A1

45 - 49 WARRIEWOOD ROAD, WARRIEWOOD

CIVIL ENGINEERING WORKS

DRAWING INDEX:

DRAWING No.	DRAWING TITLE
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LOCALITY PLAN

NOT FOR CONSTRUCTION

REV.	DES.	DATE	VER.	DESCRIPTION
02	T.T.	16/03/2020	E.S.	ISSUE FOR DA
01	T.T.	28/02/2020	E.S.	ISSUE FOR COORDINATION

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DATE	JAN 2020
ENGINEER	E.S.
LGA	NORTHERN BEACHES
VERIFIER	E.S.
SCALE @ A1	NILL

45-49 WARRIEWOOD RD, WARRIEWOOD

COVER SHEET, DRAWING INDEX & LOCALITY

STATUS	DRAWING No.	REVISION
DEVELOPMENT APPLICATION	02192_100	02

CAD FILENAME Q:\C&M\Projects\02101-02200\PN-02192 - WARRIEWOOD ROAD 45-49 WARRIEWOOD\ACAD\02192_100.dwg

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GENERAL NOTES:

1. ALL WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL'S CIVIL WORKS SPECIFICATION.
2. ANY CHANGES MADE BY THE CONSTRUCTOR TO ANY LEVEL, DIMENSION, LOCATION, POSITION, ALIGNMENT ETC., OF ANY OF THE WORKS SHOWN ON THE DRAWINGS WITHOUT THE WRITTEN CONSENT OF C&M CONSULTING ENGINEERS PTY. LTD. AND OR THE PRINCIPAL CERTIFYING AUTHORITY IS DONE SO AT THE CONSTRUCTORS OWN RISK.
3. THE CONSTRUCTOR SHALL ALLOW TO LIAISE WITH AND PROVIDE SUFFICIENT NOTICE TO THE PRINCIPAL CERTIFYING AUTHORITY TO ENSURE THAT ALL WORKS ARE INSPECTED TO ENABLE COMPLIANCE CERTIFICATES TO BE ISSUED THROUGHOUT THE CONSTRUCTION PERIOD. THE CONSTRUCTOR SHALL LIAISE WITH THE PRINCIPAL CERTIFYING AUTHORITY PRIOR TO ANY CONSTRUCTION WORKS COMMENCING AND PREPARE AN INSPECTION AND TEST PLAN WITH A MUTUALLY AGREED WITNESS AND HOLD POINTS FOR THE CONSTRUCTION WORKS.
4. IF THE PRINCIPAL CERTIFYING AUTHORITY IS NOT NORTHERN BEACHES COUNCIL, THEN THE CONSTRUCTOR MUST CONTACT NORTHERN BEACHES WORKS DIVISION TO ENABLE THEIR INSPECTION OF ALL WORKS INCLUDING EROSION AND SEDIMENT CONTROL MEASURES) WITHIN THE ROAD RESERVE AREA.
5. THE CONSTRUCTOR SHALL USE A SUITABLY QUALIFIED SURVEYOR TO SET OUT ALL WORKS. THE SURVEYOR SHALL ISSUE A CERTIFICATE TO THE PRINCIPAL CERTIFYING AUTHORITY CERTIFYING THAT THE WORKS HAVE BEEN SET OUT IN ACCORDANCE WITH THE APPROVED DRAWINGS PRIOR TO THE WORKS BEING CONSTRUCTED.
6. ALL NEW WORKS SHALL MAKE A SMOOTH CONNECTION WITH ANY FORMATIONS, STRUCTURES, ETC.
7. THE WORKS SHALL BE CONSTRUCTED IN SUCH A MANNER THAT THERE IS MINIMUM DISTURBANCE TO EXISTING TREES AND VEGETATION.
8. ALL BOUNDARY LOCATIONS, DIMENSIONS, BEARINGS, AREAS, ETC., SHOWN ON THE DRAWINGS ARE APPROXIMATE ONLY AND ARE SUBJECT TO A FINAL SURVEY AND REGISTRATION OF THE FINAL PLAN OF SUBDIVISION WITH LAND AND PROPERTY INFORMATION NSW.
9. THE PUBLIC FOOTWAY AND ROADWAY FRONTING THE SITE SHALL BE MAINTAINED IN A SAFE AND UNOBSTRUCTED MANNER AT ALL TIMES DURING THE CONSTRUCTION WORKS.
10. THE CONSTRUCTOR SHALL BE RESPONSIBLE FOR REPAIRING TO THE SATISFACTION OF THE ASSET OWNER, ANY DAMAGE CAUSED TO ANY EXISTING INFRASTRUCTURE WITHIN THE ROAD RESERVE, INCLUDING BUT NOT LIMITED TO KERBS, GUTTERS, FOOTPATHS, VEHICULAR CROSSINGS, STREET SIGNS, SERVICE FITTING COVERS, ETC.
11. THE SITE SHALL BE KEPT IN A TIDY CONDITION AT ALL TIMES. LITTER RUBBISH AND BUILDING RUBBLE SHALL BE PLACED IN CONTAINERS OR BINS AND REGULARLY REMOVED FROM SITE AS REQUIRED.

SEDIMENT & EROSION CONTROL NOTES:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED, PLACED AND MAINTAINED IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL'S GUIDELINES AND THE DEPARTMENT OF HOUSING'S "MANAGING URBAN STORMWATER: SOILS AND CONSTRUCTION" MANUAL.
2. NO CONSTRUCTION WORKS ARE TO COMMENCE ON SITE UNTIL ALL EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE AND HAVE BEEN INSPECTED AND APPROVED BY THE PRINCIPAL CERTIFYING AUTHORITY.
3. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REGULARLY INSPECTED, IN PARTICULAR AFTER STORMS, AND REPAIRED OR MAINTAINED AS REQUIRED TO ENSURE THE MEASURES CORRECT AND EFFICIENT FUNCTION THROUGHOUT THE DURATION OF THE WORKS, UNTIL SUCH TIME AS THE PRINCIPAL CERTIFYING AUTHORITY AUTHORISES THE REMOVAL OF SUCH MEASURES.
4. ALL STOCKPILES SHALL BE CLEAR OF ALL TREES AND DRAINAGE LINES (INCLUDING OVERLAND FLOW PATHS) AND PROTECTED FROM EROSION.
5. DUST CONTROL MEASURES SHALL BE IMPLEMENTED CONTINUOUSLY DURING CONSTRUCTION WORKS.

KERBING NOTES:

1. ALL KERBS, GUTTERS, EDGE STRIPS, LAYBACKS AND CROSSINGS TO BE BUILT ON A MINIMUM OF 100mm THICK SUBBASE. THE SUBBASE SHALL BE EXTENDED 150mm BEHIND BACK OF KERB.
2. CONCRETE SHALL BE OF 25MPa COMPRESSIVE STRENGTH (F'c) AT 28 DAYS.
3. EXPANSION JOINTS OF APPROVED BITUMEN IMPREGNATED JOINTING MATERIAL OR EQUIVALENT SHALL BE PLACED AT 12m INTERVALS, AT JUNCTIONS WITH EXISTING WORK, KERB TRANSITIONS AND ADJACENT TO GULLY PITS. WEAKENED PLANE JOINTS (DUMMY JOINTS) SHALL BE CUT AT 3m INTERVALS.

EARTHWORKS NOTES:

1. THE CONTRACTOR SHALL STRIP THE MATERIAL CLASSIFIED AS TOPSOIL OR MATERIAL CONTAINING ORGANIC MATTER TO A LEVEL APPROVED BY THE CONTRACTOR'S GEOTECHNICAL ENGINEER AND THE SUPERINTENDENT. THE STRIPPED TOPSOIL SHOULD BE REMOVED AND STOCKPILED PRIOR TO ANY EARTHWORKS OPERATIONS.
2. THE MAXIMUM HEIGHT OF TOPSOIL STOCKPILES SHALL NOT EXCEED 2.5M AND THE MAXIMUM BATTER SLOPE SHALL NOT EXCEED 2H : 1V.
3. ALL EARTHWORKS OPERATIONS SHALL BE CARRIED OUT TO LEVEL 1 SUPERVISION IN ACCORDANCE WITH AS3798 - 2007. THE CONTRACTOR SHALL ISSUE A WRITTEN LETTER FROM THE GEOTECHNICAL CONSULTANT THAT THEY HAVE BEEN ENGAGED ACCORDINGLY AND TAKES FULL RESPONSIBILITY OF THE EARTHWORKS OPERATION.
4. THE CONTRACTOR SHALL OVER-EXCAVATE TO REMOVE ALL UNACCEPTABLE FILL MATERIAL CONTAINING DELETERIOUS MATERIALS SUCH AS ORGANIC MATTER AND CONSTRUCTION MATERIALS. ALL OVER-EXCAVATED AREAS SHALL BE REPLACED WITH SUITABLE MATERIAL WITH A CBR AT LEAST EQUAL TO THE SPECIFIED SUBGRADE CBR, SOURCED FROM ON SITE, IF AVAILABLE, OR IMPORTED.
5. WET MATERIAL WILL NOT BE REGARDED AS UNSUITABLE. SHOULD WET MATERIAL BE ENCOUNTERED, THE CONTRACTOR SHALL DRY THE MATERIAL SUFFICIENTLY BY RE-WORKING, OR SPREADING IT TO ALLOW DRYING. ALL ASSOCIATED COSTS SHALL BE BORNE BY THE CONTRACTOR.
6. ALL EXCESS EARTHWORKS MATERIALS, INCLUDING EXCESS MATERIALS FROM THE STORMWATER AND SERVICE TRENCH EXCAVATIONS SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE BY THE CONTRACTOR AT THE CONTRACTOR'S COST.
7. ALL BATTER SLOPES SHALL BE A MAXIMUM OF 1V:5H (U.N.O.)
8. UNLESS NOTED OTHERWISE OR APPROVED ALL FILL MUST BE CONSTITUTED OF VIRGIN EXCAVATED NATURAL MATERIAL (VENM).
9. THE CONTRACTOR SHALL EXCAVATE AND/OR PLACE AND COMPACT FILL TO CONFORM TO THE LINES, GRADES, CROSS SECTIONS, AND DIMENSIONS SHOWN ON THE DRAWINGS, ALLOWING FOR PAVEMENT/SLAB AND TOPSOIL LAYERS.
10. FREQUENCIES OF COMPACTION TESTS FOR EARTHWORKS SHALL BE AS FOLLOWS (WHICHEVER IS GREATER NUMBER):
    a. 1 TEST PER LAYER PER MATERIAL TYPE PER 2500 m^2, OR
    b. 1 TEST PER 500m^3, OR
    c. 3 TESTS PER LOT (MATERIAL TYPE AND MOISTURE).
12. COMPACTION REQUIREMENTS FOR EARTHWORKS SHALL BE AS FOLLOWS:
    a. GENERAL FILL : 95% OF SMDD
    b. TOP 500MM UNDER PAVEMENT OR STRUCTURE: 100% OF SMDD
    c. BACKFILL WITHIN 2M OF STRUCTURES: 100% OF SMDD
13. MOISTURE CONTENT TO BE IN THE RANGE OF - 2% TO +2% OF THE OPTIMUM MOISTURE CONTENT.
14. ALL COMPACTION TEST RESULTS SHALL BE PROVIDED TO THE SUPERINTENDENT.
15. ALL SITE REGRADED AREAS AFTER FORMATION, SHALL BE COVERED WITH A 150MM SELECT TOPSOIL LAYER. TOPSOIL STOCKPILED PRIOR TO EARTHWORKS OPERATIONS CAN BE REUSED FOR THIS PURPOSE PROVIDED ANY DELETERIOUS MATERIAL IS REMOVED PRIOR TO PLACING.
16. ALL DISTURBED AND DENUDED AREAS SHALL BE REGRASSED WITHIN 7 DAYS AFTER THE COMPLETION OF EARTHWORKS FORMATION.

