADJUSTMENTS TO DESIGN LEVELS.

BULK EARTHWORKS NOTE

BULK EARTHWORKS PLAN TO BE READ IN CONJUCNTION WITH FINISHED LEVELS PLAN. CONTRACTOR TO ALLOW FOR BULK EARTHWORKS LEVELS AS NOTED ON PLAN. BULK EARTHWORKS LEVEL DEPTH INDICATIVE ONLY.
REFER TO STRUCTURAL DRAWINGS FOR FINAL PAVEMENT DEPTHS.



B.E.L. DETAIL
N.T.S.

5m 0 10 20 30 40 50m
SCALE 1:500 AT B1 SIZE PLOT

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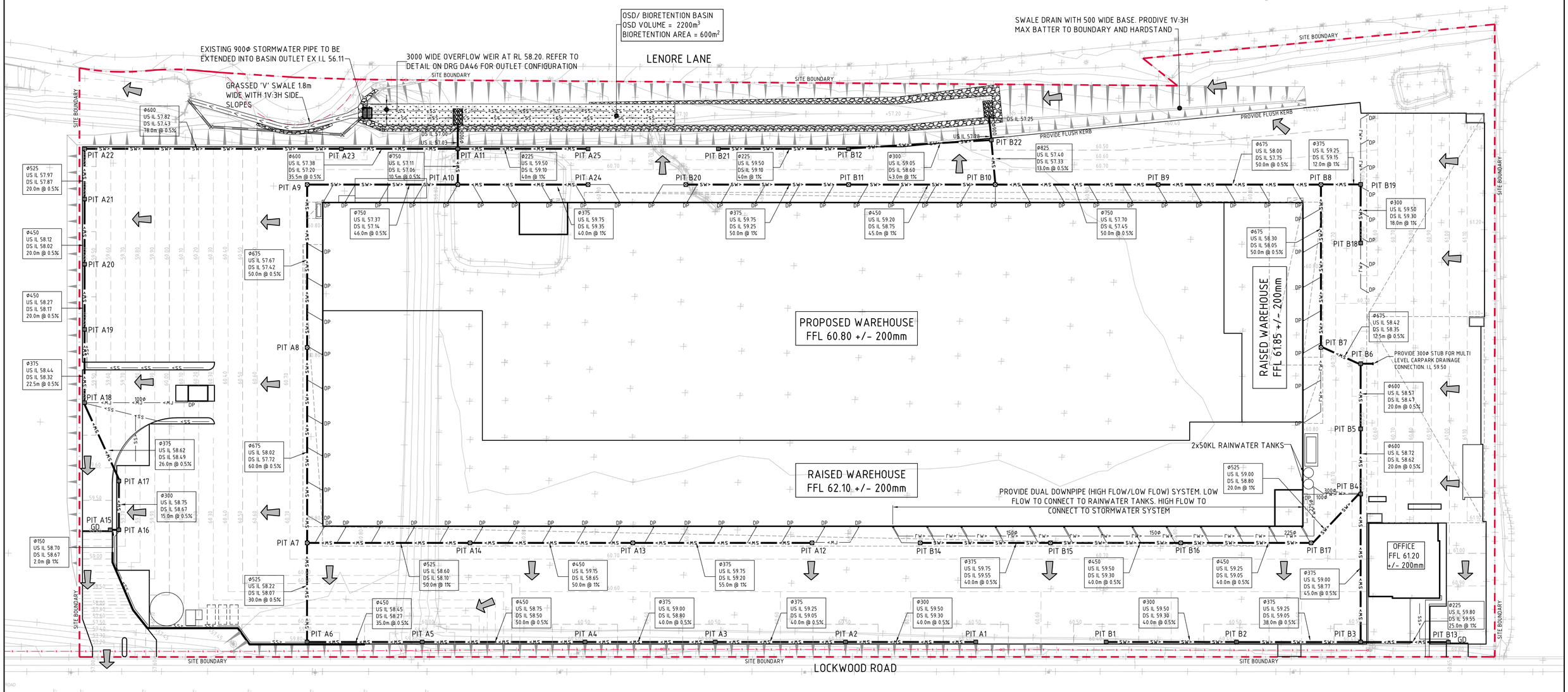
DRAWING TITLE
BULK EARTHWORKS PLAN

DRAWING No C012156.00-DA30 | ISSUE A



STORMWATER DRAINAGE NOTES:

