

STORMWATER MANAGEMENT PLAN

PROPOSED SUBDIVISION







No.128 ELANORA ROAD, ELANORA HEIGHTS

GENERAL NOTES

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 3500.3:2003 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. THESE DRAWINGS ARE NOT TO BE SCALED FOR DIMENSIONS NOR TO BE USED FOR SETOUT PURPOSES.
5. ALL SURVEY INFORMATION AND PROPOSED BUILDING AND FINISHED SURFACE LEVELS SHOWN IN THESE DRAWINGS ARE BASED ON LEVELS OBTAINED FROM DRAWINGS BY OTHERS.
6. THESE DRAWINGS DEPICT THE DESIGN OF SURFACE STORMWATER RUNOFF DRAINAGE SYSTEMS ONLY AND DO NOT DEPICT ROOF DRAINAGE OR SUBSOIL DRAINAGE SYSTEMS UNLESS NOTED OTHERWISE. THE DESIGN OF ROOF AND SUBSOIL DRAINAGE SYSTEMS IS THE RESPONSIBILITY OF OTHERS.
7. ALL STORMWATER DRAINAGE PIPES ARE TO BE 100mm DIAMETER uPVC AT MINIMUM 1% GRADE UNLESS NOTED OTHERWISE.
8. 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.
9. ALL PITS WITHIN DRIVEWAYS TO BE 150mm THICK CONCRETE OR EQUAL.
10. THIS PLAN IS THE PROPERTY OF DONOVAN ASSOCIATES AND MAY NOT BE USED OR REPRODUCED WITHOUT WRITTEN PERMISSION FROM DONOVAN ASSOCIATES.

PLAN SPECIFIC NOTES

1. **ROOF DRAINAGE NOTE:** AS 3500 ROOF DRAINAGE REQUIRES EAVES GUTTERS TO BE SIZED FOR 20 YEAR 5 MIN. STORM = 205mm/hr. FOR EAVES GUTTERS, AS 3500.3:2003 THEN HAS THE FOLLOWING REQUIREMENTS:
 - i) FOR TYPICAL STANDARD QUAD GUTTER WITH $A_e = 6000\text{mm}^2$ AND GUTTER SLOPE 1:500 AND STEEPER, THIS REQUIRES ONE DOWNPIPE PER 30m^2 ROOF AREA.
 - ii) DOWNPIPES TO BE MINIMUM 90mm DIA. OR 100 x 50mm FOR GUTTERS SLOPE 1:500 AND STEEPER.
 - iii) OVERFLOW METHOD TO FIGURE G1 OF AS 3500.3:2003 IT IS THE RESPONSIBILITY OF THE PLUMBER AND / OR BUILDER TO COMPLY WITH THIS. THIS DRAWING SHOWS PRELIMINARY LOCATIONS / NUMBERS OF DOWNPIPES ONLY WHICH ARE TO BE VERIFIED BY BUILDER / PLUMBER
2. **TREE PRESERVATION:** IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ANY PRIOR APPROVAL REQUIRED FROM COUNCIL WITH RESPECT TO POTENTIAL IMPACT ON TREES FOR ANY WORKS SHOWN ON THIS DRAWING PRIOR TO THE COMMENCEMENT OF THOSE WORKS
3. ALL ROOF GUTTERS TO HAVE OVERFLOW PROVISION IN ACCORDANCE WITH AS 3500.3:2003 AND SECTIONS 3.5.3, 3.7.5 AND APPENDIX G OF AS 3500.3:2003
4. THIS DRAWING IS NOT TO BE USED FOR SET-OUT PURPOSES - REFER TO ARCHITECTURAL DRAWINGS
5. LOCATION OF SURFACE STORMWATER GRATED INLET PITS MAY BE VARIED OR NEW PITS INSTALLED AT THE CONSTRUCTION STAGE PROVIDED DESIGN INTENT OF THIS DRAWING IS MAINTAINED
6. THIS DRAWING IS NOT TO BE USED FOR SET-OUT PURPOSES - REFER TO ARCHITECTURAL DRAWINGS

LEGEND	
SURFACE INLET PIT	
SURFACE INLET PIT (WITH ENVIROPOD 200 MICRON)	
ACCESS GRATE (WITH ENVIROPOD 200 MICRON)	
ACCESS GRATE (TO HED PIT)	
450 SQUARE INTERVAL	450 X 450
GRATE LEVEL = 75.50	SL 75.50
INVERT LEVEL = RL 75.20	IL 75.20
PROPOSED DOWNPIPE 90mm DIA. OR 100mm x 50mm MIN.	● DP
GRATED TRENCH DRAIN	
ABSORPTION TRENCH	
PROPOSED ROOF GUTTER FALL	→
PROPOSED DOWNPIPE SPREADER	┌○ SP
STORMWATER PIPE 100mm DIA. MIN. UNO	—
SUBSOIL PIPE	—
INSPECTION OPENING	○ IO
RAINWATER HEAD	■ RWH

DRAINAGE NOTES

- PIPE SIZE:**
THE MINIMUM PIPE SIZE SHALL BE:
- 90mm DIA WHERE THE LINE ONLY RECEIVES ROOFWATER RUNOFF; OR
 - 100mm DIA WHERE THE LINE RECEIVES RUNOFF FROM PAVED OR UNPAVED AREAS ON THE PROPERTY

THE MINIMUM PIPE VELOCITY SHOULD BE 0.6 m/s AND A MAXIMUM PIPE VELOCITY OF 6.0 m/s DURING THE DESIGN STORM.

- PIPE GRADE:**
THE MINIMUM PIPE GRADE SHALL BE:
- 1.0% FOR PIPES LESS THAN 225mm DIA
 - 0.5% FOR ALL LARGER PIPES

PIPES WITH A GRADIENT GREATER THAN 20% WILL REQUIRE ANCHOR BLOCKS AT THE TOP AND BOTTOM OF THE INCLINED SECTION; AND AT INTERVALS NOT EXCEEDING 3.0m

ANCHOR BLOCKS ARE DESIGNED ACCORDING TO *CLAUSE 3.5.3 OF AS3500.3-1990*

DEPTH OF COVER FOR PVC PIPES:
MINIMUM PIPE COVER SHALL BE AS FOLLOWS:

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

SEE AS2032 INSTALLATION OF UPVC PIPES FOR FURTHER INFORMATION.

CONCRETE PIPE COVER SHALL BE IN ACCORDANCE WITH *AS3725-1989 LOADS ON BURIED CONCRETE PIPES*, HOWEVER A MINIMUM COVER OF 450mm WILL APPLY.

WHERE INSUFFICIENT COVER IS PROVIDED, THE PIPE SHALL BE COVERED AT LEAST 50mm THICK OVERLAY AND SHALL THEN BE PAVED WITH AT LEAST:

- 150mm REINFORCED CONCRETE WHERE SUBJECT TO HEAVY VEHICLE TRAFFIC;
- 75mm THICKNESS OF BRICK OR 100mm OF CONCRETE PAVING WHERE SUBJECT TO LIGHT VEHICLE TRAFFIC; OR
- 50mm THICK BRICK OR CONCRETE PAVING WHERE NOT SUBJECT TO VEHICLE TRAFFIC.