STORMWATER NOTES:

1. STORMWATER DESIGN CRITERIA:
   MINOR STORM ARI: 20 YEARS
   MAJOR STORM ARI: 100 YEARS
   IFD DATA LOCALITY: FRENCHS FOREST
2. PIPES DN375 AND LARGER TO BE STEEL REINFORCED CONCRETE PIPES CLASS '2' APPROVED SPIGOT AND SOCKET WITH RUBBER RING JOINTS U.N.O.
3. PIPES DN300 AND SMALLER SHALL BE GRADE SH (SEWER GRADE) uPVC WITH RUBBER RING JOINTS.
4. EQUIVALENT STRENGTH FIBRE REINFORCED CONCRETE PIPES MAY BE USED UP TO DN450.
5. PIPES FOR SUB-SOIL DRAINS SHALL BE SLOTTED 100MM DIAMETER CLASS 1000 WRAPPED IN GEOFABRIC, U.O.N, COMPLYING WITH THE REQUIREMENTS OF AS2439.
6. PRECAST PITS, WHERE ALLOWED, AND THE INSITU BASE SHALL COMPLY WITH THE REQUIREMENT OF THE MANUFACTURER.
7. ALL MILD STEEL FIXTURES INCLUDING GRATES, FRAMES, STEP IRONS, LADDERS, ETC., SHALL BE HOT DIP GALVANISED. GALVANISING SHALL COMPLY WITH THE REQUIREMENTS OF AS 1214 OR AS 1650, AS APPROPRIATE.
8. GEOFABRIC FILTER SHALL BE PERMEABLE, NON-WOVEN FABRIC MANUFACTURED FROM A POLYMER SUCH AS POLYPROPYLENE OR POLYESTER OF MASS NOT LESS THAN 135G/M2.
9. THE MINIMUM TRENCH WIDTHS SHALL BE AS FOLLOWS:
   CONCRETE AND FRC PIPES: EXTERNAL PIPE DIAMETER PLUS 400MM.
   uPVC PIPE: EXTERNAL DIAMETER OF PIPE PLUS 200MM.
   SUBSOIL PIPE: 250MM.
10. ALL PIPES SHALL BE PLACED CENTRALLY WITHIN THE TRENCH WITH EQUAL CLEARANCE EACH SIDE.
11. PIPE BEDDING MATERIAL SHALL BE CLEAN COARSE RIVER SAND WITH DEPTH AS FOLLOWS:
    CONCRETE AND FRC PIPES: 100MM (175MM IN ROCK)
    UPVC PIPE: 75MM (100MM IN ROCK)
    SUBSOIL DRAINS: 50MM
12. ALL PIPES SHALL BE BACKFILLED WITH GRANULAR MATERIAL SUCH AS QUARRY FINES OR COARSE RIVER SAND TO A MINIMUM OF 150MM ABOVE THE PIPE. THE GRANULAR MATERIAL SHALL BE PLACED IN 150MM THICK MAXIMUM LAYERS AND COMPACTED TO ACHIEVE A DENSITY INDEX (ID) OF 70%. FREQUENCIES OF COMPACTION TESTS FOR TRENCHES SHALL BE 1 TEST PER 2 LAYERS PER 40 LINEAR METRE.
13. BACKFILL THE REMAINDER OF THE TRENCH ABOVE THE SAND TO SUBGRADE LEVEL WITH TRENCH MATERIAL. PLACE AND COMPACT MATERIALS IN LAYERS NOT EXCEEDING 150MM LOOSE THICKNESS. MATERIAL LOWER THAN 500MM BELOW SUBGRADE LEVEL SHALL BE COMPACTED TO AT LEAST 95% OF STANDARD MAXIMUM DRY DENSITY. THE TOP 500MM BELOW PAVEMENT SUBGRADE LEVELS SHALL BE COMPACTED TO AT LEAST 100% STANDARD MAXIMUM DRY DENSITY.
14. FILTER MATERIAL FOR SUBSOIL SHALL BE COARSE SAND OR CRUSHED STONE COMPLYING WITH ONE OF THE GRADINGS IN THE TABLE BELOW. WHERE NOTED ON THE DRAWINGS THE 7MM CRUSHED ROCK FILTER MATERIAL SHALL BE ENCLOSED WITHIN FILTER FABRIC SHEET AS SPECIFIED. FILTER MATERIAL SHALL BE PLACED IN 250MM LAYERS AND COMPACTED TO DENSITY INDEX (ID) OF 60%.

AS SIEVE SIZE (mm)	SAND	7mm ROCK
9.5	100	100
6.7	-	75-100
4.75	90-100	20-55
2.36	75-100	0-15
1.18	50-90	
0.6	20-60	
0.3	10-30	
0.15	2-10	
0.075	0-3	0-2

15. UNLESS OTHERWISE DETAILED OR PERMITTED, THE MINIMUM GRADE OF ALL PIPE WORKS SHALL BE 1.0%, AND HAVE MINIMUM 300mm COVER.

SERVICES NOTES:

1. IT IS THE CONSTRUCTORS RESPONSIBILITY TO NOTIFY THE RELEVANT SERVICES AUTHORITIES OF THE WORKS AND VERIFY THE LOCATION OF ALL EXISTING SERVICES PRIOR TO ANY CONSTRUCTION ACTIVITIES COMMENCING.
2. THE CONSTRUCTOR SHALL LIAISE AND COORDINATE THE TIMING OF THE CONSTRUCTION OF THE WORKS WITH THE RELEVANT SERVICES AUTHORITIES AND/OR OTHER CONSTRUCTORS INSTALLING SERVICES CONCURRENTLY AT THIS SITE.
3. THE LOCATION OF ALL EXISTING SERVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE ONLY AND HAVE BEEN TAKEN FROM INFORMATION PROVIDED BY THE RELEVANT SERVICE AUTHORITIES.
4. THE CONSTRUCTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE CAUSED TO EXISTING SERVICES AS A RESULT OF THE CONSTRUCTION WORKS.

LEGEND

- CONTROL — ROAD CONTROL LINE
- BOUNDARY
- K&G — KERB & GUTTER (K&G) TO COUNCIL STANDARDS DWG SD.14
- K.O. — KERB ONLY (K.O.) TO COUNCIL STANDARDS DWG SD.14
- S.K — SLOTTED KERB (S.K) TO COUNCIL STANDARDS DWG SD.49
- V.C. — VEHICULAR CROSSING (V.C.) TO COUNCIL STANDARDS DWG SD.15
- RETAINING WALL
- TOP OF BATTER
- BOTTOM OF BATTER
- 88.4 — FINISHED SURFACE CONTOUR
- 88.4 — EXISTING SURFACE CONTOUR
- SS F.P. SS — STORMWATER SUBSOIL DRAINAGE WITH FLUSHING POINT
- E E — PROPOSED ELECTRICAL / CONDUITS
- PROPOSED STORMWATER DRAINAGE LINE
- SW SW — EXISTING STORMWATER DRAINAGE
- GGP GSIP JP — STORMWATER DRAINAGE PITS
- RL91.86 — FINISHED SURFACE LEVEL
- GRL91.86 — FINISHED STORMWATER PIT LID/GRATE LEVEL

PAVEMENT NOTES:

1. FOR RIGID PAVEMENT REFER TO CONCRETE PAVEMENT NOTES.
2. BASE MATERIAL, UNLESS NOTED OTHERWISE, SHALL BE UNBOUND DGB20 MATERIAL AS SPECIFIED IN THE RTA 3051.
3. SUBBASE MATERIAL, UNLESS NOTED OTHERWISE, SHALL BE UNBOUND DGS40 MATERIAL AS SPECIFIED IN THE RTA 3051.
4. SELECT MATERIAL, IF SPECIFIED, SHALL BE CRUSHED ROCK, NATURAL GRAVELS OR SUITABLE SOILS, AND THE MATERIALS SHALL BE FREE OF ORGANIC MATTER AND OTHER OBJECTIONABLE OR DELETERIOUS SUBSTANCES. THE MATERIALS SHALL HAVE A MAXIMUM PARTICLE SIZE OF 75MM, AND SHALL HAVE A MINIMUM CBR OF 15% AT 100% STANDARD MAXIMUM DRY DENSITY.
5. FREQUENCIES OF COMPACTION TESTS FOR PAVEMENT CONSTRUCTION SHALL BE AS FOLLOWS (TESTS PER LAYER AND WHICHEVER IS GREATER NUMBER):
   a. 1 TEST PER 50m LENGTH OF ROAD, OR
   b. 1 TEST PER 400m2.
6. COMPACTION REQUIREMENTS FOR PAVEMENT CONSTRUCTION SHALL BE AS FOLLOWS:
   a. BASE AND SUBBASE: 98% OF MMDD TO AS 1289 E2.1
   b. SELECT AND SUBGRADE: 100% OF SMDD
7. THE PRIMER TO BE USED SHALL BE MEDIUM CURING CUTBACK BITUMEN COMPLYING WITH THE REQUIREMENTS OF AS 2157. THE GRADE OF CUTBACK BITUMEN SHOULD BE AMC 0.
8. AGGREGATES FOR THE SEAL SHALL BE ONE-SIZED OF THE NOMINAL SIZE AND CLASS SPECIFIED ON DRAWING. THESE AGGREGATES SHALL BE PRECOATED WITH A BITUMEN BASED PRECOATING MATERIAL.
9. UNLESS OTHERWISE SPECIFIED OR DIRECTED, BITUMINOUS EMULSION FOR TACK COATING SHALL BE DESIGNATION CRS/170 COMPLYING WITH THE REQUIREMENTS OF AS 1160.
10. ASPHALTIC CONCRETE AS SPECIFIED ON THE DRAWING SHALL COMPLY WITH AS 2150 -ASPHALT (HOT-MIXED).
11. UNLESS OTHERWISE NOMINATED IN THE DRAWINGS, BINDER SHALL BE CLASS 320 BITUMEN COMPLYING WITH THE REQUIREMENTS OF AS 2008.
12. ANY OTHER BITUMEN TYPE WHERE CALLED UP IN THE DRAWING SHALL MEET THE REQUIREMENTS AS SET OUT IN THE RMS MATERIALS SPECIFICATIONS 3252 OR 3253.

CAD FILENAME Q:\C&M\Projects\02101-02200\PN-02192 - WARRIEWOOD ROAD 45-49 WARRIEWOOD\ACAD\02192_100.dwg

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02	T.T.	16/03/2020	E.S.	ISSUE FOR DA
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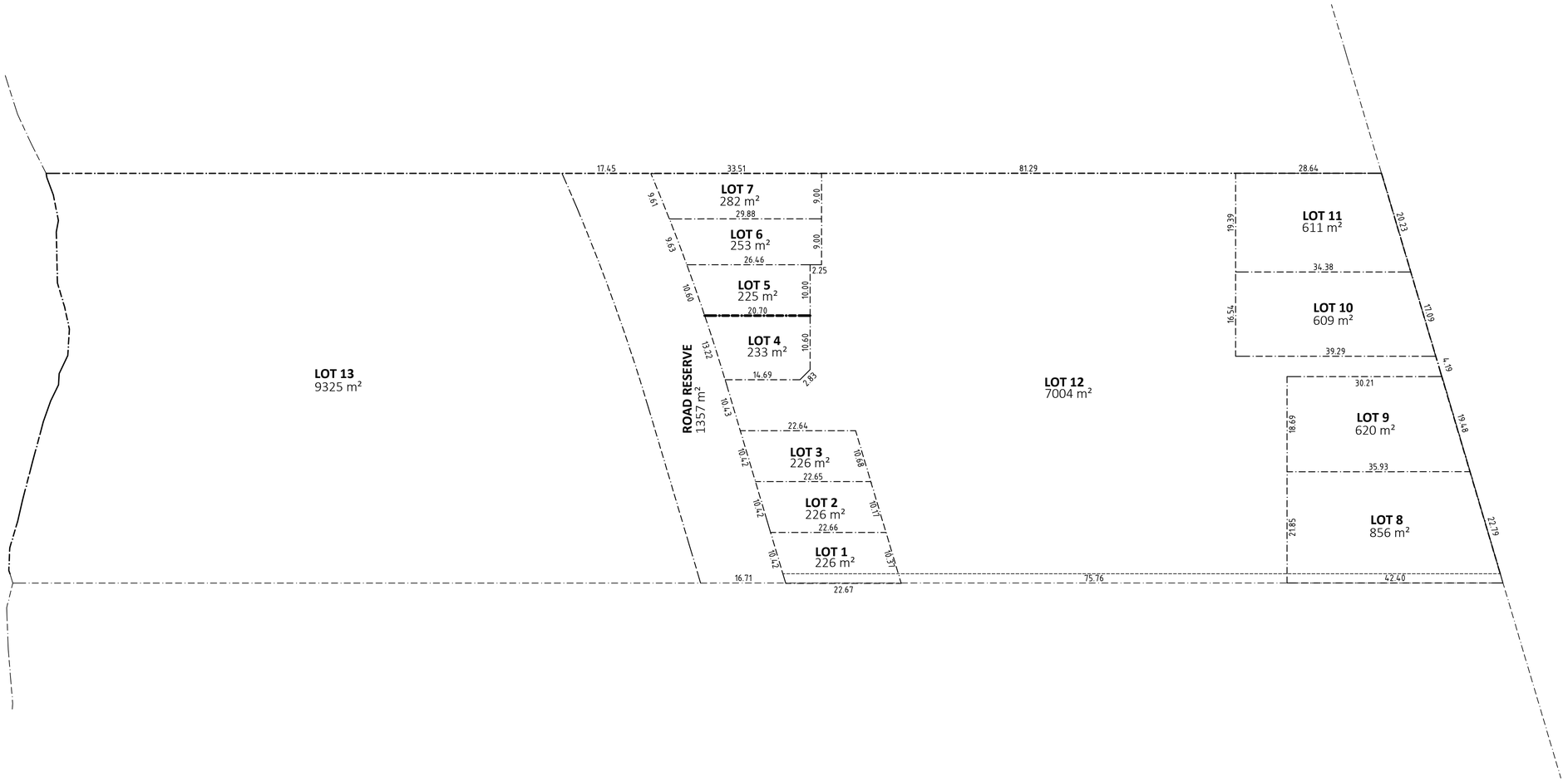
SCALE @ A1	NILL