1. ALL FINISHED PAVEMENT LEVELS SHALL BE AS INDICATED ON FINISHED LEVELS PLAN.
2. PIT SIZES SHALL BE AS INDICATED IN THE SCHEDULE WHILE PIPE SIZES AND DETAILS ARE PROVIDED ON PLAN.
3. EXISTING STORMWATER PIT LOCATIONS AND INVERT LEVELS TO BE CONFIRMED BY SURVEY PRIOR TO COMMENCING WORKS ON SITE.
4. ALL STORMWATER PIPES ϕ375 OR GREATER SHALL BE CLASS 2 REINFORCED CONCRETE WITH RUBBER RING JOINTS UNLESS NOTED OTHERWISE.
5. ALL PIPES UP TO AND INCLUDING 300ϕ TO BE uPVC GRADE SN8.
6. ALL CONCRETE PITS GREATER THAN 1000mm DEEP SHALL BE REINFORCED USING N12-200 EACH WAY CENTRED IN WALL AND BASE. LAP MINIMUM 300mm WHERE REQUIRED. ALL CONCRETE FOR PITS SHALL BE F'c 25 MPA. PRECAST PITS MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
7. IN ADDITION TO ITEM 6 ABOVE, ALL CONCRETE PITS GREATER THAN 3000mm DEEP SHALL HAVE WALLS AND BASE THICKNESS INCREASED TO 200mm.
8. PIPES SHALL BE LAID AS PER PIPE LAYING DETAILS. PARTICULAR CARE SHALL BE TAKEN TO ENSURE THAT THE PIPE IS FULLY AND EVENLY SUPPORTED. RAM AND PACK FILLING AROUND AND UNDER BACK OF PIPES AND PIPE FAUCETS, WITH NARROW EDGED RAMMERS OR OTHER SUITABLE TAMPING DETAILS.
9. WHERE PIPE LINES ENTER PITS, PROVIDE 2m LENGTH OF STOCKING WRAPPED SLOTTED ϕ100 uPVC TO EACH SIDE OF PIPE.
10. ALL SUBSOIL DRAINAGE LINES SHALL BE ϕ100 SLOTTED uPVC WITH APPROVED FILTER WRAP LAID IN 300mm WIDE GRANULAR FILTER UNLESS NOTED OTHERWISE. LAY SUBSOIL LINES TO MATCH FALLS OF LAND AND/OR 1 IN 200 MINIMUM. PROVIDE CAPPED CLEANING EYE (RODDING POINT) AT UPSTREAM END OF LINE AND AT 30m MAX. CTS. PROVIDE SUBSIOL LINES TO ALL PAVEMENT/ LANSCAPED INTERFACES, TO REAR OF RETAINING WALLS (AS NOMINATED BY STRUCUTRAL ENGINEER) AND AS SHOWN ON PLAN.
11. ALL PIPE GRADES 1 IN 100 MINIMUM UNO.
11. PROVIDE STEP IRONS IN PITS DEEPER THAN 1000mm.
13. MIN. 600 COVER TO PIPE OBVERT BENEATH ROADS & MIN. 400 COVER BENEATH LANDSCAPED AND PEDESTRIAN AREAS.
14. PIT COVERS IN TRAFFICABLE PAVEMENT SHALL BE CLASS D 'HEAVY DUTY', THOSE LOCATED IN NON-TRAFFICABLE AREAS SHALL BE CLASS B 'MEDIUM DUTY' U.N.O.
15. PROVIDE CLEANING EYES (RODDING POINTS) TO PIPES AT ALL CORNERS AND T-JUNCTIONS WHERE NO PITS ARE PRESENT.
16. DOWN PIPES TO BE AS PER HYDRAULIC ENGINEERS DETAILS WITH CONNECTOR TO MATCH DP SIZE U.N.O. ON PLAN. PROVIDE CLEANING EYE AT GROUND LEVEL.
17. PIPE LENGTHS NOMINATED ON PLAN OR LONGSECTIONS ARE MEASURED FROM CENTER OF PITS TO THE NEAREST 0.5m AND DO NOT REPRESENT ACTUAL LENGTH. THE CONTRACTOR IS TO ALLOW FOR THIS.
18. GRATED DRAINS ARE TO BE 200mm MIN. WIDE & 150mm MIN. DEEP (REFER TO SCHEDULE) WITH CLASS D GRATE. PROVIDE 1% FALL TO OUTLET.

CONCEPT STORMWATER PLAN

1:500

PIT SCHEDULE - SYSTEM A

PIT No.	GRATE RL	DEPTH	TYPE	SIZE	COMMENT
PIT A1	60.40	900	SGGP	900x900	⊕
PIT A2	60.40	1150	SGGP	900x900	⊕
PIT A3	60.40	1400	SGGP	900x900	⊕
PIT A4	60.40	1650	SGGP	900x900	⊕
PIT A5	59.80	1350	SGGP	900x900	⊕
PIT A6	59.80	1580	SGGP	900x900	⊕
PIT A7	60.75	2730	SJP	900x900	
PIT A8	60.75	3080	SJP	900x900	
PIT A9	60.75	3380	SJP	900x900	
PIT A10	60.75	3640	SJP	900x900	
PIT A11	60.75	3470	SGGP	1200x1200	⊕
PIT A12	60.75	1000	SJP	900x900	
PIT A13	60.75	1600	SJP	900x900	
PIT A14	60.75	2150	SJP	900x900	
PIT A15	59.40	700	SGGP	600x600	⊕
PIT A16	59.65	900	SGGP	900x900	⊕
PIT A17	59.65	1030	SGGP	900x900	⊕
PIT A18	59.40	960	SGGP	900x900	⊕
PIT A19	59.40	1130	SGGP	900x900	⊕
PIT A20	59.40	1280	SGGP	900x900	⊕
PIT A21	59.40	1430	SGGP	900x900	⊕
PIT A22	59.40	1580	SGGP	900x900	⊕
PIT A23	60.50	3120	SGGP	900x900	⊕
PIT A24	60.75	1000	SJP	900x900	
PIT A25	60.50	1000	SGGP	900x900	⊕

⊕ -DENOTES FIT TO BE FITTED WITH STORMWATER 360 ENVIROPOD UNIT

PIT SCHEDULE - SYSTEM B

PIT No.	GRATE RL	DEPTH	TYPE	SIZE	COMMENT
PIT B1	60.40	900	SGGP	900x900	⊕
PIT B2	60.40	1150	SGGP	900x900	⊕
PIT B3	60.40	1400	SGGP	900x900	⊕
PIT B4	60.50	1780	SGGP	900x900	⊕
PIT B5	60.50	1930	SGGP	900x900	⊕
PIT B6	60.50	2080	SGGP	900x900	⊕
PIT B7	60.75	2450	SJP	900x900	
PIT B8	60.75	2750	SJP	900x900	
PIT B9	60.75	3050	SJP	900x900	
PIT B10	60.75	3350	SJP	900x900	
PIT B11	60.75	1550	SJP	1200x1200	
PIT B12	60.50	1450	SGGP	900x900	⊕
PIT B13	60.72	920	SGGP	600x600	⊕
PIT B14	60.75	1000	SJP	900x900	
PIT B15	60.75	1250	SJP	900x900	
PIT B16	60.75	1500	SJP	900x900	
PIT B17	60.75	1750	SJP	900x900	
PIT B18	60.50	1000	SGGP	900x900	⊕
PIT B19	60.50	1250	SGGP	900x900	⊕
PIT B20	60.75	1000	SJP	900x900	
PIT B21	60.50	1000	SGGP	900x900	⊕
PIT B22	60.40	3120	SGGP	1200x1200	⊕

⊕ -DENOTES FIT TO BE FITTED WITH STORMWATER 360 ENVIROPOD UNIT

LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY LAND PARTNERS DATED AUG 2013.

