PROPOSED RESIDENTIAL DEVELOPMENT

175-177 WELLINGTON ROAD, SEFTON

Job No. N0210227

No	DATE	DESCRIPTION	BY
1	26.05.21	ISSUED FOR DA	ER
2	08.07.21	REISSUED FOR DA	ER

PIPEWORK

- PROPOSED STORMWATER DRAINAGE LINE (IN THE GROUND) Φ100 @ 1.0% MIN GRADE UNO.
- PROPOSED RAINWATER DRAINAGE LINE Φ100 @ 1.0% MIN GRADE UNO. USE PRESSURE GRADE PIPES FOR CHARGED SYSTEM
- 90Φ SUBSOIL LINE CONNECT TO STORMWATER OUTLET OR VERTICAL SLOT DRAIN
- EXISTING STORMWATER DRAINAGE LINE
- DOWNPIPE, RISER OR VERTICAL DROP

STORMWATER FIXERS & EQUIPMENT

- PROPOSED SEALED JUNCTION PIT
- PROPOSED GRATED SUFACE INLET PIT. PIT DIMENSIONS ARE GOVERNED BY DEPTH REFER TO DETAIL.
- PROPOSED KERB INLET PIT
- PROPOSED GRATED DRAIN
- PROPOSED RAINWATER TANK

TAGS & MISCELLANEOUS

- SERVICE / SIZE — PIPE TO ABOVE
- SERVICE / SIZE — PIPE TO BELOW
- 225 DIA uPVC @ 1.0% MIN — PIPE SIZE, TYPE AND GRADE
- OVERLAND FLOW PATH
- ROOF FALL DIRECTION
- P 35.05 — PROPOSED PAVEMENT SURFACE LEVEL
- GL 35.05 — PROPOSED PIT SURFACE LEVEL
- IL 34.75 — PROPOSED PIT INVERT LEVEL
- FFL 23.56 — PROPOSED FINISHED FLOOR LEVEL
- + 35.11 — EXISTING SURFACE LEVEL
- 36.00 — EXISTING SURVEY CONTOUR

* DEPTH AND LOCATION OF ALL EXISTING SERVICES TO BE CONFIRMED BY BUILDER ON SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION

* ALL EXISTING LEVELS TO BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF WORKS

GENERAL

1. ALL EXISTING LEVELS TO BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF WORKS
2. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE NOMINATED OR APPLICABLE COUNCIL SPECIFICATION. WHERE A SPECIFICATION HAS NOT BEEN NOMINATED THEN THE CURRENT NSW DEPARTMENT OF HOUSING CONSTRUCTION SPECIFICATION IS TO BE USED. THE NOMINATED SPECIFICATION SHALL TAKE PRECEDENCE TO THESE NOTES.
3. THESE DRAWINGS ARE DIAGRAMMATIC AND SHOW THE GENERAL ARRANGEMENT. ALL DIMENSIONS SHOWN SHALL BE VERIFIED BY THE CONTRACTOR ON SITE. ENGINEERS DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS.
4. ALL DRAWINGS SHOULD BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTURAL DRAWINGS & DRAWINGS FROM OTHER CONSULTANTS.
5. THE CONTRACTOR SHOULD REPORT ANY DISCREPANCIES ON THE DRAWINGS TO THE ENGINEER RESPONSIBLE FOR THE DESIGN.
6. THE CONTRACTOR SHOULD LOCATE AND LEVEL ALL EXISTING SERVICES PRIOR TO COMMENCING CONSTRUCTION AND PROTECT AND MAKE ARRANGEMENTS WITH THE RELEVANT AUTHORITY TO RELOCATE AND/OR ADJUST IF NECESSARY. INFORMATION GIVEN ON THE DRAWINGS IN RESPECT TO SERVICES IS FOR GUIDANCE ONLY AND IS NOT GUARANTEED COMPLETE NOR CORRECT.
7. CONTRACTOR IS NOT TO ENTER UPON NOR DO ANY WORK WITHIN ADJACENT LANDS WITHOUT THE PERMISSION OF THE OWNER.
8. SURPLUS EXCAVATED MATERIAL SHALL BE PLACED WHERE DIRECTED OR REMOVED FROM SITE.
9. ALL NEW WORKS SHALL MAKE A SMOOTH JUNCTION WITH EXISTING.
10. ALL DRAINAGE LINES THROUGH ADJACENT LOTS SHALL BE CONTAINED WITHIN EASEMENTS CONFORMING TO COUNCIL'S STANDARDS.
11. THE CONTRACTOR SHALL CLEAR THE SITE BY REMOVING ALL RUBBISH, FENCES AND DEBRIS ETC. TO THE EXTENT SPECIFIED.
12. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL PROVIDE A TRAFFIC MANAGEMENT PLAN PREPARED BY AN ACCREDITED PERSON IN ACCORDANCE WITH RMS REQUIREMENTS, FOR ANY WORK ON OR ADJACENT TO PUBLIC ROADS, PLAN TO BE SUBMITTED TO COUNCIL & RMS.