45-49 WARRIEWOOD RD, WARRIEWOOD

GENERAL NOTES AND LEGEND

STATUS DEVELOPMENT APPLICATION | DRAWING No. 02192_110 | REVISION 02

A1



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VERIFIER	E.S.
DATE	JAN 2020
LGA	NORTHERN BEACHES
SCALE @ A1	1:500

45-49 WARRIEWOOD RD, WARRIEWOOD

LOT LAYOUT PLAN

STATUS	DRAWING No.	REVISION
DEVELOPMENT APPLICATION	02192_120	02

A1

MAKE SMOOTH CONNECTION TO EXISTING

UP INV. 4.80 300Φ uPVC 12.5m @ 1.0% DN INV. 4.65
UP INV. 4.95 300Φ uPVC 6.0m @ 1.7% DN INV. 4.85
UP INV. 5.10 300Φ uPVC 6.6m @ 1.5% DN INV. 5.00
UP INV. 5.40 300Φ uPVC 9.5m @ 1.1% DN INV. 5.30
UP INV. 5.55 225Φ uPVC 6.5m @ 1.5% DN INV. 5.45
UP INV. 5.70 225Φ uPVC 6.5m @ 1.5% DN INV. 5.60
UP INV. 5.85 225Φ uPVC 6.5m @ 1.5% DN INV. 5.75
UP INV. 6.20 225Φ uPVC 9.5m @ 1.1% DN INV. 6.10
UP INV. 6.35 225Φ uPVC 6.5m @ 1.5% DN INV. 6.25

7.5KL UNDERGROUND RAINWATER TANK
10KL UNDERGROUND RAINWATER TANK
7.5KL UNDERGROUND RAINWATER TANK

PROVIDE 'OCEANGUARD 200' FROM OCEANPROJECTS TO ALL STORMWATER PITS

FFL6.02 FFL6.62 FFL7.42

LOT 7 282 m²
LOT 6 253 m²
LOT 5 225 m²
LOT 4 233 m²
LOT 3 226 m²
LOT 2 226 m²
LOT 1 226 m²
LOT 11 611 m²
LOT 10 609 m²
LOT 9 620 m²
LOT 8 856 m²

UP INV. 4.60 300Φ uPVC 15.0m @ 1.0% DN INV. 4.45
UP INV. 4.40 300Φ uPVC 4.0m @ 1.3% DN INV. 4.35
UP INV. 4.30 300Φ uPVC 18.5m @ 1.6% DN INV. 4.00
UP INV. 4.50 300Φ uPVC 7.5m @ 2.7% DN INV. 4.30
UP INV. 5.00 300Φ uPVC 23m @ 2.0% DN INV. 4.55
UP INV. 5.30 300Φ uPVC 10m @ 2.5% DN INV. 5.05
UP INV. 5.90 225Φ uPVC 10m @ 1.0% DN INV. 5.80
UP INV. 6.10 225Φ uPVC 7.0m @ 2.1% DN INV. 5.95
UP INV. 6.70 225Φ uPVC 13.5m @ 1.50% DN INV. 6.50
UP INV. 6.90 225Φ uPVC 14.0m @ 1.1% DN INV. 6.75
UP INV. 7.20 225Φ uPVC 5.0m @ 5.0% DN INV. 6.95
UP INV. 7.65 150Φ uPVC 16.0m @ 2.5% DN INV. 7.25

UNDERGROUND OSD
PIPE OVER BASEMENT SLAB (RL5.75)
CAR PARKING BAYS
INDICATIVE DRIVEWAY
EXISTING KERB & GUTTER
KERB RAMP
BATTER 3:1 (TYP)
LORIKEET
WARRIEWOOD RD

UP INV. 3.00 375Φ RCP 8.5m @ 1.8% DN INV. 2.85
INFILTRATION BASIN MIN AREA = 250m² BED RL2.85
REFER DWG 623 FOR DETAILS
BASIN BATTER 5:1 (TYP)
RIPRAP OVERFLOW
UP INV. 3.40 375Φ RCP 14.0m @ 1.0% DN INV. 3.26
UP INV. 3.23 375Φ RCP 9.0m @ 1.0% DN INV. 3.14
UP INV. 3.11 375Φ RCP 7.5m @ 1.0% DN INV. 3.03
UP INV. 4.45 300Φ uPVC 10m @ 1.2% DN INV. 4.33
UP INV. 4.45 300Φ uPVC 24.5m @ 1.2% DN INV. 4.15

PROVIDE HEADWALL WITH ROCK LINED ENERGY DISSIPATER
MAKE SMOOTH CONNECTION TO EXISTING
PROVIDE 900Φ PIPE WITHIN THE EASEMENT

UP INV. 2.77 900Φ RCP 7.0m @ 1.0% DN INV. 2.70
UP INV. 2.88 900Φ RCP 8.0m @ 1.0% DN INV. 2.80
UP INV. 3.38 900Φ RCP 30.0m @ 1.5% DN INV. 2.93
UP INV. 4.80 300Φ uPVC 6.5m @ 1.5% DN INV. 4.70
UP INV. 4.95 300Φ uPVC 6.5m @ 1.5% DN INV. 4.85
UP INV. 5.10 225Φ uPVC 9.5m @ 1.1% DN INV. 5.00
UP INV. 5.25 225Φ uPVC 6.5m @ 1.5% DN INV. 5.15
UP INV. 5.40 225Φ uPVC 6.5m @ 1.5% DN INV. 5.30
UP INV. 5.40 900Φ RCP 73.0m @ 2.70% DN INV. 3.43
UP INV. 5.80 225Φ uPVC 6.5m @ 1.5% DN INV. 5.70
UP INV. 5.95 225Φ uPVC 9.5m @ 1.1% DN INV. 5.85
UP INV. 6.10 225Φ uPVC 6.5m @ 1.5% DN INV. 6.00
UP INV. 9.20 900Φ RCP 43.0m @ 8.60% DN INV. 5.50
UP INV. 9.80 900Φ RCP 7.5m @ 1.30% DN INV. 9.70

UP INV. 7.40 150Φ uPVC 11m @ 1.4% DN INV. 7.25
UP INV. 7.20 225Φ uPVC 15m @ 6.0% DN INV. 6.30
CONSTRUCT NEW GALLY PIT OVER THE EXISTING PIPE
REMOVE EXISTING PIT AND REDUNDANT PIPE AND HEADWALL
EXISTING PIPE

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REV.	DES.	DATE	VER.	DESCRIPTION
03	T.T.	24/09/2020	E.S.	INFILTRATION BASIN SHAPE MODIFIED TO COUNCIL REQUIREMENT
02	T.T.	16/03/2020	E.S.	ISSUE FOR DA
01	T.T.	28/02/2020	E.S.	ISSUE FOR COORDINATION

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C&M CONSULTING ENGINEERS
CIVIL AND HYDRAULIC ENGINEERING DESIGN AND PROJECT MANAGEMENT
SUITE 26
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PHONE: (02) 9680 3100
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ABN 21 118 134 240

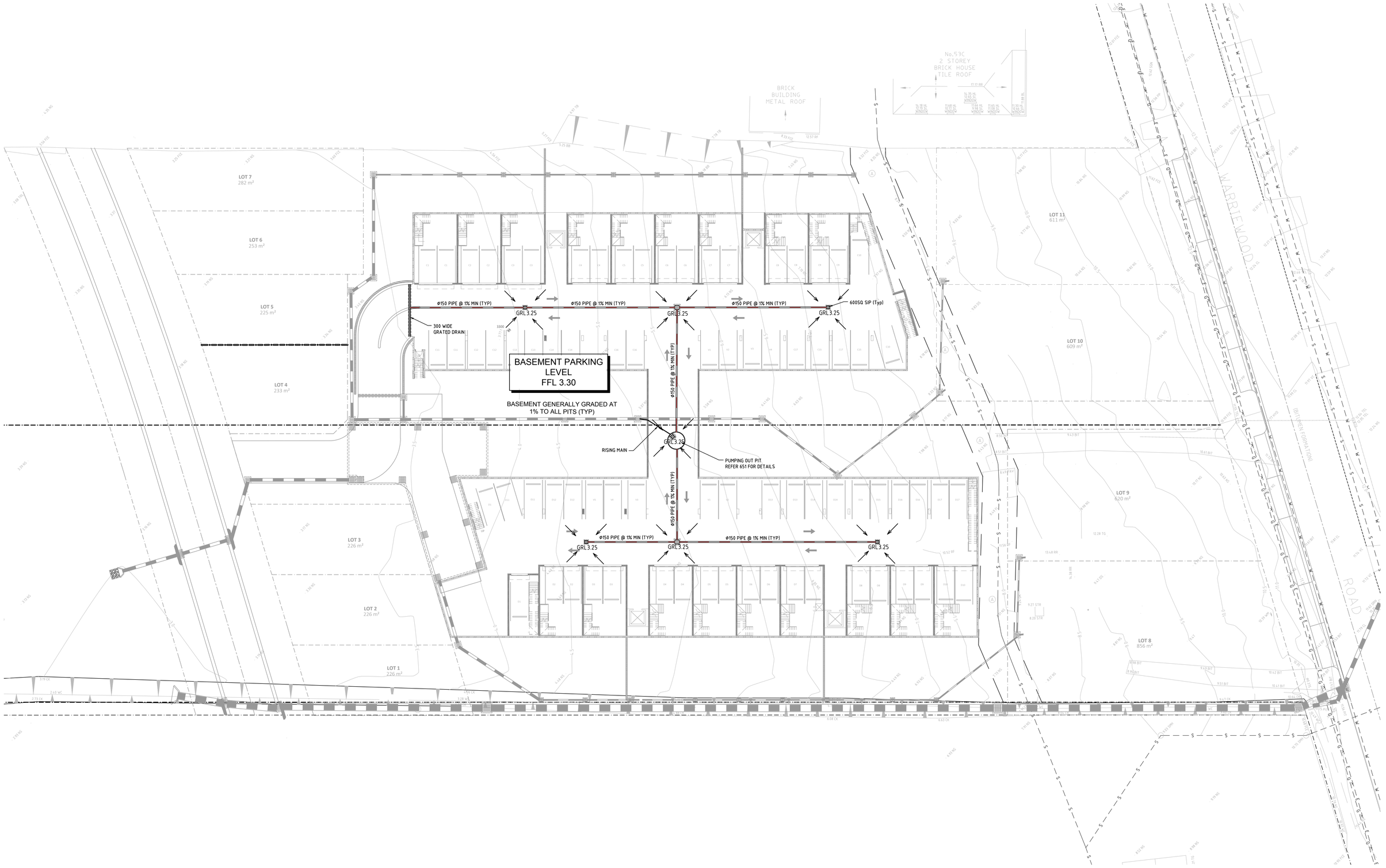
DESIGNER	T.T.
DATE	JAN 2020
ENGINEER	E.S.
LGA	NORTHERN BEACHES
VERIFIER	E.S.
SCALE @ A1	1:250