- ⊠ - SJP, SEALED JUNCTION PIT
- ▤ - SGGP, SINGLE GRATED GULLY PIT
- GD - GRATED DRAIN 200 WIDE
- sw> - DRAINAGE LINE
- ss> - SUBSOIL LINE
- EXISTING DRAINAGE PIPE
- EXISTING SEWER
- rw> - ROOFWATER LINE
- OVERLAND FLOW PATH
- ° DP - DOWNPIPE (INDICATIVE ONLY)
- 883.00 - FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- 883.10 - FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
- +883.30 - FINISHED PAVEMENT SPOT HEIGHT

FOR DEVELOPMENT APPLICATION

5m 0 10 20 30 40 50m

SCALE 1:500 AT B1 SIZE PLOT

AMENDMENTS	DATE	ISSUE
FOR DEVELOPMENT APPLICATION	27.08.13	C
FOR INFORMATION ONLY	23.08.13	B
FOR INFORMATION ONLY	22.08.13	A

ARCHITECT

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PROJECT
TNT WAREHOUSE & DISTRIBUTION FACILITY
ERSKINE PARK NSW

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
MW	MJC	13.08.13		B1	AS SHOWN	C012156.00-DA40

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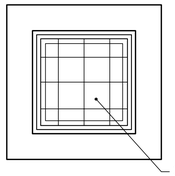
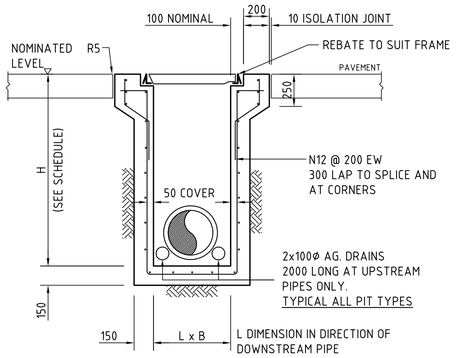
DRAWING TITLE
CONCEPT STORMWATER PLAN

DRAWING No C012156.00-DA 40

ISSUE C

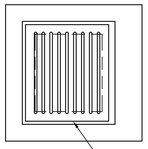


PLAN
SCALE 1:20

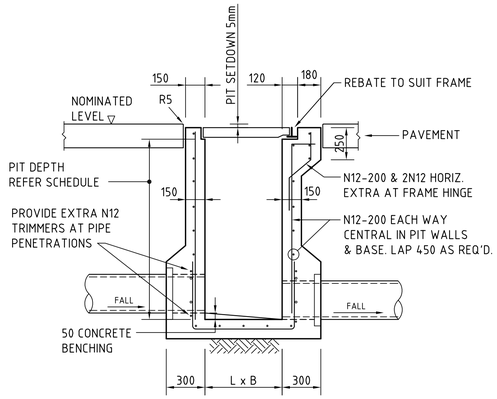


SECTION
SCALE 1:20

SEALED PIT - SJP



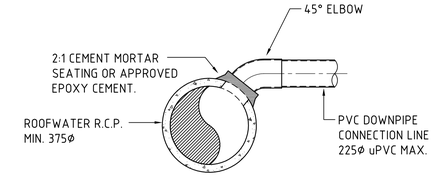
PLAN
SCALE 1:20



SEE SCHEDULE
L DIMENSION IN DIRECTION OF DOWNSTREAM PIPE

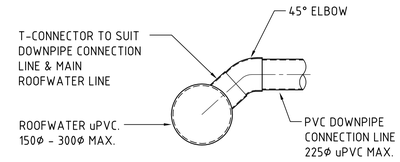
SECTION
SCALE 1:20

SINGLE GRATED GULLY PIT - SGGP



DOWN PIPE CONNECTION TO R.C.P. PIPE

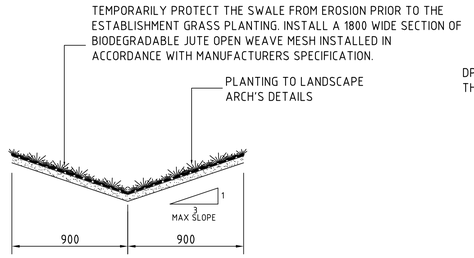
1. THE R.C. STORMWATER PIPE SHALL BE PIERCED BY A NEAT OPENING TO ALLOW THE CONNECTION OF A PVC. PIPE.
2. THE EXPOSED R.C. PIPE REINFORCEMENT IS TO BE BENT OUTWARDS TO RETAIN THE MORTARTED JOINT.
3. THE PVC PIPE SHALL NOT PROTUDE BEYOND THE INNER SURFACE OF THE R.C. STORMWATER PIPE.
4. THE INTERNAL JUNCTION SHALL BE SMOOTHLY FINISHED SO AS TO PRESENT NO OBSTRUCTION WITHIN THE INTERNAL CHANNEL OF THE R.C. STORMWATER PIPE.
5. PROPRIETARY SADDLES MAY BE USED FOR THE CONNECTION SEATING. THE CONTRACTOR IS TO PROVIDE DETAILS OF THE PROPOSED CONNECTION TO THE ENGINEER FOR APPROVAL.