CONNECTIONS TO STORMWATER DRAINS UNDER BUILDINGS:
SHALL BE CARRIED OUT IN ACCORDANCE WITH *SECTION 3.10 OF AS3500.3-1990*

ABOVE GROUND PIPEWORK:
SHALL BE CARRIED OUT IN ACCORDANCE WITH *SECTION 6 OF AS3500.3-1990*

PIT SIZES AND DESIGN:

DEPTH (mm)	MINIMUM PIT SIZE (mm)
300 ≥ D	300 x 300
600 ≥ D > 300	450 x 450
900 ≥ D > 600	600 x 600
1200 ≥ D > 900	900 x 900
D > 1200	900 x 900 (WITH STEP IRONS)

ALL PIPES SHOULD BE CUT FLUSH WITH THE WALL OF THE PIT.

PITS GREATER THAN 600mm DEEP SHALL HAVE A MINIMUM ACCESS OPENING OF 600 x 600mm

THE GRATED COVERS OF PITS LARGER THAN 600 x 600mm ARE TO BE HINGED TO PREVENT THE GRATE FROM FALLING INTO THE PIT.

THE BASE OF THE DRAINAGE PITS SHOULD BE AT THE SAME LEVEL AS THE INVERT OF THE OUTLET PIPE. RAINWATER SHOULD NOT BE PERMITTED TO POND WITHIN THE STORMWATER SYSTEM

- **TRENCH DRAINS:**
CONTINUOUS TRENCH DRAINS ARE TO BE OF WIDTH NOT LESS THAN 150mm AND DEPTH NOT LESS THAN 100mm. THE BARS OF THE GRATING ARE TO BE PARALLEL TO THE DIRECTION OF SURFACE FLOW.
- **STEP IRONS:**
PITS BETWEEN 1.2m AND 6m ARE TO HAVE STEP IRONS IN ACCORDANCE WITH AS1657. FOR PITS GREATER THAN 6m OTHER MEANS OF ACCESS MUST BE PROVIDED.
- **PVC PITS:**
PVC PITS WILL ONLY BE PERMITTED IF THEY ARE NOT A GREATER SIZE THAN 450 x 450mm (MAXIMUM DEPTH 450mm) AND ARE HEAVY DUTY
- **IN-SITU PITS:**
IN-SITU PITS ARE TO BE CONSTRUCTED ON A CONCRETE BED OF ATLEAST 150mm THICK. THE WALLS ARE TO BE DESIGNED TO MEET THE MINIMUM REQUIREMENTS OF *CLAUSE 4.6.3 OF AS3500.4-1990*. PITS DEEPER THAN 1.8m SHALL BE CONSTRUCTED WITH REINFORCED CONCRETE.
- **GRATES:**
GRATES ARE TO BE GALVANISED STEEL GRID TYPE. GRATES ARE TO BE OF HEAVY-DUTY TYPE IN AREAS WHERE THEY MAY BE SUBJECT TO VEHICLE LOADING.

A	29.10.2013	ISSUED TO CLIENT
ISS	DATE	AMENDMENT

SURVEYOR C.M.S SURVEYORS P/L	ARCH JOB No 10837B
CLIENT: CBD PROJECTS P/L	



DONOVAN ASSOCIATES

INCORPORATED ENGINEERING PTY LTD ABN: 84 134 616 078
PH/ 02 9806 3000 F/ 02 9806 2806 E/ admineng@donovanassociates.com
15 PARKES STREET PARRAMATTA NSW 2150

DWG TITLE DETAILS, LEGENDS & NOTES	
PROJECT TITLE PROPOSED SUB-DIVISION No.128 ELANORA ROAD, ELANORA HEIGHTS	

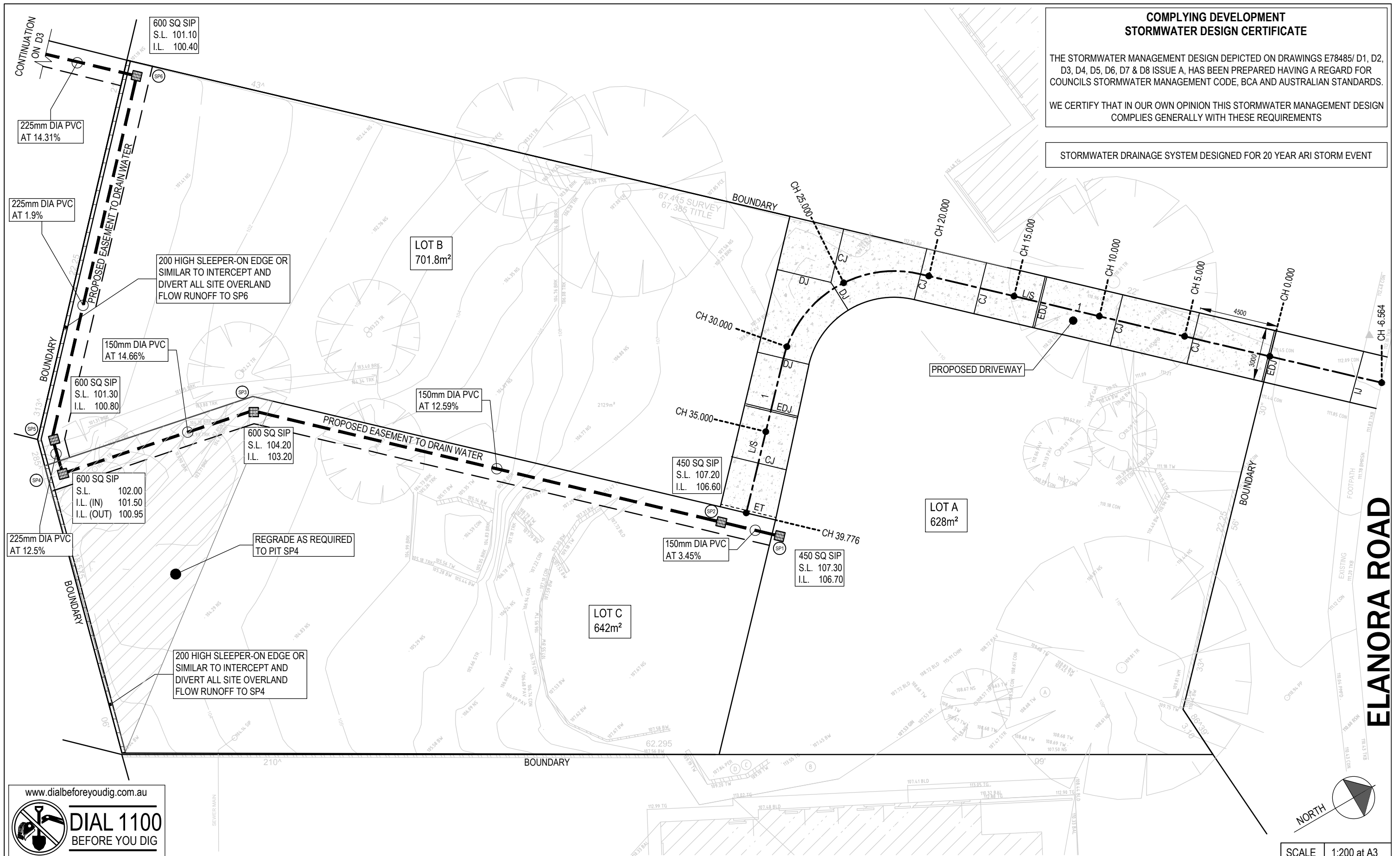
DONOVAN ASSOCIATES			
Prepared by	Robert Eltobbagi MIEAust CPEng 1052208		
Authorised by	John Donovan MIEAust CPEng NPER 329025		
JOB No	DWG No	No IN SET	ISSUE
E78485	D1	8	A

**COMPLYING DEVELOPMENT
STORMWATER DESIGN CERTIFICATE**

THE STORMWATER MANAGEMENT DESIGN DEPICTED ON DRAWINGS E78485/ D1, D2, D3, D4, D5, D6, D7 & D8 ISSUE A, HAS BEEN PREPARED HAVING A REGARD FOR COUNCILS STORMWATER MANAGEMENT CODE, BCA AND AUSTRALIAN STANDARDS.