45-49 WARRIEWOOD RD, WARRIEWOOD

GENERAL ARRANGEMENT PLAN - GROUND LEVEL

STATUS	DRAWING No.	REVISION
DEVELOPMENT APPLICATION	02192_201	03

A1



CAD FILENAME: I:\DATA\CMCE Projects\PN-02192 - WARRIEWOOD ROAD 45-49 WARRIEWOOD\ACAD\02192_202.dwg

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DESIGNER	T.T.
ENGINEER	E.S.
VERIFIER	E.S.
DATE	JAN 2020
LGA	NORTHERN BEACHES
SCALE @ A1	1:250

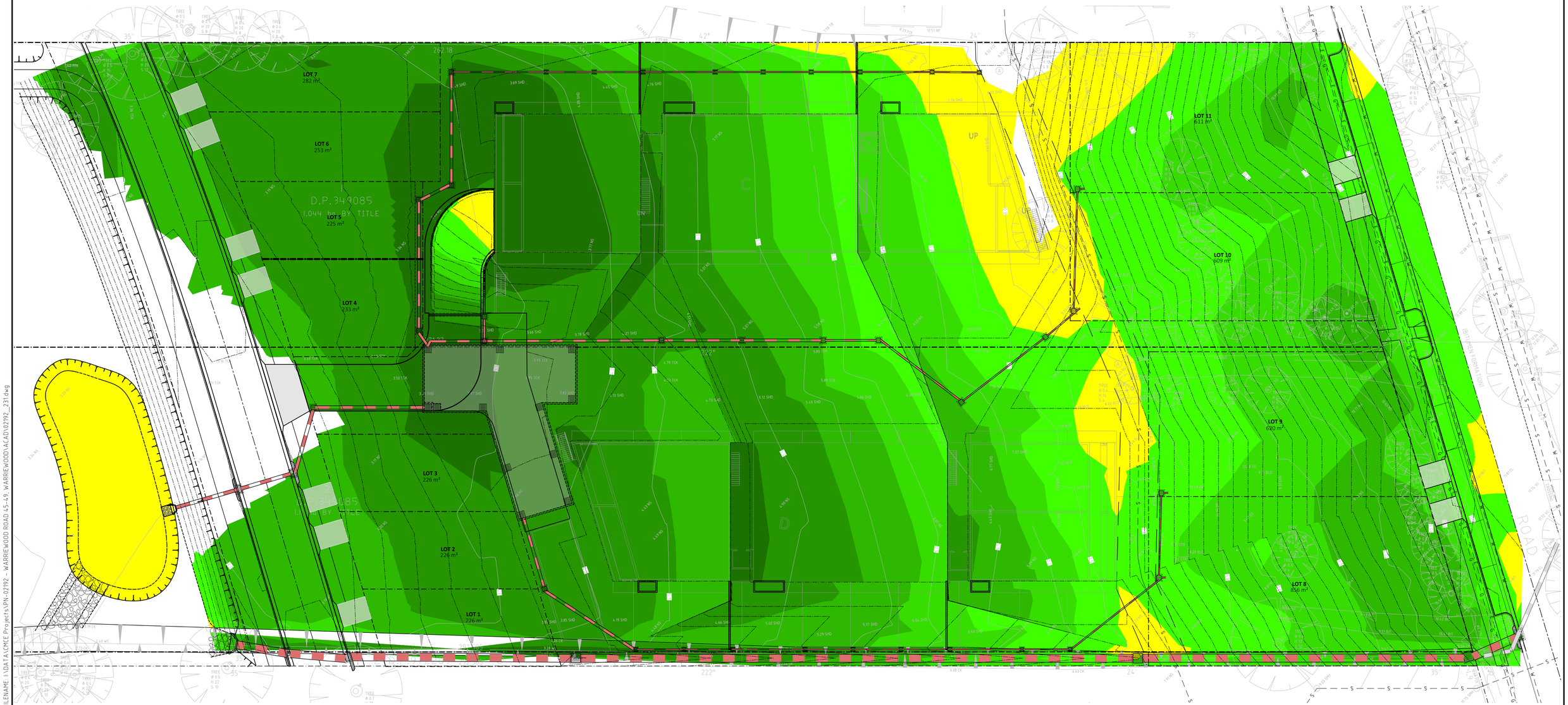
45-49 WARRIEWOOD RD, WARRIEWOOD

GENERAL ARRANGEMENT PLAN - BASEMENT

STATUS	DRAWING No.	REVISION
DEVELOPMENT APPLICATION	02192_202	02

A1

Levels Table				
No.	From Depth	To Depth	Colour	Depth Range Volume
1	-0.857	0.000		141m³
2	0.000	0.500		6075m³
3	0.500	1.000		4645m³
4	1.000	1.500		3031m³
5	1.500	2.000		1356m³
6	2.000	3.000		137m³



CAD FILENAME: I:\DATA\CMCE Projects\PN-02192 - WARRIEWOOD ROAD 45-49 WARRIEWOOD\ACAD\02192_231.dwg

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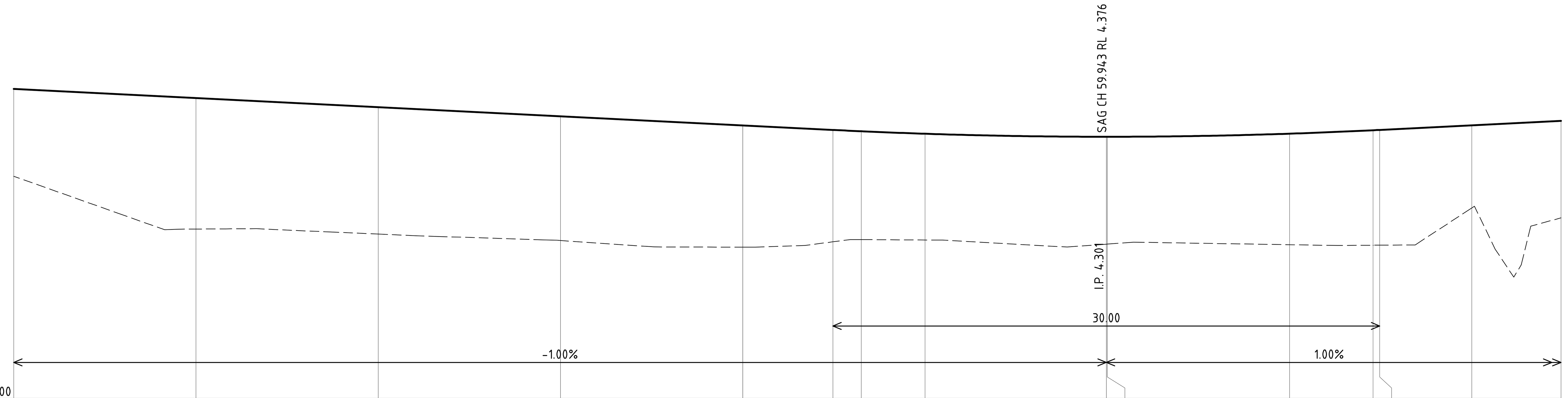
DESIGNER	T.T.	DATE	JAN 2020
ENGINEER	E.S.	LGA	NORTHERN BEACHES
VERIFIER	E.S.	SCALE @ A1	1:250

45-49 WARRIEWOOD RD, WARRIEWOOD

BULK EARTHWORKS PLAN

STATUS	DRAWING No.	REVISION
DEVELOPMENT APPLICATION	02192_231	03

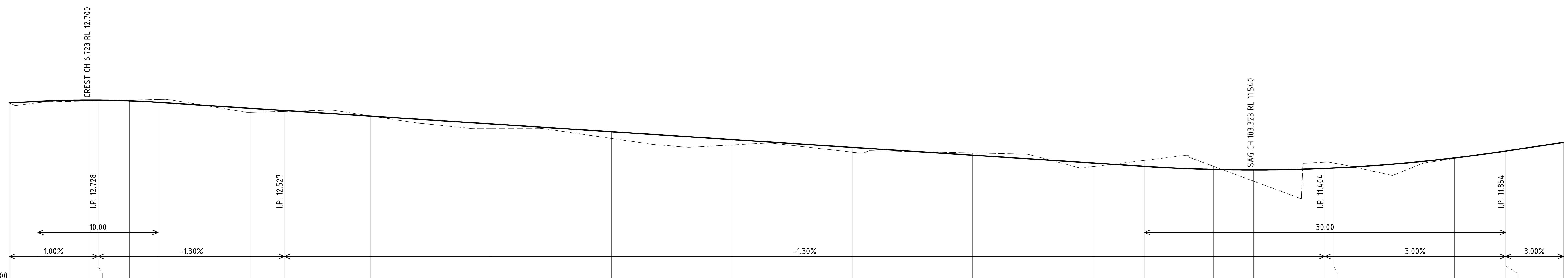
A1



CUT / FILL DEPTHS ALONG CONTROL LINE	+0.957	+1.437	+1.392	+1.362	+1.336	+1.228	+1.188	+1.166	+1.179	+1.178	+1.218	+1.261	+1.265	+0.906	+1.064
DESIGN SURFACE LEVEL ALONG CONTROL LINE	4.900	4.800	4.700	4.600	4.500	4.451	4.436	4.409	4.376	4.376	4.409	4.447	4.451	4.501	4.550
EXISTING SURFACE LEVEL ALONG CONTROL LINE	3.943	3.363	3.308	3.238	3.164	3.223	3.248	3.243	3.197	3.198	3.191	3.186	3.186	3.595	3.486
CHAINAGE ALONG CONTROL LINE	0.000	10.000	20.000	30.000	40.000	44.943	46.501	50.000	59.943	60.000	70.000	74.577	74.943	80.000	84.886

LORIKEET ROAD - LONGITUDINAL SECTION

SCALE 1:200 (H) & 1:40 (V)



CUT / FILL DEPTHS ALONG CONTROL LINE	+0.000	+0.023	+0.013	+0.010	-0.013	-0.047	+0.067	+0.015	-0.004	+0.073	+0.111	+0.089
DESIGN SURFACE LEVEL ALONG CONTROL LINE	12.654	12.678	12.700	12.699	12.687	12.663	12.564	12.527	12.434	12.304	12.174	12.044
EXISTING SURFACE LEVEL ALONG CONTROL LINE	12.654	12.655	12.687	12.689	12.700	12.710	12.497	12.512	12.438	12.231	12.063	11.955
CHAINAGE ALONG CONTROL LINE	0.000	2.375	6.723	7.375	10.000	12.375	20.000	22.855	30.000	40.000	50.000	60.000

CUT / FILL DEPTHS ALONG CONTROL LINE	+0.079	-0.038	+0.059	-0.099	-0.052	+0.187	-0.103	-0.081	+0.011	-0.001	-0.001	+0.000
DESIGN SURFACE LEVEL ALONG CONTROL LINE	11.914	11.784	11.654	11.599	11.547	11.540	11.565	11.572	11.739	11.854	11.854	11.997
EXISTING SURFACE LEVEL ALONG CONTROL LINE	11.835	11.822	11.595	11.698	11.599	11.353	11.668	11.653	11.728	11.855	11.855	11.997
CHAINAGE ALONG CONTROL LINE	70.000	80.000	90.000	94.253	100.000	103.323	109.253	110.000	120.000	124.253	124.254	129.046

WARRIEWOOD ROAD - LONGITUDINAL SECTION

SCALE 1:200 (H) & 1:40 (V)