DOWN PIPE CONNECTION TO uPCV PIPE

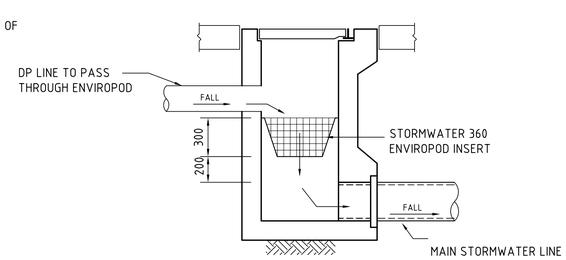
1. PROPRIETARY T-PIECE CONNECTORS SHALL BE USED TO WHERE DIRECT CONNECTIONS ARE REQUIRED TO uPVC PIPES .
2. ALL JOINTS TO BE SEALED WITH SOLVENT WELDED JOINTS.
3. THE PVC PIPE SHALL NOT PROTUDE BEYOND THE INNER SURFACE OF THE STORMWATER PIPE.

DOWNPIPE CONNECTION DETAILS
SCALE 1:20

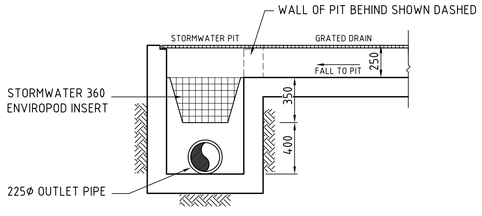


TYPICAL GRASSED DRAINAGE 'V' SWALE DETAIL
1:20

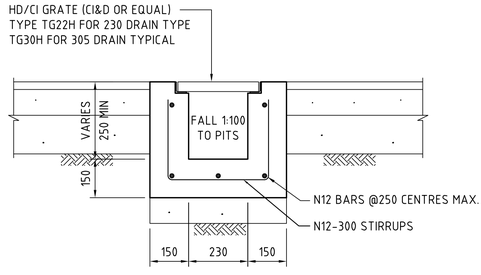
ADOPT AS REQUIRED



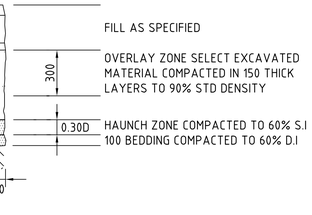
ROOFWATER/STORMWATER PIT WITH ENVIROPOD CONFIGURATION
SCALE 1:20



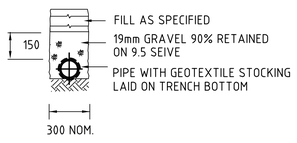
GRATED DRAIN/STORMWATER PIT WITH ENVIROPOD CONFIGURATION
SCALE 1:20



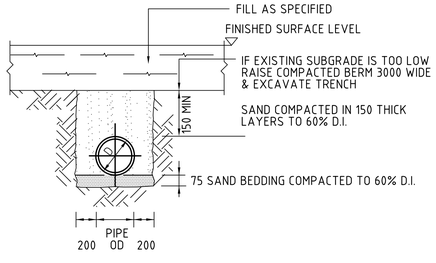
TYPICAL GRATED DRAIN DETAIL
SCALE 1:10



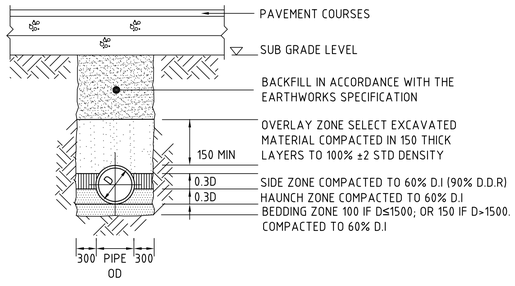
TYPE H1 SUPPORT TO CONCRETE PIPES AT LANDSCAPED AREAS



SUPPORT TO AG. DRAIN



SUPPORT TO uPVC PIPES



TYPE HS2 SUPPORT TO CONCRETE PIPES UNDER PAVEMENT

D≤ 1350, MAX FILL = 4.0m
D> 1350, MAX FILL = 3.0m

SIDE ZONE MATERIAL GRADING	
SIEVE SIZE	WEIGHT PASSING(%)
75 9.5 2.36 0.60 0.075	100 100 TO 50 100 TO 30 50 TO 15 25 TO 0

BEDDING & HAUNCH MATERIAL GRADING	
SIEVE SIZE	WEIGHT PASSING(%)
19 2.36 0.60 0.30 0.15 0.075	100 100 TO 50 90 TO 50 60 TO 10 25 TO 0 10 TO 0

PIPE LAYING DETAILS
1:20

100mm 0 200 400 600 800 1000mm
SCALE 1:10 AT B1 SIZE PLOT

200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT B1 SIZE PLOT

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
FOR DEVELOPMENT APPLICATION	27.08.13	B
FOR INFORMATION ONLY	22.08.13	A

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PROJECT
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ERSKINE PARK NSW

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
MW	MJC	13.08.13		B1	AS SHOWN	C012156.00-DA45

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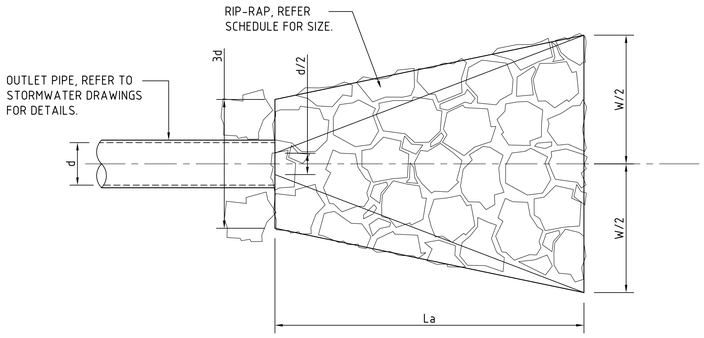
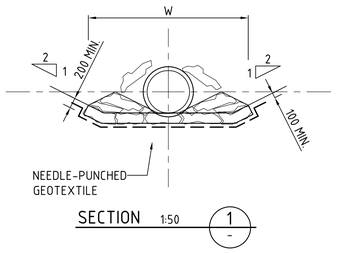
DRAWING TITLE
CONCEPT STORMWATER DETAILS