SURVEY

1. JONES NICHOLSON IS NOT RESPONSIBLE FOR THE ACCURACY OF ANY 3rd PARTY INFORMATION PROVIDED ON THIS DRAWING.
2. ALL LEVELS ARE TO A.H.D.
3. ALL CHAINAGES AND LEVELS ARE IN METRES, AND DIMENSIONS IN MILLIMETRES.
4. CONTRACTORS SHALL ARRANGE FOR THE WORKS TO BE SET OUT BY A REGISTERED SURVEYOR.

SURVEY INFORMATION

THE SURVEY INFORMATION ON THESE DRAWINGS HAS BEEN PROVIDED BY

COMPANY	DATED
DS&P SURVEYORS	22.05.2015

STORMWATER DRAINAGE INSTALLATION

1. SUPPLY & INSTALLATION OF DRAINAGE WORKS TO BE IN ACCORDANCE WITH THESE DRAWINGS, THE COUNCIL SPECIFICATION AND THE CURRENT APPLICABLE AUSTRALIAN STANDARDS.
2. BACKFILL SHALL BE PLACED & COMPACTED IN ACCORDANCE WITH THE SPECIFICATION. A GRANULAR GRAVEL AGGREGATE MATERIAL (<10mm BACKFILL IS RECOMMENDED FOR THE BEDDING, HAUNCH SUPPORT AND SIDE ZONE DUE TO IT'S SELF COMPACTING ABILITY.
3. A MINIMUM OF 150mm CLEARANCE IS TO BE PROVIDED BETWEEN THE OUTSIDE OF THE PIPE BARREL AND THE TRENCH WALL FOR PIPES < 600 DIA. 200mm CLEARANCE FOR PIPES 600 TO 1200 DIA AND D/6 CLEARANCE FOR PIPES >200 DIA.
4. BEDDING OF THE PIPELINES IS TO BE TYPE 'HS2' IN ACCORDANCE WITH THE STANDARDS AND AS FOLLOWS:
5. BEDDING DEPTH UNDER THE PIPE TO BE 100mm.
6. BEDDING MATERIAL TO BE EXTENDED FROM THE TOP OF THE BEDDING ZONE UP TO 0.3 TIMES PIPE OUTSIDE DIAMETER. THIS REPRESENTS THE 'HAUNCH ZONE.'
7. THE BEDDING & HAUNCH ZONE MATERIAL IS TO BE COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 98% WITHIN ROAD RESERVES AND TRAFFICABLE AREAS AND 95% ELSEWHERE FOR COHESIVE MATERIAL OR A MINIMUM DENSITY INDEX OF 70% IN ACCORDANCE WITH THE STANDARDS FOR COHESIONLESS MATERIAL.
8. COMPACTION TESTING SHALL BE CARRIED OUT BY AN APPROVED ORGANISATION WITH A NATA CERTIFIED LABORATORY FOR ALL DRAINAGE LINES LAID WHOLLY OR IN PART UNDER THE KERB & GUTTER OR PAVEMENT.
9. COMPACTED GRANULAR MATERIAL IS TO COMPLY WITH THE FOLLOWING GRADINGS AND THE MATERIAL PASSING THE 0.075 SIEVE HAVING LOW PLASTICITYAS DESCRIBED IN APPENDIX D OF AS1726.

SIEVE SIZE (mm)	19	2.36	0.60	0.30	0.15	0.075
% MASS PASSING	100	50-100	20-90	10-60	0-25	0-10

SAFETY IN DESIGN

THERE ARE INHERENT RISKS WITH CONSTRUCTING, MAINTAINING, OPERATING, DEMOLISHING, DISMANTLING AND DISPOSING THIS DESIGN THAT ARE TYPICAL OF SIMILAR DESIGNS. AS FAR AS IS REASONABLY PRACTICABLE RISKS HAVE BEEN ELIMINATED OR MINIMISED THROUGH THE DESIGN PROCESS. HAZARD CONTROLS MUST STILL BE IMPLEMENTED BY THE CONTRACTOR, OWNER OR OPERATOR TO ENSURE THE SAFETY OF WORKERS.

- JN DO NOT CONSIDER THAT THERE ARE ANY UNIQUE RISKS ASSOCIATED WITH THE DESIGN OF THIS PROJECT.