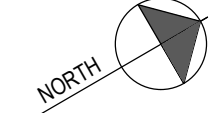
WE CERTIFY THAT IN OUR OWN OPINION THIS STORMWATER MANAGEMENT DESIGN COMPLIES GENERALLY WITH THESE REQUIREMENTS

STORMWATER DRAINAGE SYSTEM DESIGNED FOR 20 YEAR ARI STORM EVENT



ELANORA ROAD

www.dialbeforeyoudig.com.au



SCALE 1:200 at A3

A	29.10.2013	ISSUED TO CLIENT
ISS	DATE	AMENDMENT

SURVEYOR	ARCH JOB No
C.M.S SURVEYORS P/L	10837B
CLIENT:	
CBD PROJECTS P/L	

DONOVAN ASSOCIATES

INCORPORATED ENGSURVEY PTY LTD ABN: 84 134 616 078
PH/ 02 9806 3000 F/ 02 9806 2806 E/ admineng@donovanassociates.com
15 PARKES STREET PARRAMATTA NSW 2150

DWG TITLE	STORMWATER MANAGEMENT PLAN
PROJECT TITLE	PROPOSED SUB-DIVISION No.128 ELANORA ROAD, ELANORA HEIGHTS

DONOVAN ASSOCIATES			
Prepared by	Robert Eltobagi MIEAust CPEng 1052208		
Authorised by	John Donovan MIEAust CPEng NPER 329025		
JOB No	DWG No	No IN SET	ISSUE
E78485	D2	8	A

ILUKA AVENUE

OUTLET
TOK 89.95
IL 89.80

EXISTING KERB & GUTTER

2 x 200mm WIDE x 100mm
HIGH GALVANISED RHS

600 SQ SIP
S.L. 91.45
I.L. 90.80

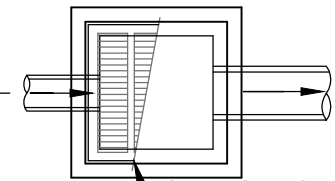
No. 36

225mm DIA PVC
AT 14.31%

600 SQ SIP
S.L. 101.10
I.L. 100.40

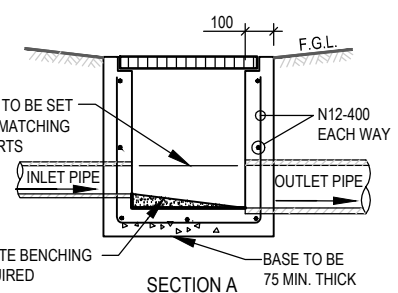
BLOCKWORK WALLS, BRICK WALLS OR
PRECAST CONCRETE PITS MAY BE
SUBSTITUTED SUBJECT TO APPROVAL

A



LIGHT DUTY GALVANISED GRATE
& FRAME (IN LANDSCAPE AREAS ONLY)
HEAVY DUTY GALVANISED GRATE
& FRAME (IN TRAFFICABLE AREAS ONLY)