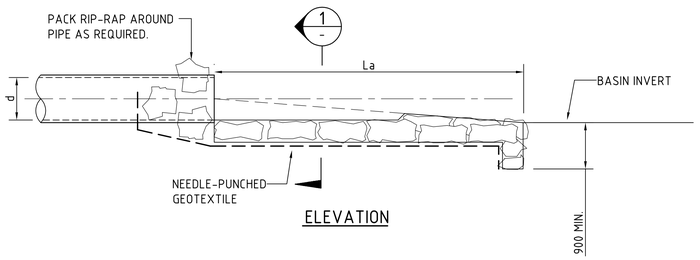
DRAWING No C012156.00-DA 45 | ISSUE B



PLAN VIEW



SECTION 1:50 (1)



ELEVATION

DISSIPATER NOTES:

1) ALIGN STRUCTURE EVENLY WITH BANK.
2) LOCATE STRUCTURE AT INVERT LEVEL OF BASIN .
3) PIPE TO REST ON, AND BE PACKED IN, BY RIP-RAP (SIZE AS NOTED).
4) RIP-RAP TO CONSIST OF ANGULAR RUN-OF-QUARRY ROCK AS NOTED PLACED OVER A 200mm LAYER OF 140mm COBBLES OVER NEEDLE-PUNCHED GEOFAB A44.
5) GAPS IN RIP-RAP TO BE PLANTED WITH NATIVE SEDGES & RUSHES.

DISSIPATER SCHEDULE				
DISCHARGE POINT	d	La	W	RIP-RAP
OUTLET TYPE 1	900	4000	3000	200

OSD BASIN DETAILS

SITE AREA
TOTAL SITE AREA 78 642m^2

TOTAL SITE AREA DRAINING TO STORAGE (90% IMPERVIOUS) 73 850m^2

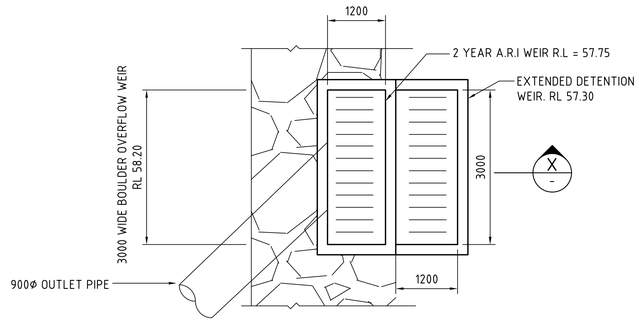
STORAGE

LOW FLOW ORIFICE ø 590mm
VOLUME PROVIDED 2200m^3

ON SITE DETENTION - HYDROLOGIC DETAILS

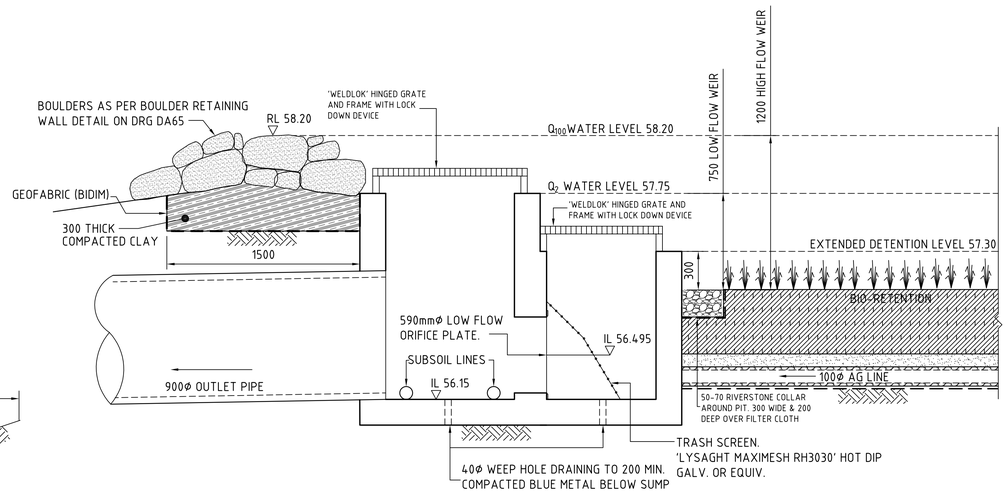
ARI (yrs)	StormDuration (hrs)	Flow (m^3/s)		
		Pre-Devel.	Post Devel. (un-attenuated)	Post Devel. (with attenuation)
2	2	0.65	1.53	0.49
20	2	1.81	2.68	1.45
100	2	2.34	3.34	2.17

REFER TO CIVIL REPORT Co12156.00-03.rpt FOR DETAILED OSD INFORMATION



OUTLET CONTROL PIT FOR OSD BASIN - PLAN
SCALE 1:50

STORMWATER OUTLET DISSIPATER
SCALE 1:50



OUTLET CONTROL PIT FOR OSD BASIN - SECTION 1:20 (X)

BIO-RETENTION NOTES:

FILTER MEDIA TO BE LOAMY SAND WITH A PERMEABILITY NOT LESS THAN 200mm/hr. FILTER MEDIA TO BE FREE OF RUBBISH, DELETERIOUS MATERIAL, TOXICANTS, DECLARED PLANTS AND LOCAL WEEDS, AND IS TO NOT BE HYDROPHOBIC.