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ABN 21 118 134 240

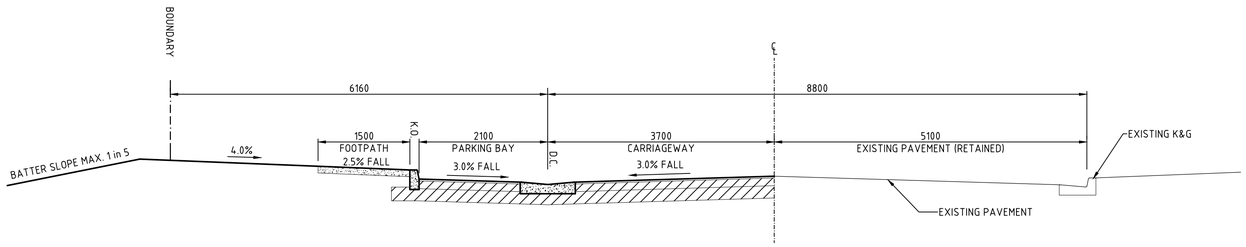
DESIGNER	T.T.	DATE	JAN 2020
ENGINEER	E.S.	LGA	NORTHERN BEACHES
VERIFIER	E.S.	SCALE @ A1	AS NOTED

45-49 WARRIEWOOD RD, WARRIEWOOD

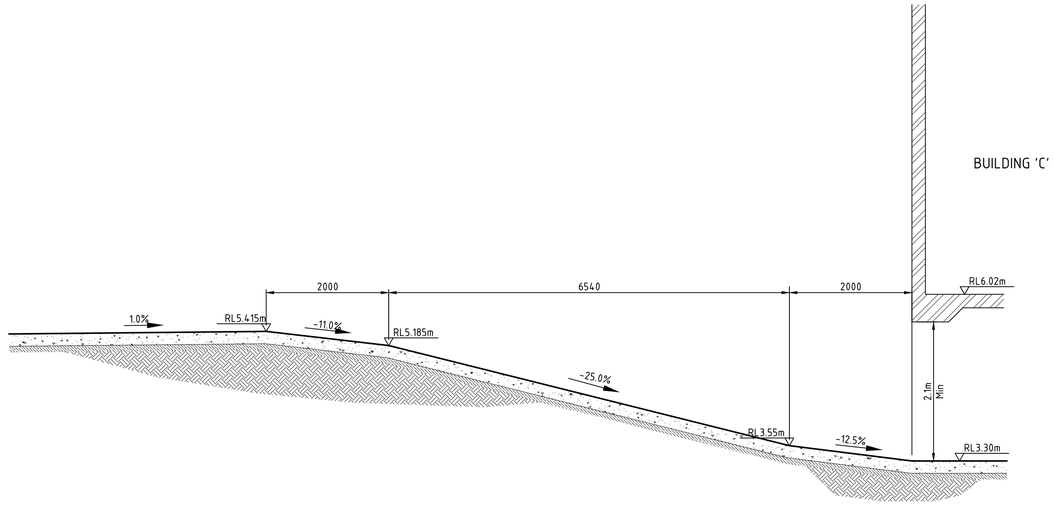
ROAD LONGITUDINAL SECTIONS

STATUS DEVELOPMENT APPLICATION | DRAWING No. 02192__301 | REVISION 02

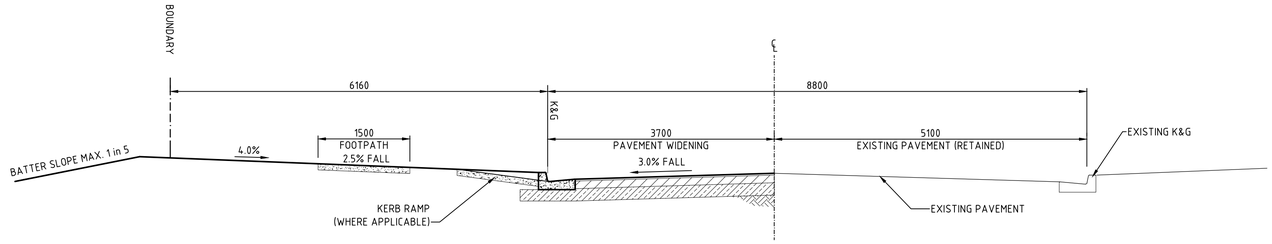
A1



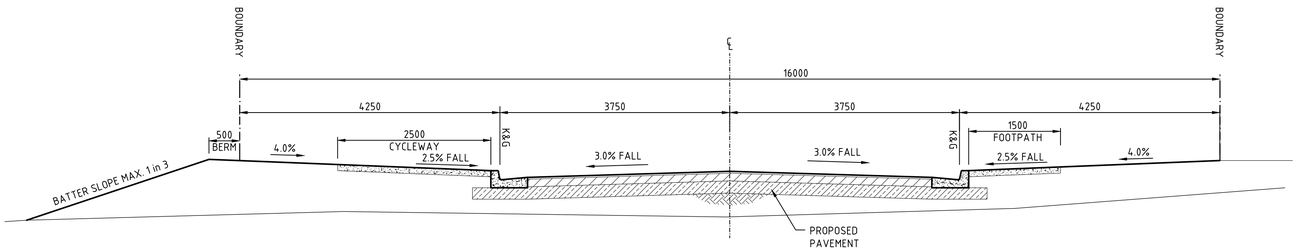
SECTION C 201 WARRIEWOOD RD WITH PARKING
SCALE 1:50



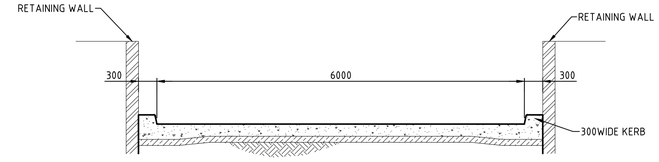
SECTION F 201 BASEMENT RAMP
SCALE 1:50



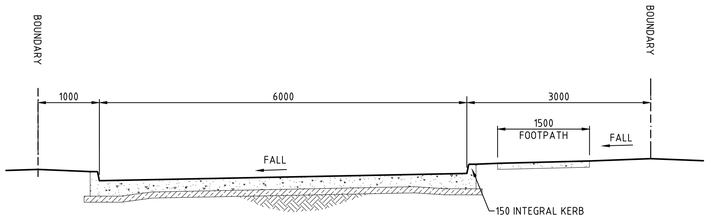
SECTION B 201 WARRIEWOOD ROAD
SCALE 1:50



SECTION A 201 LORRIKEET ST
SCALE 1:50



SECTION E 201
SCALE 1:50



SECTION D 201
SCALE 1:50

SCALE 1:50

CAD FILENAME Q:\C&M\Projects\02101-02200\PN-02192 - WARRIEWOOD ROAD 45-49_WARRIEWOOD\ACAD\02192_401.dwg

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ABN 21 118 134 240

DESIGNER	T.T.
DATE	JAN 2020
ENGINEER	E.S.
LGA	NORTHERN BEACHES
VERIFIER	E.S.
SCALE @ A1	1:50

45-49 WARRIEWOOD RD, WARRIEWOOD

TYPICAL SECTIONS

STATUS	DRAWING No.	REVISION
DEVELOPMENT APPLICATION	02192_201	02

A1

CATCHMENT 3
AREA = 1785m²

CATCHMENT 1
AREA = 5600m²

CATCHMENT 6
Environmental Area
AREA = 9100m²

CATCHMENT 2
AREA = 3735m²

CATCHMENT 4 - Lorikeet Gr
AREA = 1330m²

CATCHMENT 5 - Drainage Reserve
AREA = 533m² (300m2 within Development Area)

UNDERGROUND OSD

LORIKEET GR

WARRIEWOOD RD

LOT 1 226 m²
LOT 2 226 m²
LOT 3 226 m²
LOT 4 233 m²
LOT 5 225 m²
LOT 6 243 m²
LOT 7 282 m²
LOT 8 856 m²
LOT 9 620 m²
LOT 10 609 m²
LOT 11 611 m²

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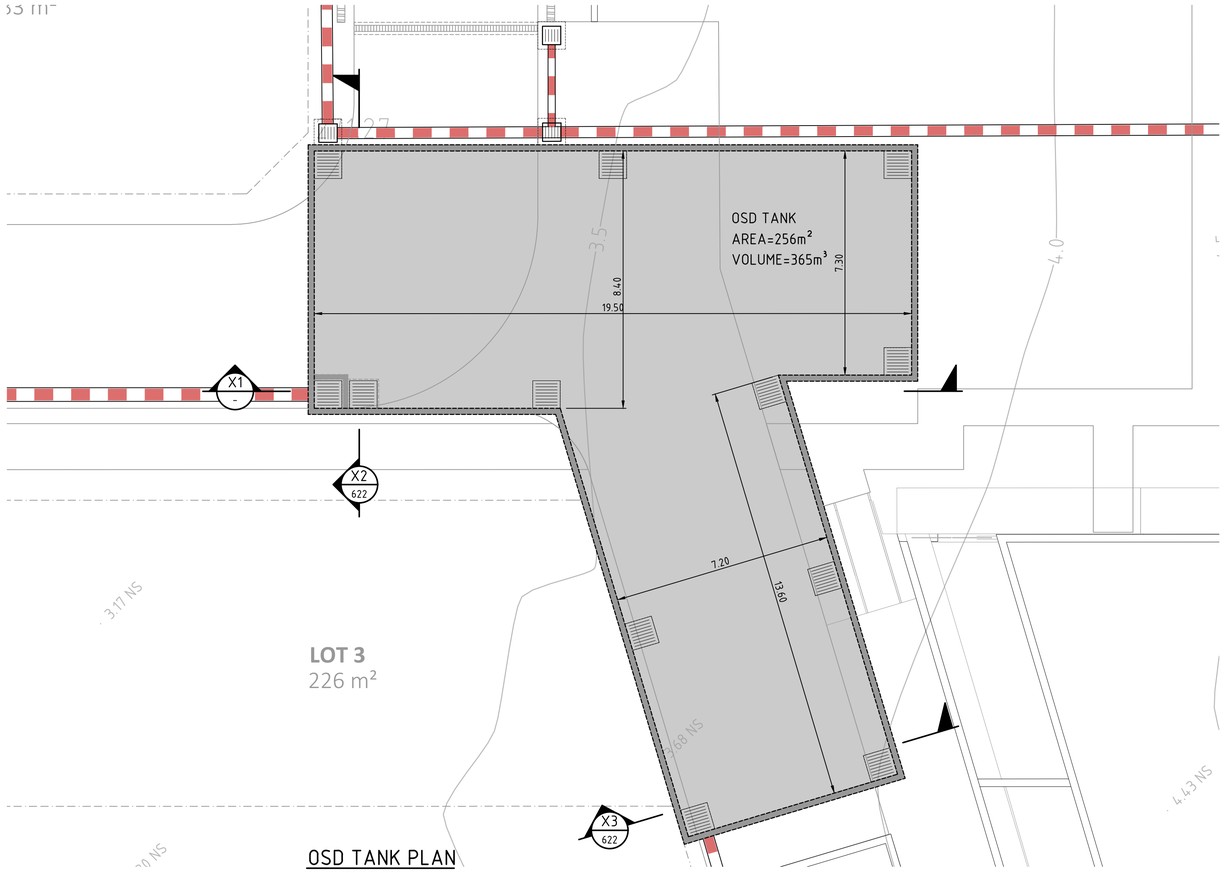
ENGINEER	E.S.
VERIFIER	E.S.
DATE	JAN 2020
LGA	NORTHERN BEACHES
SCALE @ A1	1:250