PIPES TO BE SET
WITH MATCHING
OBVERTS



SECTION A

BASE TO BE
75 MIN. THICK

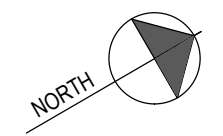
PROPOSED EASEMENT TO DRAIN WATER

PROPOSED EASEMENT TO DRAIN WATER

Lot 119
D.P.24360

CONTINUATION
ON D2

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SCALE 1:200 at A3

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ISS	DATE	AMENDMENT

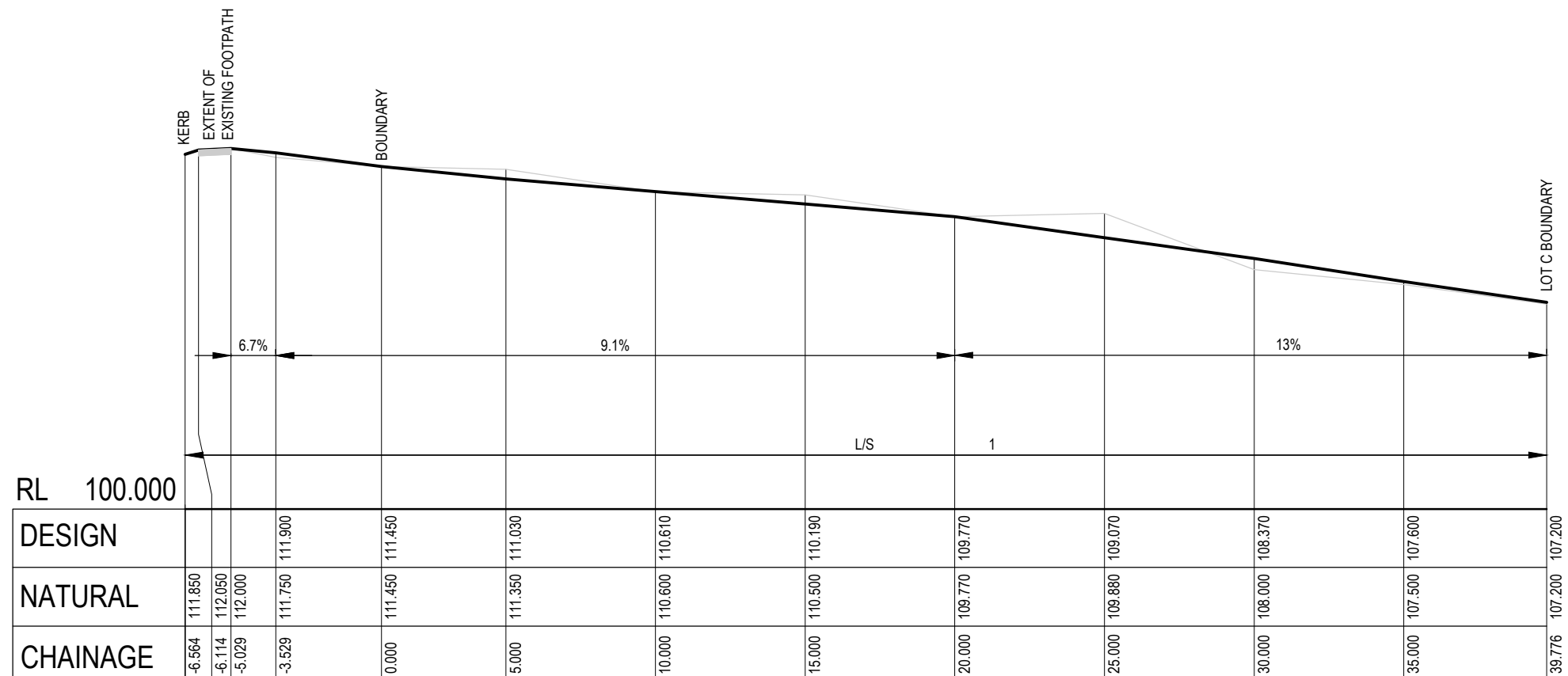
SURVEYOR	ARCH JOB No
C.M.S SURVEYORS P/L	10837B
CLIENT:	
CBD PROJECTS P/L	

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INCORPORATED ENGSURVEY PTY LTD. ABN: 84 134 616 078
PH/ 02 9806 3000 F/ 02 9806 2806 E/ admineng@donovanassociates.com
15 PARKES STREET PARRAMATTA NSW 2150

DWG TITLE
STORMWATER MANAGEMENT PLAN (CONTINUED)
PROJECT TITLE
PROPOSED SUB-DIVISION No.128 ELANORA ROAD, ELANORA HEIGHTS

DONOVAN ASSOCIATES			
Prepared by	Robert Eltobbagi MIEAust CPEng 1052208		
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JOB No	DWG No	No IN SET	ISSUE
E78485	D3	8	A



LONGITUDINAL DRIVEWAY SECTION L/S - 1

HORIZONTAL 1:200
 VERTICAL 1:200

ISS	DATE	AMENDMENT
A	29.10.2013	ISSUED TO CLIENT

SURVEYOR C.M.S SURVEYORS P/L	ARCH JOB No 10837B
CLIENT: CBD PROJECTS P/L	

DONOVAN
ASSOCIATES

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 PH/ 02 9806 3000 F/ 02 9806 2806 E/ admineng@donovanassociates.com
 15 PARKES STREET PARRAMATTA NSW 2150

DWG TITLE DRIVEWAY LONGSECTION
PROJECT TITLE PROPOSED SUB-DIVISION No.128 ELANORA ROAD, ELANORA HEIGHTS

DONOVAN ASSOCIATES			
Prepared by	Robert Eltobbagi MIEAust CPEng 1052208		
Authorised by	John Donovan MIEAust CPEng NPER 329025		
JOB No	DWG No	No IN SET	ISSUE
E78485	D4	8	A

DRAINS MODEL OUTPUT

Outflow Volumes for Total Catchment (0.14 impervious + 0.09 pervious = 0.23 total ha)

Storm	Total Rainfall	Total Runoff	Impervious Runoff	Pervious Runoff
	cu.m	cu.m (Runoff %)	cu.m (Runoff %)	cu.m (Runoff %)
AR&R 100 year, 5 minutes storm, average 266 mm/h, Zone 1	51.19	41.17 (80.4%)	29.56 (95.5%)	11.61 (57.4%)
AR&R 100 year, 10 minutes storm, average 209 mm/h, Zone 1	80.56	68.67 (85.2%)	47.32 (97.1%)	21.35 (67.0%)
AR&R 100 year, 15 minutes storm, average 180 mm/h, Zone 1	103.72	90.25 (87.0%)	61.33 (97.8%)	28.92 (70.5%)
AR&R 100 year, 20 minutes storm, average 160 mm/h, Zone 1	122.92	108.07 (87.9%)	72.94 (98.1%)	35.13 (72.3%)
AR&R 100 year, 25 minutes storm, average 145 mm/h, Zone 1	139.33	123.04 (88.3%)	82.86 (98.3%)	40.18 (73.0%)
AR&R 100 year, 30 minutes storm, average 133 mm/h, Zone 1	153.68	136.18 (88.6%)	91.54 (98.5%)	44.64 (73.5%)
AR&R 100 year, 45 minutes storm, average 109 mm/h, Zone 1	188.36	167.90 (89.1%)	112.51 (98.8%)	55.39 (74.4%)
AR&R 100 year, 1 hour storm, average 93.1 mm/h, Zone 1	215.09	192.30 (89.4%)	128.68 (98.9%)	63.62 (74.8%)
AR&R 100 year, 1.5 hours storm, average 73.8 mm/h, Zone 1	255.56	229.04 (89.6%)	153.16 (99.1%)	75.88 (75.1%)
AR&R 100 year, 2 hours storm, average 62.0 mm/h, Zone 1	286.36	256.72 (89.6%)	171.79 (99.2%)	84.93 (75.0%)
AR&R 100 year, 3 hours storm, average 48.1 mm/h, Zone 1	333.44	298.23 (89.4%)	200.26 (99.3%)	97.98 (74.3%)

PIPE DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Max U/S HGL (m)	Max D/S HGL (m)	Due to Storm
Pipe 1-2	0.03	1.61	107.087	107.056	AR&R 100 year, 20 minutes storm, average 160 mm/h, Zone 1
Pipe 2-3	0.049	2.61	107.045	104.197	AR&R 100 year, 25 minutes storm, average 145 mm/h, Zone 1
Pipe 3-4	0.06	3.23	103.469	101.721	AR&R 100 year, 10 minutes storm, average 209 mm/h, Zone 1
Pipe 4-5	0.082	1.77	101.333	101.3	AR&R 100 year, 20 minutes storm, average 160 mm/h, Zone 1
Pipe 5-6	0.078	1.69	101.245	100.969	AR&R 100 year, 20 minutes storm, average 160 mm/h, Zone 1
Pipe 6-7	0.111	4.85	100.521	91.077	AR&R 100 year, 25 minutes storm, average 145 mm/h, Zone 1
Pipe 7-8	0.114	3.82	90.92	89.95	AR&R 100 year, 25 minutes storm, average 145 mm/h, Zone 1

OVERFLOW ROUTE DETAILS

Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max Dv	Max Width	Max V	Due to Storm
OF1	0.026	0.026	1.433	0.026	0.02	4	0.58	AR&R 100 year, 25 minutes storm, average 145 mm/h, Zone 1
OF2	0	0	1.289	0	0	0	0	
OF3	0.019	0.019	1.427	0.023	0.01	4	0.58	AR&R 100 year, 25 minutes storm, average 145 mm/h, Zone 1
OF4	0	0	1.391	0	0	0	0	
OF5	0.006	0.006	1.454	0.019	0.01	1.92	0.35	AR&R 100 year, 25 minutes storm, average 145 mm/h, Zone 1
OF6	0	0	1.33	0	0	0	0	
OF7	0	0	1.36	0	0	0	0	

CONTINUITY CHECK for AR&R 100 year, 1.5 hours storm, average 73.8 mm/h, Zone 1

Node	Inflow (cu.m)	Outflow (cu.m)	Storage Change (cu.m)	Difference %
Pit1	75.56	75.5	0	0.1
Pit2	87.56	87.66	0	-0.1
Pit3	132.26	131.99	0	0.2
Pit4	156.9	156.86	0	0
Pit5	157.28	157.72	0	-0.3
Pit6	225.02	225.1	0	0
Pit7	229.26	229.34	0	0
Outlet (kerb)	229.34	229.34	0	0