FILTER MEDIA TO HAVE THE FOLLOWING COMPOSITION RANGE:

CLAY & SILT (<0.05mm)	<3%
VERY FINE SAND (0.05-0.15mm)	5-30%
FINE SAND (0.15-0.25mm)	10-30%
MEDIUM TO COARSE SAND (0.25-1.00mm)	40-60%
COARSE SAND (1.0-2.0mm)	7-10%
FINE GRAVEL (2.0-3.4mm)	<3%

FILTER MEDIA THAT DOES NOT MEET THE FOLLOWING CRITERIA SHALL BE REJECTED:
a. ORGANIC MATTER CONTENT TO BE IDEALLY WITHIN 1% TO 3% (W/W) AND TO BE NO GREATER THAN 5%(W/W).
b. PH TO BE BETWEEN 5.5 AND 7.5
c. PHOSPHOROUS CONTENT TO BE NO GREATER THAN 35mg/kg

FILTER MEDIA TO BE ASSESSED BY QUALIFIED HORTICULTURALIST TO ENSURE CAPABILITY OF SUPPORTING PLANT LIFE.

DRAINAGE LAYER TO BE CLEAN GRAVEL 5-7mm.

PLANTS TO BE IN ACCORDANCE WITH PENRITH CITY COUNCIL & LANDSCAPE ARCHITECT.

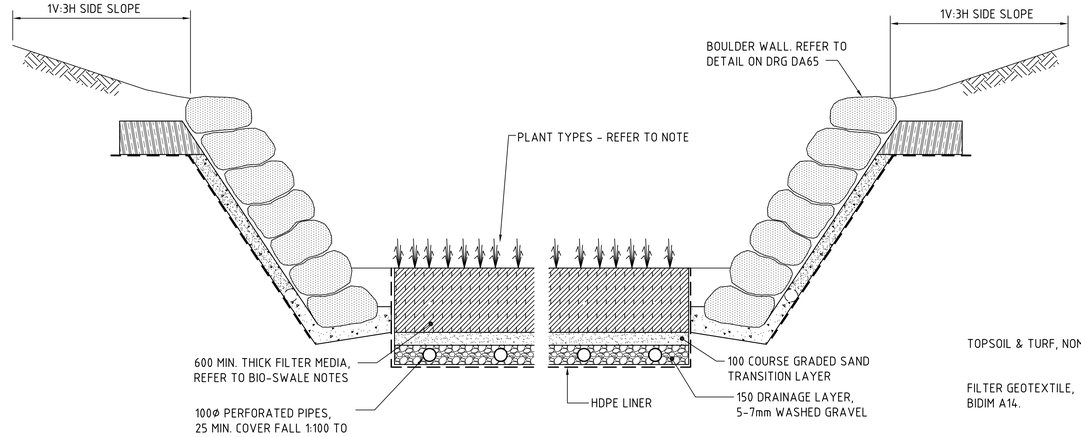
PROVIDE 100mm TOPSOIL AND TEMPORARY EROSION PROTECTION (JUTEMASTER OR EQUIV) TO SWALE BATTER SLOPES AND ADJACENT LANDSCAPED AREAS. NOTE THAT NO TOPSOIL IS TO BE PLACED OVER FILTRATION MEDIA. PROVIDE SILT FENCE TO TOP OF BANK UNTIL SUCH TIME AS THIS STABILISING AND VEGETATION HAS BEEN COMPLETED.

BIO-RETENTION TO BE PARTIALLY INSTALLED, FOLLOWING COMPLETION OF THE ROAD, WITH THE TOP 75-100mm OF FILTER MEDIA REPLACED WITH A FINE TO COARSE SAND UNDERLAIN WITH A GEOTEXTILE LAYER (REFER TO DETAIL). FOLLOWING COMPLETION OF THE UPSTREAM DEVELOPMENT AND SITE STABILISATION, THE SAND IS TO BE REMOVED, REPLACED WITH FILTER MATERIAL AND PLANTED OUT. REFER TO TEMPORARY BIO-BASIN DETAIL

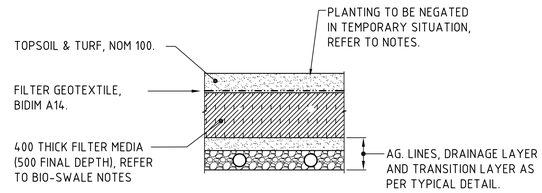
PRIOR TO PLANTING, THE TOP 100mm OF THE BIORETENTION FILTER MEDIA IS TO BE AMELIORATED WITH APPROPRIATE ORGANIC MATTER, FERTILISER AND TRACE ELEMENTS TO AID PLANT ESTABLISHMENT AS PER THE TABLE BELOW:

TABLE: RECIPE FOR AMELIORATING TOP 100mm OF BIORETENTION FILTER MEDIA

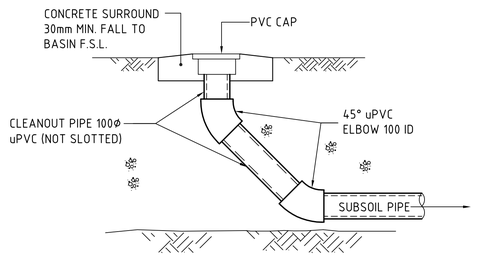
CONSTITUENT	QUANTITY (kg/m2 OF FILTER AREA)
GRANULATED POULTRY MANURE FINES	50
SUPERPHOSPHATE	2
MAGNESIUM SULPHATE	3
POTASSIUM SULPHATE	2
TRACE ELEMENT MIX	1
FERTILISER NPK (16.4.14)	4
LIME	20



TYPICAL BIO-RETENTION DETAIL
SCALE 1:20



TEMPORARY BIO-RETENTION PROTECTION DETAIL
SCALE 1:20
TEMPORARY CONSTRUCTION REQUIREMENT DETAIL - REFER TO NOTES FOR IMPLIMENTATION PERIODS.