45-49 WARRIEWOOD RD, WARRIEWOOD

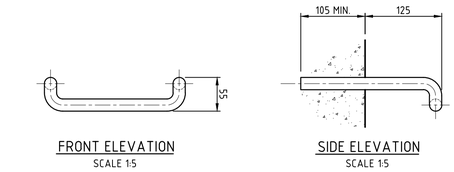
CATCHMENT PLAN

STATUS	DRAWING No.	REVISION
DEVELOPMENT APPLICATION	02192_601	02

A1

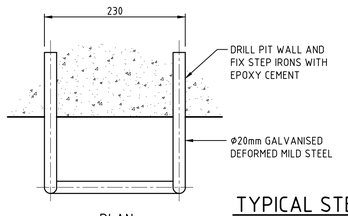


OSD TANK PLAN
SCALE 1:100



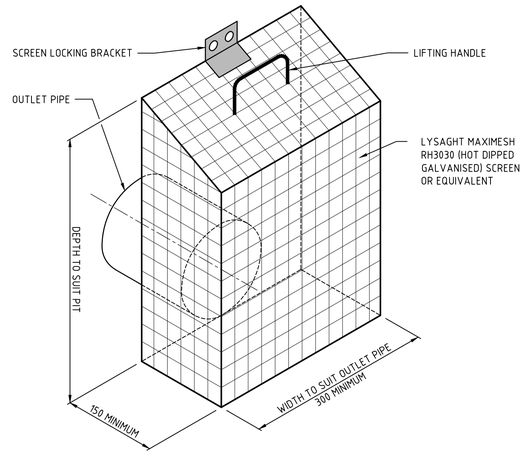
FRONT ELEVATION
SCALE 1:5

SIDE ELEVATION
SCALE 1:5

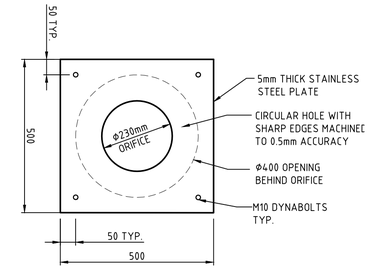


PLAN
SCALE 1:5

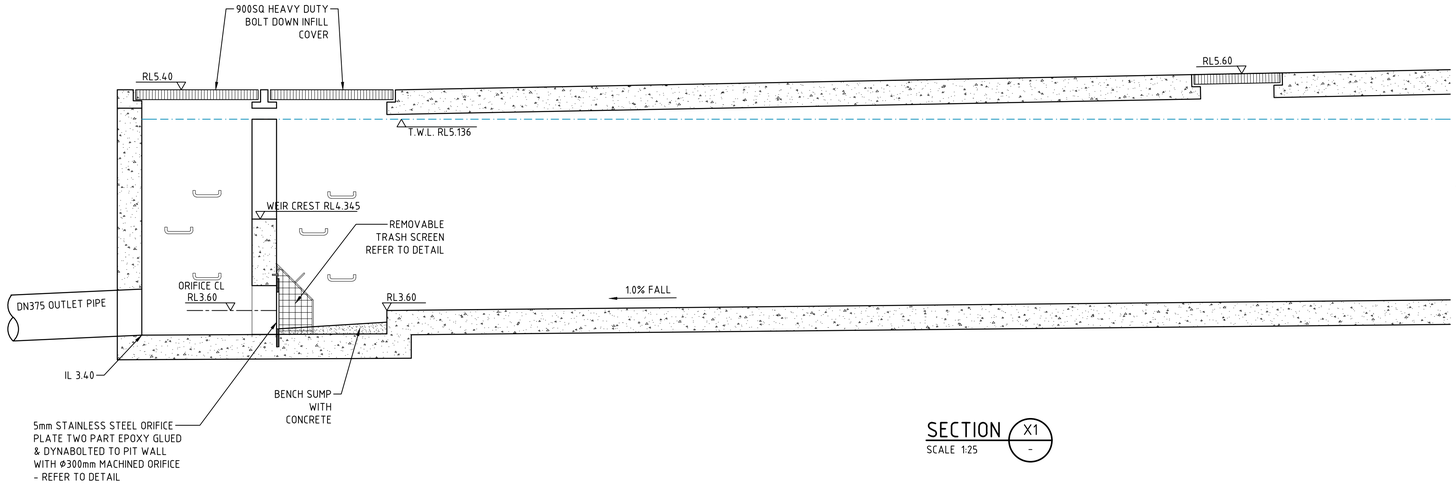
TYPICAL STEP IRON DETAIL
SCALE 1:5



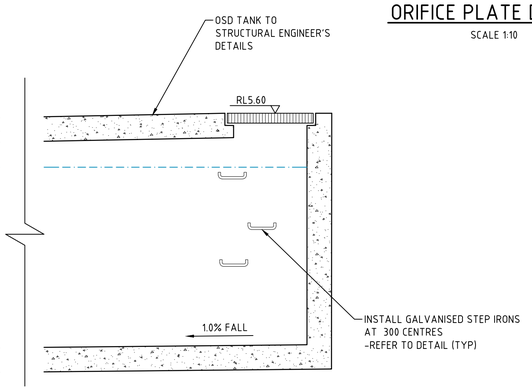
TRASH SCREEN DETAIL (TYPICAL)
SCALE 1:5

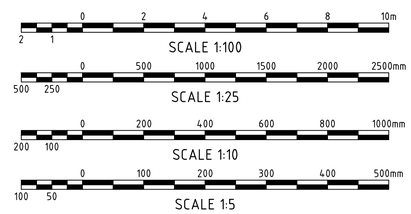


ORIFICE PLATE DETAIL
SCALE 1:10



SECTION X1 -
SCALE 1:25





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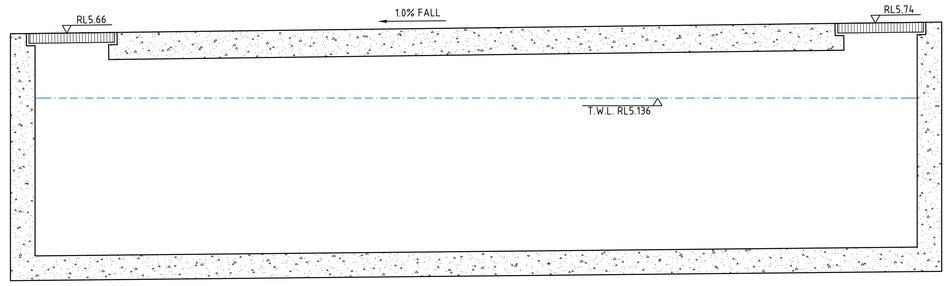
VERIFIER	E.S.	SCALE @ A1	1:250

45-49 WARRIEWOOD RD, WARRIEWOOD

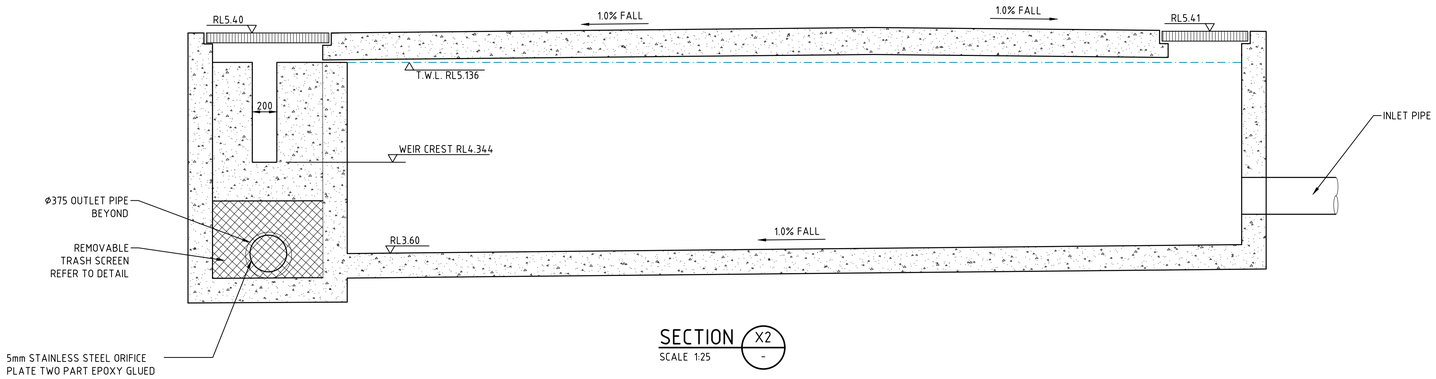
STORMWATER OSD TANK DETAILS - SHEET 1

STATUS	DRAWING No.	REVISION
DEVELOPMENT APPLICATION	02192_621	02

A1



SECTION X3
SCALE 1:25



SECTION X2
SCALE 1:25

0 500 1000 1500 2000 2500mm
500 250
SCALE 1:25

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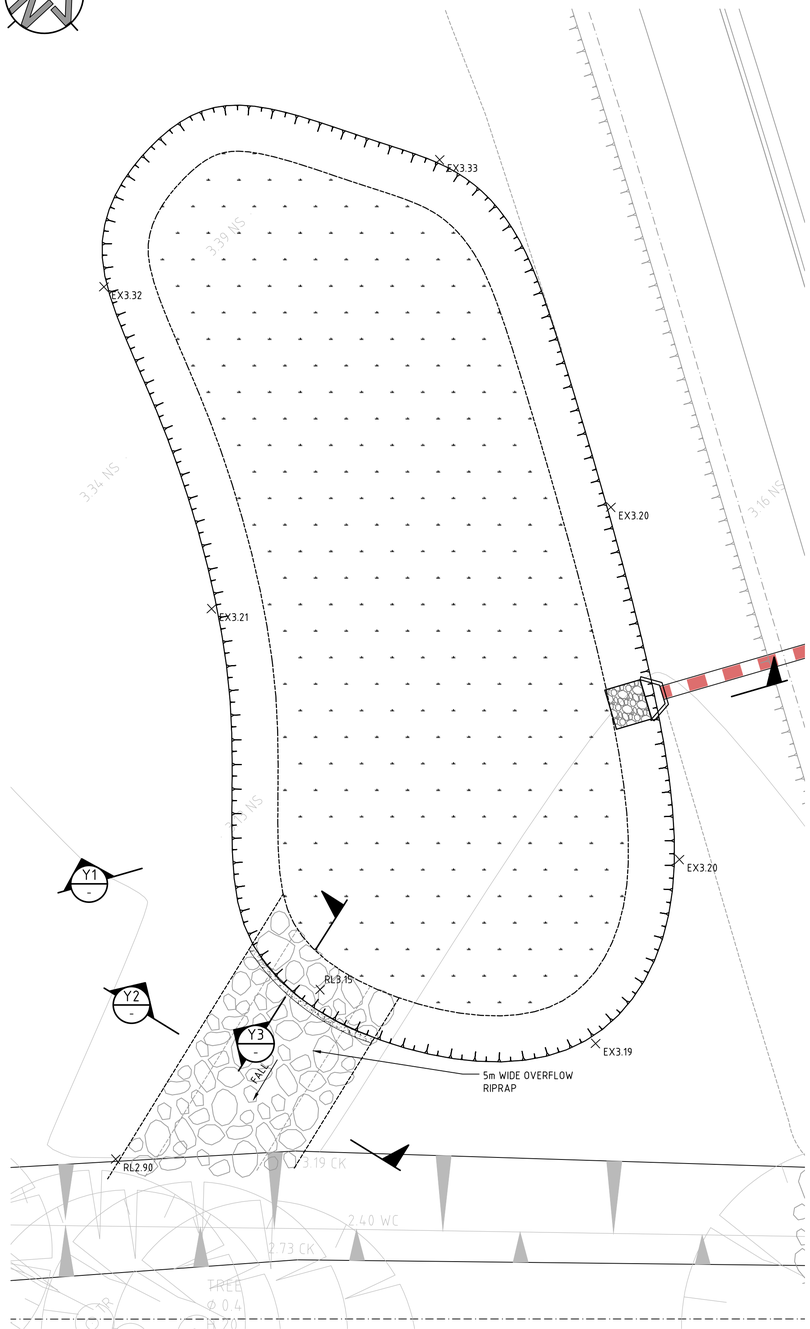
VERIFIER	E.S.
SCALE @ A1	1:250