Run Log for 25.10.2013 e78485 DRAINS model.drm run at 16:08:41 on 25/10/2013

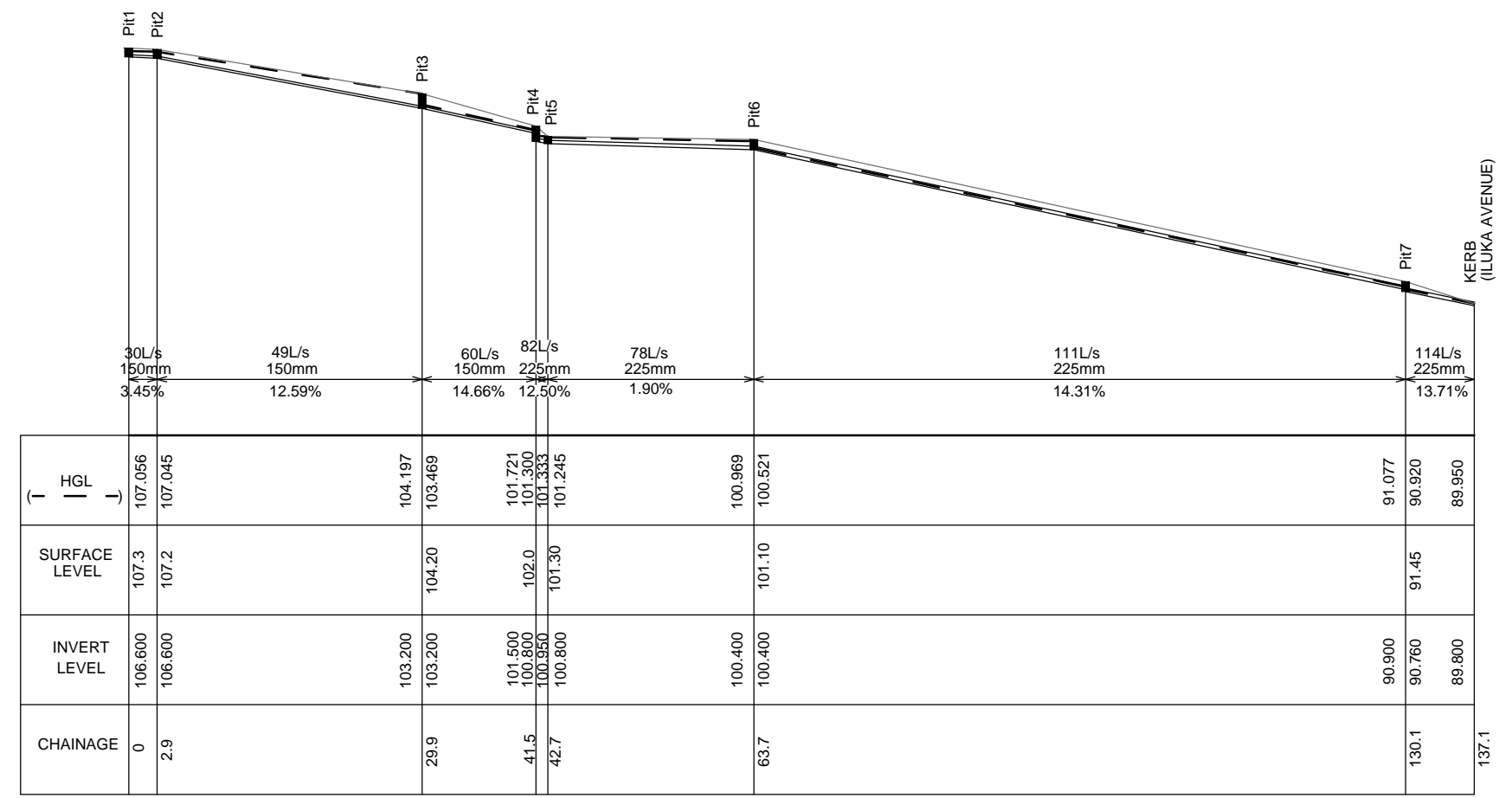
Upwelling occurred at Pit5
Freeboard was less than 0.15m at Pit6, Pit3, Pit2, Pit1
Flows were safe in all overflow routes.

PIT / NODE DETAILS

Name	Max HGL	Max Pond HGL	Max Surface Flow Arriving (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit1	107.3		0.049		0	0.026	Inlet Capacity
Pit2	107.06		0.034		0.14	0	None
Pit3	104.2		0.029		0	0.019	Inlet Capacity
Pit4	101.72		0.035		0.28	0	None
Pit5	101.3		0		0	0.006	System Outlet
Pit6	100.97		0.05		0.13	0	None
Pit7	91.08		0.003		0.37	0	None
Outlet (kerb)	89.95		0				

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
Lot A	0.049	0.032	0.017	2.8	8.5	0	AR&R 100 year, 25 minutes storm, average 145 mm/h, Zone 1
Driveway	0.008	0.008	0	3.4	0	0	AR&R 100 year, 5 minutes storm, average 266 mm/h, Zone 1
Lot C1	0.029	0.019	0.01	2.5	9	0	AR&R 100 year, 25 minutes storm, average 145 mm/h, Zone 1
Lot C2	0.016	0.011	0.005	3	9.5	0	AR&R 100 year, 25 minutes storm, average 145 mm/h, Zone 1
Lot B1	0	0	0	5	1	0	AR&R 100 year, 1.5 hours storm, average 73.8 mm/h, Zone 1
Lot B	0.043	0.029	0.015	3	9.8	0	AR&R 100 year, 25 minutes storm, average 145 mm/h, Zone 1
Boundary Pit	0.003	0	0.003	5	5	0	AR&R 100 year, 1.5 hours storm, average 73.8 mm/h, Zone 1



INTERALLOTMENT DRAINAGE LONGSECTION - 100 YEAR ARI
NTS

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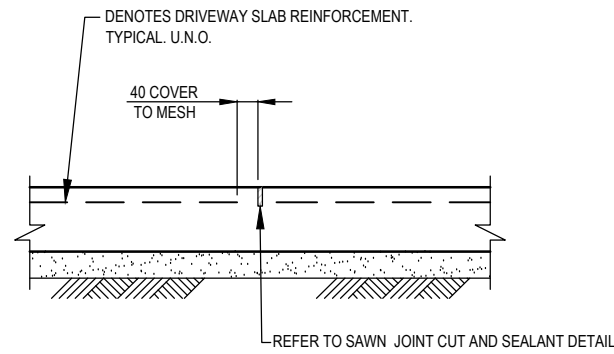
SURVEYOR		ARCH JOB No
C.M.S SURVEYORS P/L		10837B
CLIENT:		
CBD PROJECTS P/L		