CLEANOUT EYE ELEVATION
SCALE 1:20
DENOTED C.E. ON PLAN

500mm 0 1 2 3 4 5m
SCALE 1:50 AT B1 SIZE PLOT

200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT B1 SIZE PLOT

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
FOR DEVELOPMENT APPLICATION	27.08.13	B
FOR INFORMATION ONLY	22.08.13	A

AMENDMENTS DATE ISSUE

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TNT WAREHOUSE & DISTRIBUTION FACILITY
ERSKINE PARK NSW

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
MW	MJC	13.08.13		B1	AS SHOWN	C012156.00-DA46

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DRAWING TITLE
CONCEPT STORMWATER DETAILS SHEET 2

DRAWING No C012156.00-DA 46 ISSUE B

EXISTING STORMWATER PIPE TO BE UTILIZED IN BASIN OUTLET (T.B.C)

BOULDER RETAINING WALL
MAX HEIGHT = 1000
APPROX AREA = 20m²

OSD/ BIORETENTION BASIN
OSD VOLUME = 2200m³
BIORETENTION AREA = 600m²
BASIN FSL = 57.00

1V:3H BATTER FROM BOUNDARY

LENORE LANE

BOULDER RETAINING WALL
MAX HEIGHT = 3000
APPROX AREA = 700m²

SWALE DRAIN WITH 500 WIDE BASE. PRODIVE 1V:3H MAX BATTER TO BOUNDARY AND HARDSTAND

SITE BOUNDARY

1V:3H BATTER

PROPOSED WAREHOUSE
FFL 60.80 +/- 200mm

RAISED WAREHOUSE
FFL 61.85 +/- 200mm

RAISED WAREHOUSE
FFL 62.10 +/- 200mm

OFFICE
FFL 61.20
+/- 200mm

1V:3H TEMP BATTER TO ADJACENT PAD

START KEYSTONE RET WALL

KEYSTONE RET WALL
MAX HEIGHT = 2800m
APPROX AREA = 140m²

END KEYSTONE RET WALL

1V:3H MAX BATTER TO BOUNDARY

PROVIDE FLUSH KERB

LOCKWOOD ROAD

LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY LAND PARTNERS DATED 01.07.08.

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- 50.00 – FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- 50.10 – FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
- +50.10 – FINISHED LEVEL SPOT HEIGHT
- 37.5 – EXISTING CONTOUR
- +37.87 – EXISTING SPOT HEIGHT
- <M.S – DRAINAGE PIPE

FINISHED LEVELS PLAN NOTES:

1. LEVELS DATUM IS A.H.D.
2. ALL CONTOUR LINES & SPOT LEVELS INDICATE FINISHED PAVEMENT LEVELS U.N.O. ON PLAN.
3. THE MAJOR CONTOUR INTERVAL IS 0.5m
4. THE MINOR CONTOUR INTERVAL IS 0.1m.
5. MINIMUM PAVEMENT GRADE IS TO BE 1:100 (1%).
6. MAXIMUM PAVEMENT GRADE IS TO BE 1:20 (5%) IN CARPARKING AREAS AND 1:25 (4%) ELSEWHERE.
7. MAXIMUM RAMP GRADES ARE TO BE 1:12 (8.3%) U.N.O. ON PLAN
8. PROVIDE MINIMUM 3.0m LONG TRANSITION WHERE CHANGES GRADE EXCEDE 1:20 (5%).
9. PERMANENT BATTER SLOPES ARE TO HAVE A MAXIMUM GRADE OF 1V:3H.
10. ALL BATTER SLOPE WITH GRADES AT OR EXCEDING 1V:6H ARE TO BE TURFED IMMEDIATELY OR APPROPRIATE EROSION CONTROL IS TO BE PROVIDED TO THE SATISFACTION OF THE ENGINEER.
11. ALL FOOTPATHS ARE TO FALL AWAY FROM THE BUILDING AT 2.5% NOMINAL. GRADE.
12. ALL PAVEMENTS ARE TO BE SET AT 50mm BELOW THE FINISHED FLOOR LEVEL OF THE WAREHOUSE AND OFFICE AREAS.

FINISHED LEVELS PLAN
1:500

FOR DEVELOPMENT APPLICATION

5m 0 10 20 30 40 50m
SCALE 1:500 AT B1 SIZE PLOT

AMENDMENTS	DATE	ISSUE
FOR DEVELOPMENT APPLICATION	27.08.13	D
FOR INFORMATION ONLY	23.08.13	C
FOR INFORMATION ONLY	22.08.13	B
FOR INFORMATION ONLY	13.08.13	A

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PROJECT
TNT WAREHOUSE & DISTRIBUTION FACILITY
ERSKINE PARK NSW

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
MW	MJC	13.08.13		B1	AS SHOWN	C012156.00-DA50