45-49 WARRIEWOOD RD, WARRIEWOOD

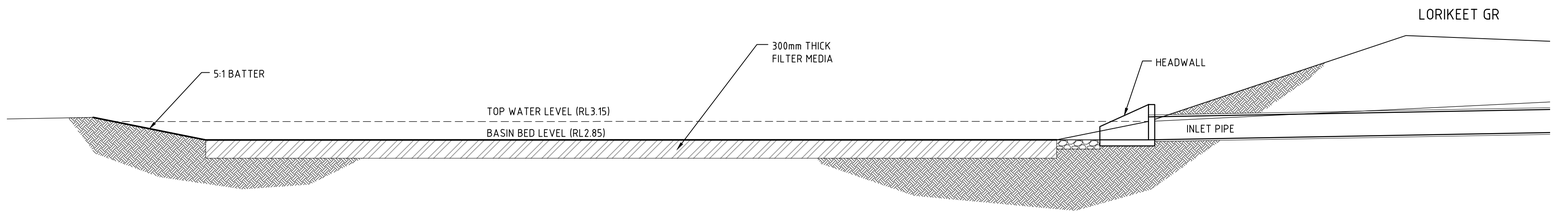
STORMWATER OSD TANK DETAILS - SHEET 2

STATUS DEVELOPMENT APPLICATION
DRAWING No. 02192_622
REVISION 02

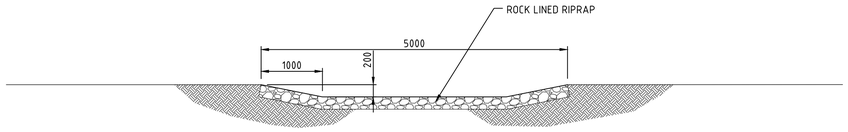
A1



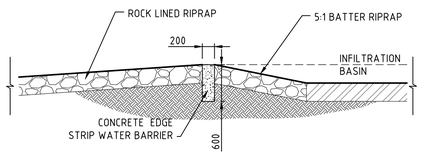
INFILTRATION BASIN
SCALE 1:100



SECTION Y1
SCALE 1:50



SECTION Y2
SCALE 1:50



SECTION Y3
SCALE 1:50

INFILTRATION SYSTEM NOTES

FILTER MATERIAL

- THE FILTER MATERIAL IS TO CONSIST OF A SANDY-LOAM SOIL. THE SATURATED HYDRAULIC CONDUCTIVITY FOR THE MEDIUM IS TO BE 200mm/hr WITH ±10% VARIATION UNDER COMPACTION (METHOD AS DESCRIBED IN AS 4419).
- ORGANIC MATERIAL CONTENT OF APPROXIMATELY 10% AS MEASURED IN ACCORDANCE WITH AS1289 SHALL BE ADDED TO TOP 150MM OF THE FILTRATION LAYER.
- THE PH OF THE MATERIAL SHALL BE BETWEEN 6 AND 7.
- THE SALT CONTENT OF THE SOIL MIXTURE FOR THE FILTRATION LAYER (AS MEASURED BY EC1:5) SHOULD BE LESS THAN 0.63 DS/M (630µS/CM).
- SILT/CLAY (<0.075MM) CONTENT SHALL NOT BE MORE THAN 3%.

0 2 4 6 8 10m
2 1
SCALE 1:100

0 1000 2000 3000 4000 5000mm
1000 500
SCALE 1:50

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CLIENT

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DESIGNER	T.T.	DATE	JAN 2020
ENGINEER	E.S.	LGA	NORTHERN BEACHES
VERIFIER	E.S.	SCALE @ A1	1:250

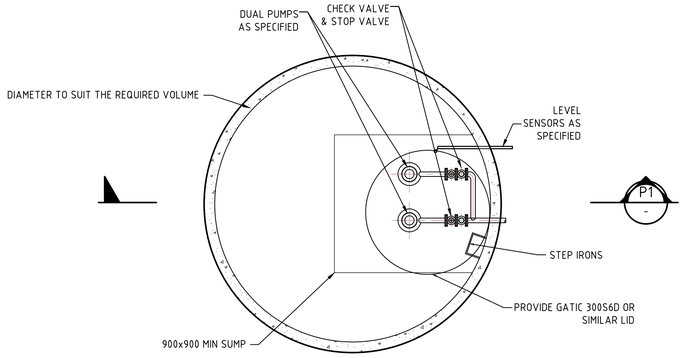
45-49 WARRIEWOOD RD, WARRIEWOOD

STORMWATER INFILTRATION BASIN DETAILS

STATUS	DRAWING No.	REVISION
DEVELOPMENT APPLICATION	02192_623	03

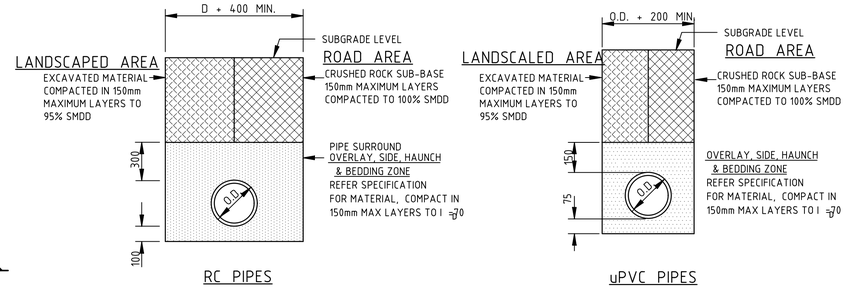
CAD FILENAME: I:\DATA\CME Projects\PN-02192 - WARRIEWOOD ROAD 45-49, WARRIEWOOD\ACAD\02192_621.dwg

A1



PUMP-OUT PIT AND WELL

SCALE 1:20

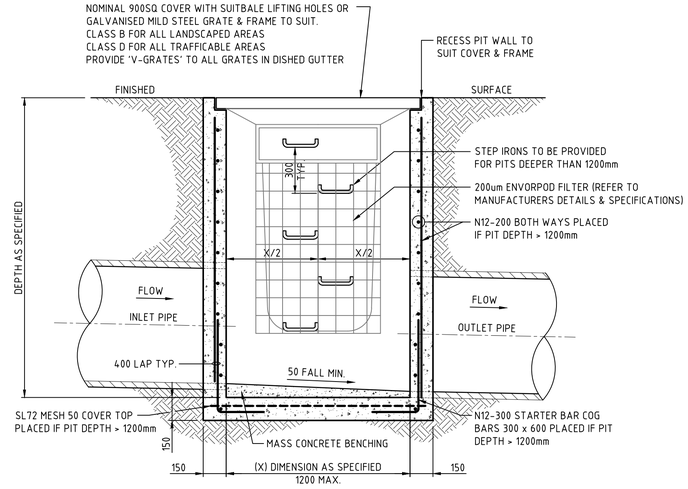


STORMWATER PIPES BACKFILL CONDITIONS

NTS

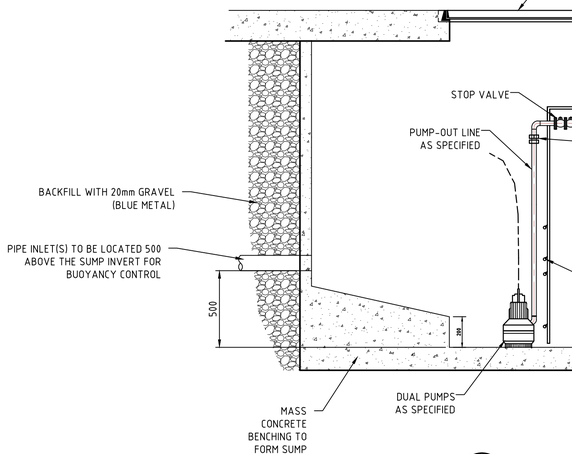
NOTES

1. FOR MATERIALS AND COMPACTION REQUIREMENTS REFER SPECIFICATION
2. "O.D." IS OUTSIDE PIPE DIAMETER
3. PIPES SHALL BE PLACED CENTRALLY WITHIN THE TRENCH WITH EQUAL CLEARANCE ON EACH SIDE TO THE TRENCH WALL.



GRATED PIT WITH ENVIROPOD

SCALE 1:20



SECTION P1

SCALE 1:20

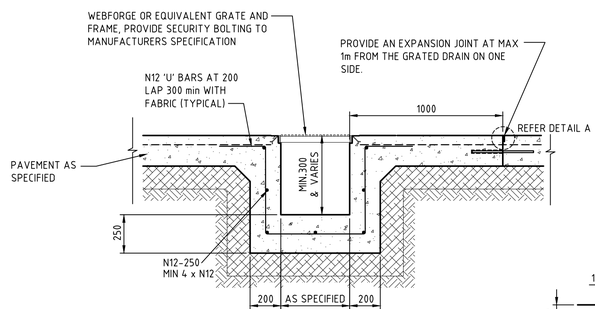
PUMP-OUT SYSTEM SPECIFICATION:

ALL COMPONENTS OF THE PUMP-OUT SYSTEM SHALL BE INSTALLED TO THE MANUFACTURER'S SPECIFICATION CONSISTING OF THE FOLLOWING MINIMUM COMPONENTS:

- PUMPS: DUAL PUMPS (CLASS 1 ZONE 2) INSTALLED TO OPERATE WITH AN ALTERNATING DUTY AND STANDBY ARRANGEMENT
- PUMP DUTIES AND TANK SIZE (FOR EACH PUMP PIT):

PUMP DUTY (EACH)	TANK STORAGE
2 PUMPS	90MIN 100 YR
10 L/s @ 7m HEAD	20 m3

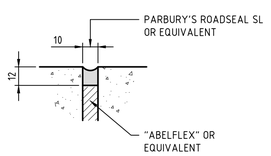
- COVERS: HEAVY DUTY CAST-IRON SEALED INFILL COVER
- SENSORS: LEVEL SENSORS FOR PUMP ON, PUMP OFF, HIGH LEVEL ALARM AND LOW LEVEL ALARM
- SWITCHGEAR HOUSING: VANDALPROOF CABINET LOCATED ADJACENT TO THE PUMPING STATION IN A LOCATION TO BE APPROVED BY THE ARCHITECT
- CONTROLS: FMC MONITORING AND CONTROL UNIT
- INDICATORS: POWER ON LIGHT, PUMP RUN LIGHT, FLASHING LIGHT AND AUDIBLE ALARMS, VOLTMETER, AMMETER, HOURS RUN METER
- POWER SUPPLY: THE CONTRACTOR SHALL PROVIDE ALL NECESSARY POWER SUPPLY AND METERING TO THE PUMP-OUT SYSTEM AND SHALL BE RESPONSIBLE FOR MAKING ALL APPLICATIONS AND PAYING ALL FEES AND CHARGES TO THE ELECTRICITY SUPPLY AUTHORITY



TYPICAL GRATED DRAIN

SCALE 1:20

NOTE:
MIN. 1% FALL IN GRATED DRAIN TO PIT



DETAIL A

N.T.S.

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REV.	DES.	DATE	VER.	DESCRIPTION
02	T.T.	16/03/2020	E.S.	ISSUE FOR DA
01	T.T.	28/02/2020	E.S.	ISSUE FOR COORDINATION

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DESIGNER	T.T.	DATE	JAN 2020
ENGINEER	E.S.	LGA	NORTHERN BEACHES
VERIFIER	E.S.	SCALE @ A1	1:20