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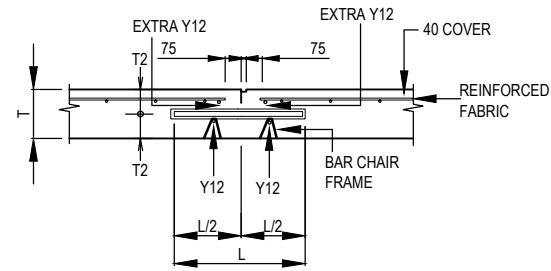
INCORPORATED ENGSURVEY PTY LTD. ABN: 84 134 616 078
PH/ 02 9806 3000 F/ 02 9806 2806 E/ admineng@donovanassociates.com
15 PARKES STREET PARRAMATTA NSW 2150

DWG TITLE	
DRAINS MODEL RESULTS & DRAINAGE LONGSECTION	
PROJECT TITLE	
PROPOSED SUB-DIVISION	
No.128 ELANORA ROAD, ELANORA HEIGHTS	

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JOB No	DWG No	No IN SET	ISSUE
E78485	D5	8	A



TYPICAL CRACK-INDUCED JOINT - CJ
NTS

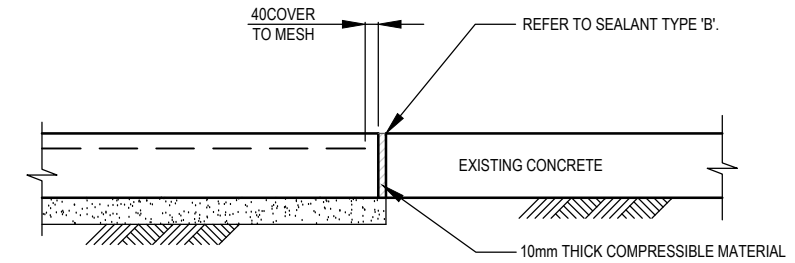


EXPANSION DOWEL JOINT - EDJ

NTS

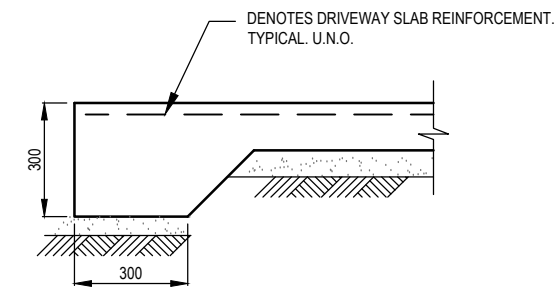
FABRIC	SLAB 'T'	DOWELS	L
REFER PAVEMENT PLANS	150	20 DIA @ 300 CTS	450

1. DOWELS TO BE PLASTIC WRAPPED FULL LENGTH
2. DOWELS TO BE RIGIDLY SUPPORTED ON BAR CHAIR FRAME WITH DOWELS PERPENDICULAR TO SAW CUT.
3. MARK POSITION OF SAW CUT ON FORMWORK. DO NOT POUR UNTIL POSITION OF MARK AND DOWEL FRAME HAS BEEN VERIFIED BY MANAGING CONTRACTOR.
4. ALL DOWELS TO BE GALVANISED UNO.



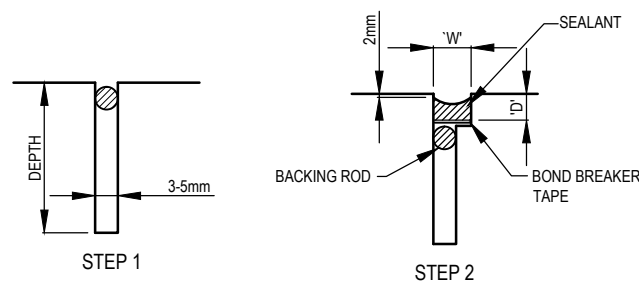
TYPICAL ISOLATION JOINT - IJ

NTS



TYPICAL SLAB EDGE THICKENING - ET

NTS



SAWN JOINT CUT AND SEALANT

NTS

LOCATION	SEALANT	PRIMER
AREAS SUBJECT TO FUEL SPILLAGE	THIOFLEX 600	FOSROC PRIMER 14
OTHER EXTERNAL PAVEMENTS	ERMER-ROAD SEAL SL	FOSROC PRIMER 10

STEP 1:

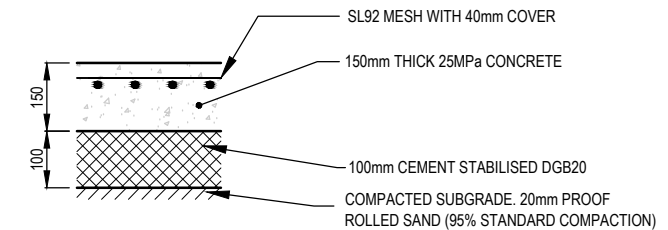
INITIAL CUT TO DEPTH 'T/4' ('T/3 FOR STEEL FIBRE REINFORCED CONCRETE) WITHIN 1 DAY OF POURING CONCRETE. INSERT POLYURETHANE BACKING ROD TO PREVENT INGRESS OF DIRT UNTIL SEALANT APPLIED (MIN 28 DAYS LATER). ROD DIAMETER TO BE MIN. 1.25 x CUT WIDTH.

STEP 2:

REMOVE ALL DIRT FROM SAW CUT, USING HIGH PRESSURE COMPRESSED AIR. REPLACE BACKING ROD WITH LARGER DIAMETER IF LOOSE. PUSH BACKING ROD INTO SAW CUT 1mm BELOW DEPTH 'D'. IF NECESSARY, REMOVE AND REPLACE BACKING ROD. WIDEN SAW CUT TO WIDTH 'W' AND DEPTH 'D' WITH ADDITIONAL SAW CUT/CUTS. REMOVE ALL FOREIGN MATERIAL USING HIGH PRESSURE WATER WASH. DRY USING HIGH PRESSURE COMPRESSED AIR AND ALLOW ADDITIONAL 16 HRS TO DRY THOROUGHLY. INSTALL POLYETHYLENE BOND BREAKER TAPE. PRIME FACES OF CUT CONCRETE (REFER TABLE BELOW) INSTALL SEALANT AS SPECIFIED (REFER TABLE BELOW) IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

ALTERNATIVE SEALANTS MUST HAVE

- MOVEMENT ACCOMMODATION FACTOR +/- 50%
- PRIMER TO MANUFACTURER'S SPECIFICATION
- INSTALLATION TO MANUFACTURER'S RECOMMENDATIONS
- PRIOR APPROVAL BY SUPERINTENDENT.