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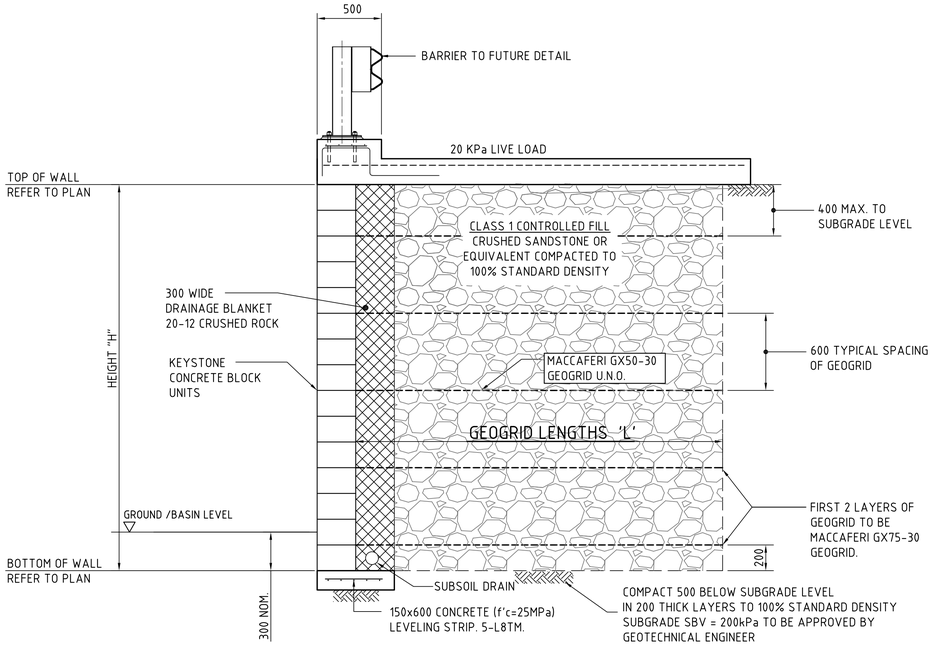
DRAWING TITLE
FINISHED LEVELS PLAN

DRAWING No C012156.00-DA50

ISSUE D

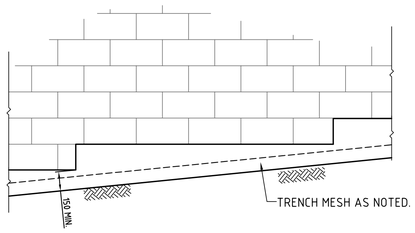


REINFORCED EARTH KEYSTONE WALL TYPICAL DETAIL

UP TO 3m MAXIMUM HIGHT
SCALE 1:20

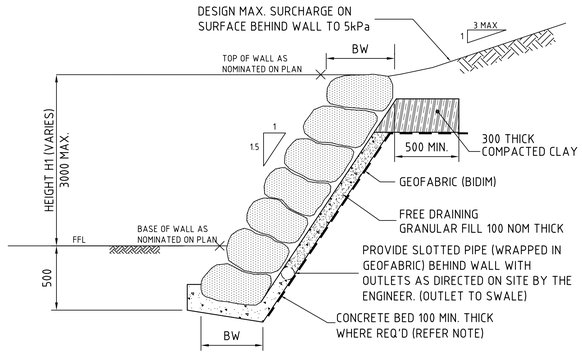
RETAINING WALL 1 SPECIFICATIONS :	
RETAINED HEIGHT (mm)	GEOGRID LENGTH "L" (mm)
UP TO 3000	3500

× INDICATIVE LENGTHS SHOWN ONLY. FINAL GEOGRID LENGTH T.B.C DURING DETAIL DESIGN STAGE



CONCRETE BLOCK REINFORCED EARTH WALL TYPICAL LEVELLING STRIP STEP DETAIL

SCALE 1:20



BOULDER RETAINING WALL TYPICAL DETAIL

N.T.S.

BOULDER RETAINING WALL NOTES

MINIMUM BEARING CAPACITY OF FOUNDATION TO BE 100kPa ASSUMING THE FOLLOWING:
- CLAY FOUNDATION Cu=50kPa, Φ=0

SLIDING STABILITY IS BASED ON THE FOLLOWING
- FRICTION ANGLE OF BOULDER WALL: NOT LESS THAN 40°
- EFFECTIVE FRICTION ANGLE OF SOIL SUBGRADE: NOT LESS THAN 30° FOR SOIL OR 35° FOR ROCK

SOIL AND ROCK DESIGN PARAMETERS SHALL BE CONFIRMED BY GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF BOULDERS OR CONCRETE BED.

BOULDERS TO BE A NOMINAL 750mm DIA. (400mm DIA. UP TO 800mm DIA.) PLACED ON THEIR BROADEST BASE. BOULDERS TO BE PLACED IN AN INTERLOCKING ARRANGEMENT ON THE CONTACT SURFACES DIPPING TOWARDS BACK OF THE WALL AT 10° AND SHALL BE INSPECTED BY THE ENGINEER DURING CONSTRUCTION

DENSITY OF INDIVIDUAL BOULDERS SHALL BE MINIMUM 2.5 TONNES/m

FOR WALLS ABOVE 1000mm IN HEIGHT, THE FIRST LAYER OF BOULDERS ARE TO SET IN A BED OF N15 CONCRETE AND THE JOINTS BETWEEN SHALL BE FILLED WITH CONCRETE TO A LEVEL EQUAL TO THE SURFACE LEVEL OF THE TOE OF THE WALL.

NO STRUCTURE TO BE BUILT WITHIN H1 FROM THE BACK OF THE TOP OF THE WALL (WHERE H1=HEIGHT OF WALL), UNLESS THE STRUCTURE IS FOUNDED ON ROCK WITH SBV=150kPA.

CONSTRUCTION METHODS AND SEQUENCE TO ENSURE THAT DESIGN MAX. SURCHARGE OF 5kPa IS NOT EXCEEDED.

CONSTRUCTION TO BE IN ACCORDANCE WITH AS 4678:2002

WALL DIMENSIONS	
HEIGHT H1	BW
500	500
1000	500
1500	600
2000	700
2500	800
3000	950

200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT B1 SIZE PLOT

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
FOR DEVELOPMENT APPLICATION	27.08.13	B
FOR INFORMATION ONLY	22.08.13	A

AMENDMENTS	DATE	ISSUE

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DRAWING TITLE
RETAINING WALL DETAILS

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