45-49 WARRIEWOOD RD, WARRIEWOOD

STORMWATER DETAILS

STATUS	DRAWING No.	REVISION
DEVELOPMENT APPLICATION	02192_651	02

A1

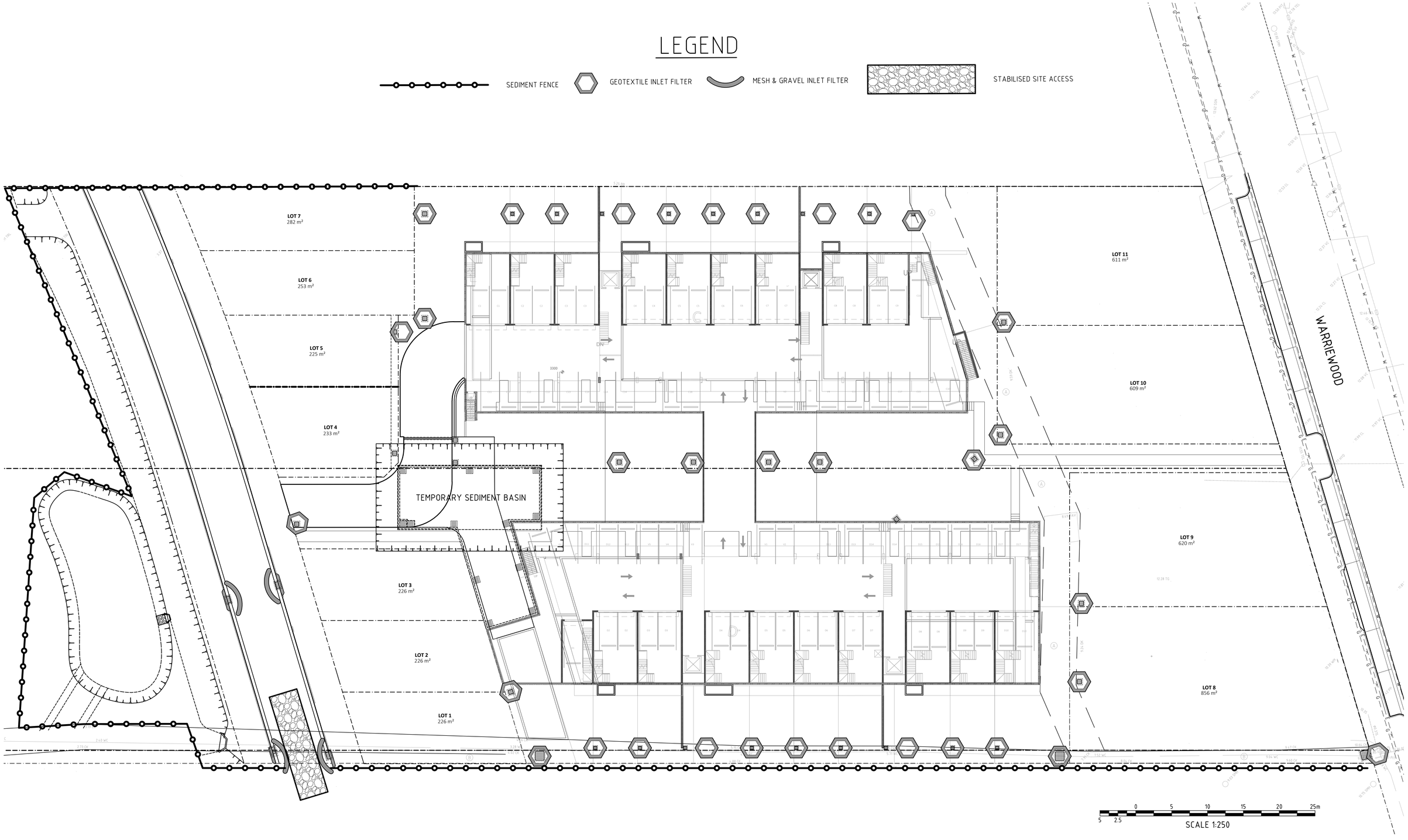
LEGEND

SEDIMENT FENCE

GEOTEXTILE INLET FILTER

MESH & GRAVEL INLET FILTER

STABILISED SITE ACCESS



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REV.	DES.	DATE	VER.	DESCRIPTION
03	T.T.	24/09/2020	E.S.	INFILTRATION BASIN SHAPE MODIFIED TO COUNCIL REQUIREMENT
02	T.T.	16/03/2020	E.S.	ISSUE FOR DA
01	T.T.	28/02/2020	E.S.	ISSUE FOR COORDINATION

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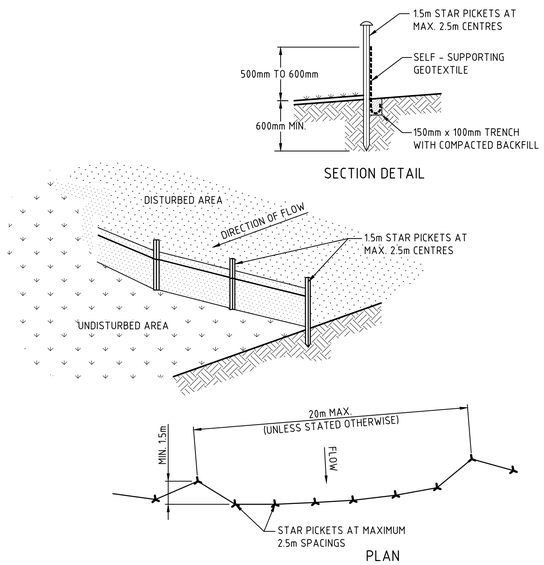
45-49 WARRIEWOOD RD, WARRIEWOOD

SEDIMENT & EROSION CONTROL PLAN

STATUS	DRAWING No.	REVISION
DEVELOPMENT APPLICATION	02192_701	03

A1

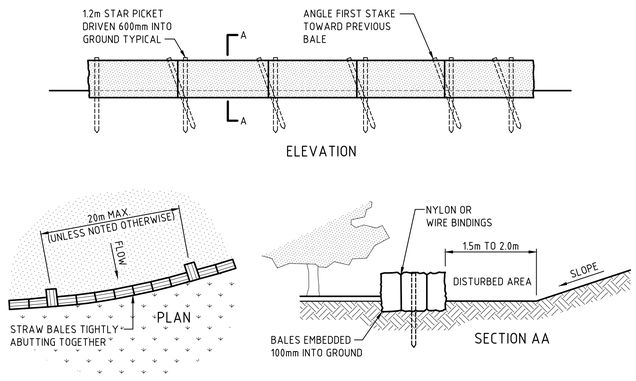


CONSTRUCTION NOTES:

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 CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT 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 1.5 METRE LONG STAR PICKETS INTO THE GROUND AT 2.5 METRE 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 A 150-mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

SEDIMENT FENCE DETAIL

NOT TO SCALE

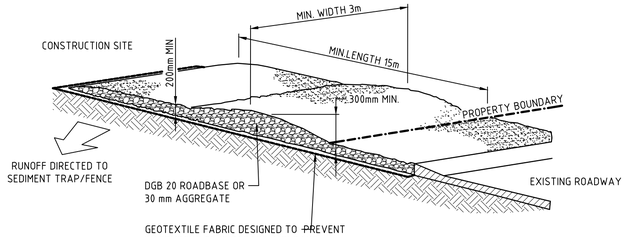


CONSTRUCTION NOTES:

1. CONSTRUCT THE STRAW BALE FILTER AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE.
2. PLACE BALES LENGTHWISE IN A ROW WITH ENDS TIGHTLY ABUTTING. USE STRAW TO FILL ANY GAPS BETWEEN BALES. STRAWS ARE TO BE PLACED PARALLEL TO GROUND.
3. ENSURE THAT THE MAXIMUM HEIGHT OF THE FILTER IS ONE BALE.
4. EMBED EACH BALE IN THE GROUND 75mm TO 100mm AND ANCHOR WITH TWO 1.2m STAR PICKETS OR STAKES. ANGLE THE FIRST STAR PICKET OR STAKE IN EACH BALE TOWARDS THE PREVIOUSLY LAID BALE. DRIVE THEM 600mm INTO THE GROUND AND, IF POSSIBLE, FLUSH WITH THE TOP OF THE BALES. WHERE STAR PICKETS ARE USED AND THEY PROTRUDE ABOVE THE BALES, ENSURE THEY ARE FITTED WITH SAFETY CAPS.
5. WHERE STRAW BALE FILTER IS CONSTRUCTED DOWNSLOPE FROM A DISTURBED BATTER, ENSURE THE BALES ARE PLACED 1.0m TO 2.0m DOWNSLOPE FROM THE TOE.
6. ESTABLISH A MAINTENANCE PROGRAMME THAT ENSURES THE INTEGRITY OF THE BALES IS RETAINED - THEY COULD REQUIRE REPLACEMENT EACH TWO TO FOUR MONTHS.

STRAW BALE FILTER DETAIL

NOT TO SCALE



GEOTEXTILE FABRIC DESIGNED TO PREVENT INTERMIXING OF SUBGRADE AND BASE MATERIALS AND TO MAINTAIN GOOD PROPERTIES OF THE SUB-BASE LAYERS.

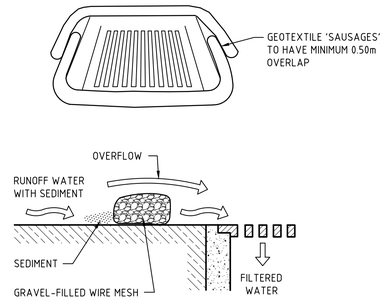
GEOFABRIC MAY BE A WOVEN OR NEEDLE-PUNCHED PRODUCT WITH A MINIMUM CBR BURST STRENGTH (AS3706.4-90) OF 2500 N

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 BASE OR 30mm AGGREGATE.
4. ENSURE THE STRUCTURE IS AT LEAST 15m LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3m WIDE.
5. WHERE A SEDIMENT FENCE JOINS ONTO THE STABILISED ACCESS, CONSTRUCT A HUMP IN THE STABILISED ACCESS TO DIVERT WATER TO THE SEDIMENT FENCE.

STABILISED SITE ACCESS DETAIL

NOT TO SCALE



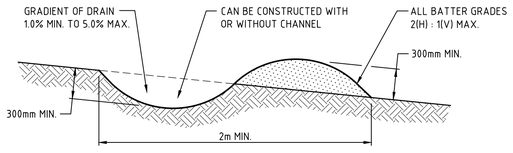
CONSTRUCTION NOTES:

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
2. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

GEOTEXTILE INLET FILTER DETAIL

FOR PITS WITHIN PAVEMENT AREAS

NOT TO SCALE



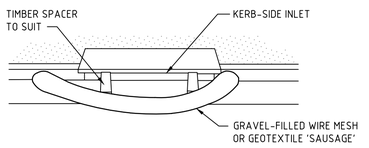
NOTE: ONLY TO BE USED AS TEMPORARY BANK WHERE UPSLOPE LENGTH IS 80 METRES.

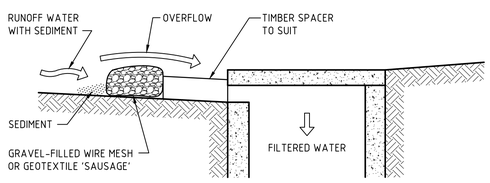
CONSTRUCTION NOTES:

1. BUILD WITH GRADIENTS BETWEEN 1% AND 5%.
2. AVOID REMOVING TREES AND SHRUBS IF POSSIBLE - WORK AROUND THEM.
3. ENSURE THE STRUCTURES ARE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT COULD IMPEDE WATER FLOW.
4. BUILD THE DRAINS WITH CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTIONS, NOT V SHAPED.
5. ENSURE THE BANKS ARE PROPERLY COMPACTED TO PREVENT FAILURE.
6. COMPLETE PERMANENT OR TEMPORARY STABILISATION WITHIN 10 DAYS OF CONSTRUCTION.

TEMPORARY DIVERSION CHANNEL (LOW FLOW)

NOT TO SCALE



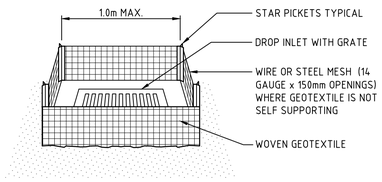


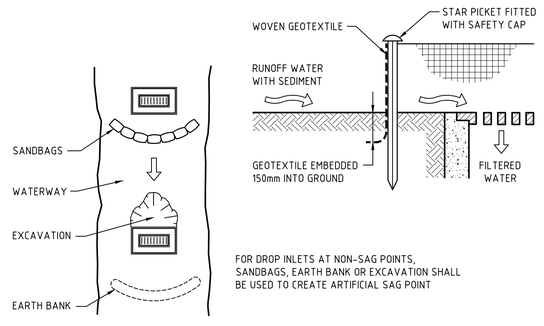
CONSTRUCTION NOTES:

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 HIGH x 400mm WIDE.
4. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 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.

MESH AND GRAVEL INLET FILTER DETAIL

NOT TO SCALE





FOR DROP INLETS AT NON-SAG POINTS, SANDBAGS, EARTH BANK OR EXCAVATION SHALL BE USED TO CREATE ARTIFICIAL SAG POINT

CONSTRUCTION NOTES:

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
2. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
3. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

GEOTEXTILE INLET FILTER DETAIL

FOR PITS WITHIN LANDSCAPED AREAS

NOT TO SCALE

CAD FILENAME: Q:\C&M\Projects\02101-02200\PN-02192 - WARRIEWOOD ROAD 45-49, WARRIEWOOD\ACAD\02192_701.dwg

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STATUS	DRAWING No.	REVISION
DEVELOPMENT APPLICATION	02192_702	02