NOTE: ASSUMED CBR = 3%

CONCRETE PAVEMENT DETAIL

NTS

ISS	DATE	AMENDMENT
A	29.10.2013	ISSUED TO CLIENT

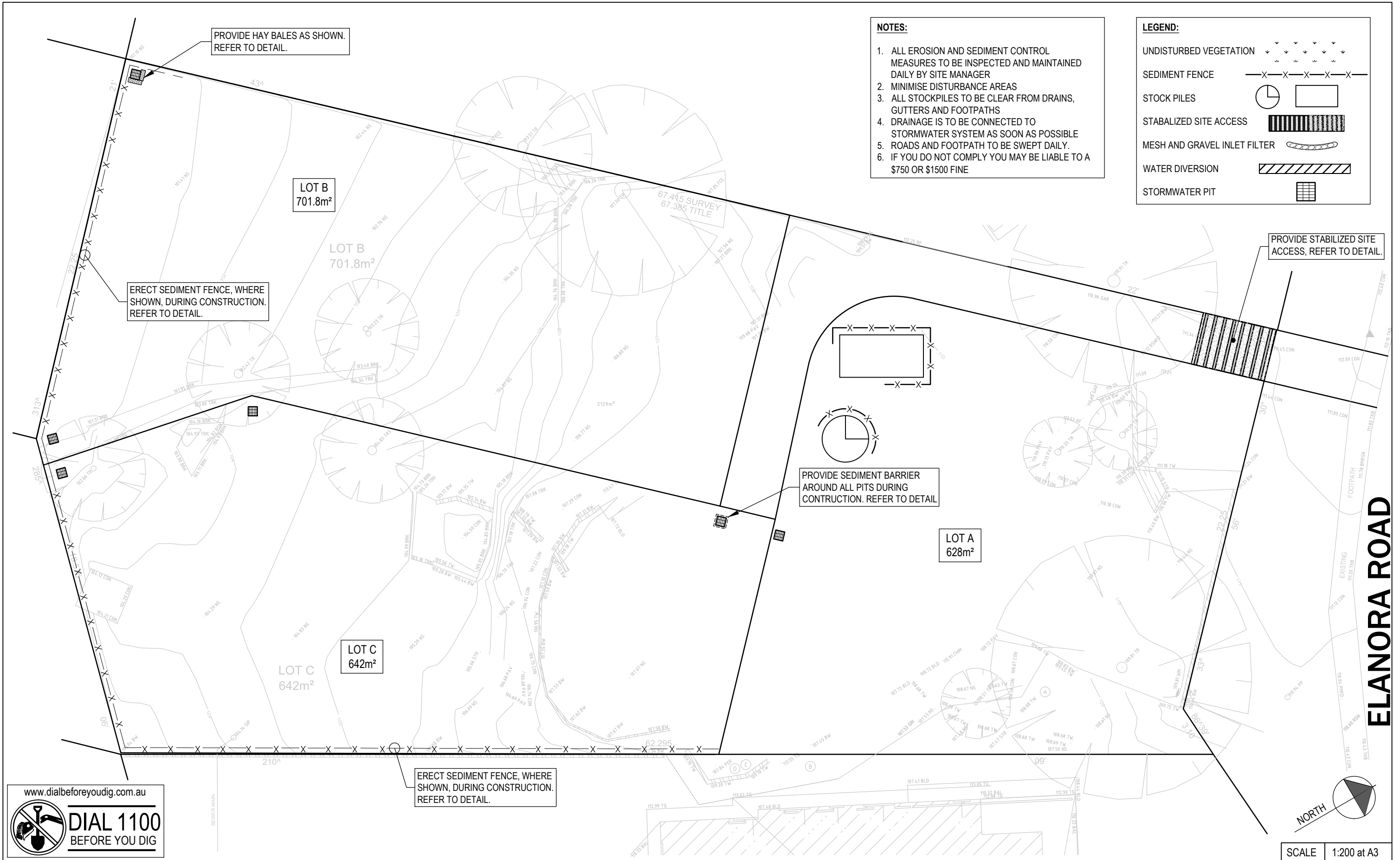
SURVEYOR C.M.S SURVEYORS P/L	ARCH JOB No 10837B
CLIENT: CBD PROJECTS P/L	

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ASSOCIATES

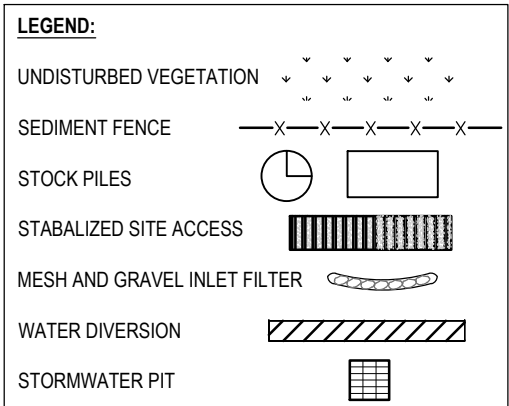
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PH/ 02 9806 3000 F/ 02 9806 2806 E/ admineng@donovanassociates.com
15 PARKES STREET PARRAMATTA NSW 2150

DWG TITLE PAVEMENT DETAILS
PROJECT TITLE PROPOSED SUB-DIVISION No.128 ELANORA ROAD, ELANORA HEIGHTS

DONOVAN ASSOCIATES			
Prepared by	Robert Eltobbagi MIEAust CPEng 1052208		
Authorised by	John Donovan MIEAust CPEng NPER 329025		
JOB No	DWG No	No IN SET	ISSUE
E78485	D6	8	A



- NOTES:**
1. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE INSPECTED AND MAINTAINED DAILY BY SITE MANAGER
 2. MINIMISE DISTURBANCE AREAS
 3. ALL STOCKPILES TO BE CLEAR FROM DRAINS, GUTTERS AND FOOTPATHS
 4. DRAINAGE IS TO BE CONNECTED TO STORMWATER SYSTEM AS SOON AS POSSIBLE
 5. ROADS AND FOOTPATH TO BE SWEEPED DAILY.
 6. IF YOU DO NOT COMPLY YOU MAY BE LIABLE TO A \$750 OR \$1500 FINE



PROVIDE HAY BALES AS SHOWN. REFER TO DETAIL.

ERECT SEDIMENT FENCE, WHERE SHOWN, DURING CONSTRUCTION. REFER TO DETAIL.

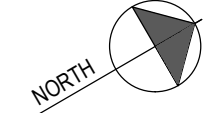
PROVIDE STABILIZED SITE ACCESS, REFER TO DETAIL.

PROVIDE SEDIMENT BARRIER AROUND ALL PITS DURING CONSTRUCTION. REFER TO DETAIL.

ERECT SEDIMENT FENCE, WHERE SHOWN, DURING CONSTRUCTION. REFER TO DETAIL.

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DIAL 1100
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SCALE 1:200 at A3

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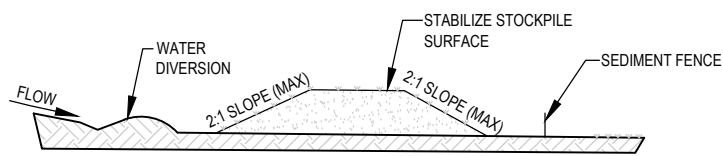
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DWG TITLE	SEDIMENT CONTROL PLAN
PROJECT TITLE	PROPOSED SUB-DIVISION No.128 ELANORA ROAD, ELANORA HEIGHTS

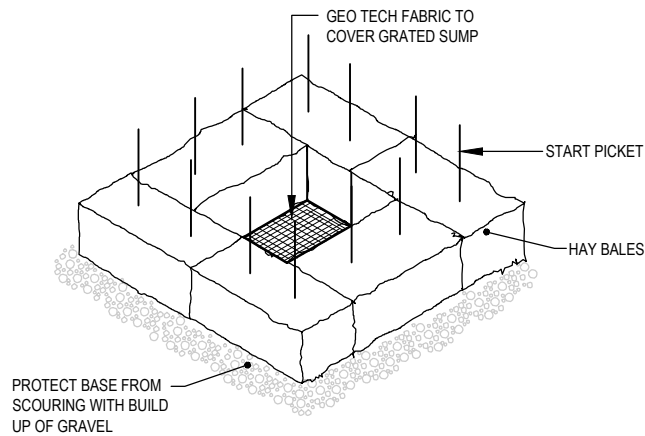
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JOB No	DWG No	No IN SET	ISSUE
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ELANORA ROAD

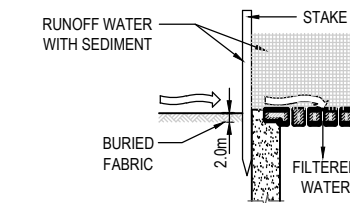


STOCKPILE
NTS

- CONSTRUCTION NOTES:**
1. PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
 2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
 3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
 4. WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILIZE FOLLOWING THE APPROVED ESCP OR SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
 5. CONSTRUCT EARTH BANKS (LOW FLOW) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES 1 TO 2 METRES ON THE DOWNSLOPE.

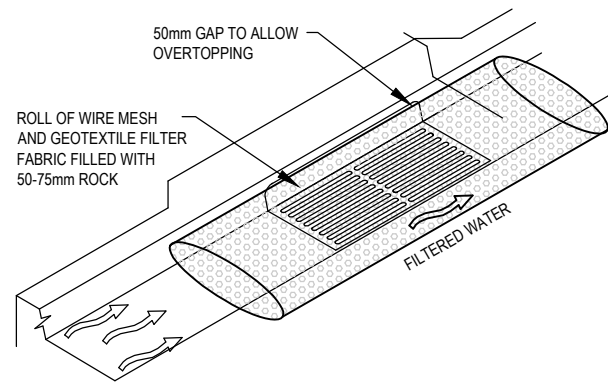


HAY BALE
NTS



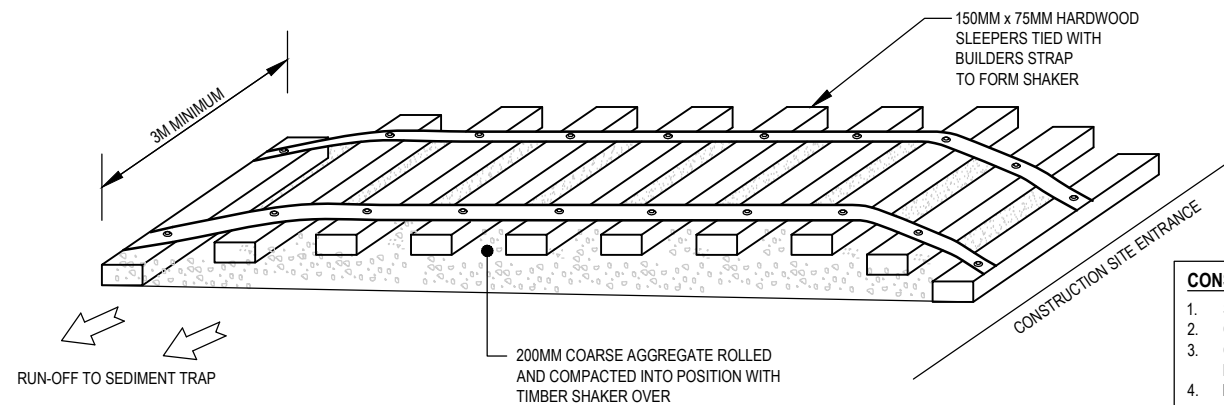
SEDIMENT BARRIER AROUND PIT
NTS

- CONSTRUCTION NOTES:**
1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
 2. FOLLOW STRAW FILTER AND SEDIMENT FENCE FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOFABRIC. REDUCE THE PICKET SPACING TO 1 METRE CENTRES.
 3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
 4. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.



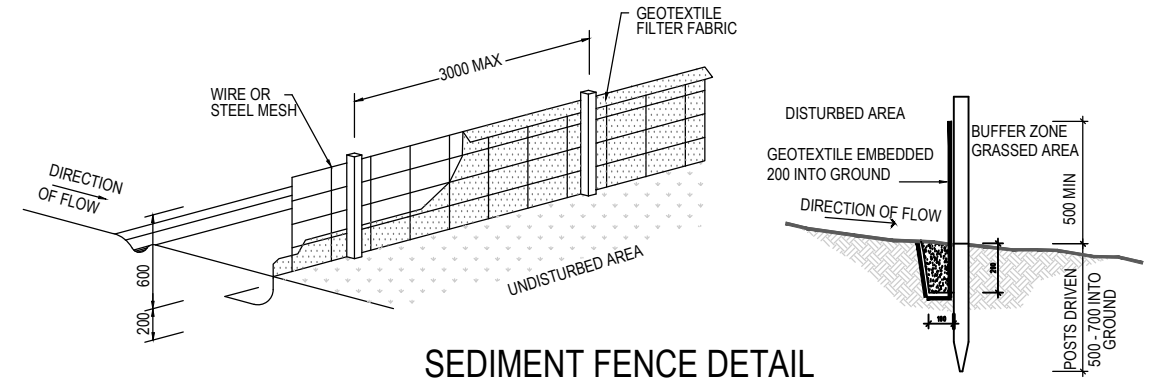
MESH AND GRAVEL INLET FILTER
NTS

- CONSTRUCTION NOTES:**
1. INSTALL FILTERS TO KERB INLETS ONLY AT SAG POINTS
 2. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT AND FILL IT WITH 25mm TO 50mm GRAVEL.
 3. FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150mm(h) x 400mm(w).
 4. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST 100mm SPACE BETWEEN IT AND THE KERB INLET. MAINTAIN THE OPENING WITH SPACER BLOCKS.
 5. FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BYPASSING THE FILTER.
 6. SANDBAGS FILLED WITH GRAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDING THEY ARE PLACED SO THAT THEY FIRMLY ABUT EACH OTHER AND SEDIMENT-LADEN WATERS CANNOT PASS BETWEEN.



STABILIZED SITE ACCESS
NTS

- CONSTRUCTION NOTES:**
1. STRIP THE TOPSOIL, LEVEL THE SITE AND COMPACT THE SUBGRADE
 2. COVER THE AREA WITH NEEDLE-PUNCHED GEOTEXTILE
 3. CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD BASED OR 30mm AGGREGATE
 4. ENSURE THE STRUCTURE IS AT LEAST 15m LONG OR TO BUILD ALLINGMENT AND AT LEAST 3 METRES WIDE.
 5. WHERE A SEDIMENT FENCE JOINS ONTO THE STABILIZED ACCESS, CONSTRUCT A HUMP IN THE STABILIZED ACCESS TO DIVERT WATER TO THE SEDIMENT FENCE.



SEDIMENT FENCE DETAIL
NTS

- CONSTRUCTION NOTES:**
1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENTS AREA OF ANY ONE SECTION. THE CATCHMENTS AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10 YEAR EVENT.
 2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
 3. DRIVE 1.5m LONG STAR PICKETS INTO GROUND AT 2.5m INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
 4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
 5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH 150mm OVERLAP.
 6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

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