STORMWATER DRAINAGE

1. STORMWATER DRAINAGE SHALL BE GENERALLY IN ACCORDANCE WITH CURRENT AUSTRALIAN STANDARDS AND COUNCIL'S SPECIFICATION.
2. PIPES OF 225mm DIA. AND UNDER SHALL BE UPVC.
3. PIPES OF 300mm DIA. AND LARGER SHALL BE FRC OR CONCRETE CLASS 2 RUBBER RING JOINTED UNO.
4. ALL FRC OR RCP STORMWATER PIPES WITHIN ROAD RESERVE AREAS TO BE CLASS 3 U.N.O.
5. MINIMUM COVER TO PIPES 300mm DIA. AND OVER GENERALLY SHALL BE 600mm IN CARPARK & ROADWAY AREAS UNO.
6. PIPES SHALL GENERALLY BE LAID AT THE GRADES INDICATED ON THE DRAWINGS.
7. PIPES UP TO 150mm DIA SHALL BE LAID AT 1.0% MIN. GRADE U.N.O.
8. PIPES 225mm DIA AND OVER SHALL BE LAID AT 0.5% MIN. GRADE U.N.O.
9. BACKFILL TRENCHES WITH APPROVED FILL COMPACTED IN 200mm LAYERS TO 98% OF STANDARD DENSITY.
10. ANY PIPES OVER 16% GRADE SHALL HAVE CONCRETE BULKHEADS AT ALL JOINTS.
11. PITS SHALL BE AS DETAILED WITH METAL GRATES AT LEVELS INDICATED. ALL PITS DEEPER THAN 1200mm TO HAVE CLIMB IRONS.
12. BUILD INTO UPSTREAM FACE OF ALL PITS A 3.0m SUBSOIL LINE FALLING TO PITS TO MATCH PIT INVERTS.
13. ALL COURTYARD & LANDSCAPED PITS TO BE 450 SQUARE UNLESS NOTED OTHERWISE.
14. ALL DRIVEWAY & OSD PITS TO BE 600 SQUARE UNLESS NOTED OTHERWISE.
15. INSTALL TEMPORARY SEDIMENT BARRIERS TO INLET PITS, TO COUNCIL'S STANDARDS UNTIL SURROUNDING AREAS ARE PAVED OR GRASSED.
16. PITS & DOWNPIPE LOCATIONS AND LEVELS MAY BE VARIED TO SUIT SITE CONDITIONS AFTER CONSULTING THE ENGINEER.
17. DOWNPIPES SHOWN ARE INDICATIVE ONLY, ALL ROOF GUTTERING AND DOWNPIPES TO THE CURRENT AUSTRALIAN STANDARDS.
18. ALL PLANTER BOXES AND BALCONIES TO BE CONNECTED TO THE PROPOSED STORMWATER DRAINAGE LINE.
19. HAND-EXCAVATE STORMWATER PIPES IN VICINITY OF TREE ROOTS.
20. FOOTPATH CROSSING LEVELS SHOWN ARE TO BE ADJUSTED TO FINAL COUNCIL'S ISSUED LEVELS.
21. GEOTEXTILE FABRIC TO BE PLACED UNDER RIP RAP SCOUR PROTECTION.
22. ALL BASES OF PITS TO BE BENCHED TO HALF PIPE DEPTH AND PROVIDE GALVANISED ANGLE SURROUNDINGS TO GRATE.
23. SUBSOIL LINE PIPES AND FITTINGS SHALL BE PERFORATED PLASTIC TO CURRENT AUSTRALIAN STANDARDS. LAY PIPES ON FLOOR OF TRENCH GRADED AT 1% MIN. AND OVERLAY WITH FILTER MATERIAL EXTENDING TO WITHIN 200mm OF SURFACE. PROVIDE FILTER FABRIC OF PERMEABLE POLYPROPYLENE BETWEEN FILTER MATERIAL AND TOPSOIL.

EARTHWORKS

1. PROVIDE PROTECTION BARRIERS TO PROTECTED/SENSITIVE AREAS PRIOR TO ANY BULK EXCAVATION.
2. OVER FULL AREA OF EARTHWORKS, CLEAR VEGETATION, RUBBISH, SLABS ETC. AND STRIP TOP SOIL. AVERAGE 200mm THICK. REMOVE FROM SITE, EXCEPT TOP SOIL FOR RE-USE.
3. CUT AND FILL OVER THE SITE TO LEVELS REQUIRED.
4. PRIOR TO ANY FILLING IN AREAS OF CUT OR IN EXISTING GROUND, PROOF ROLL THE EXPOSED SURFACE. REFER TO PROJECT INFORMATION TABLES FOR MINIMUM ROLLER WEIGHT AND THE MINIMUM NUMBER OF PASSES.
5. EXCAVATE AND REMOVE ANY SOFT SPOTS ENCOUNTERED DURING PROOF ROLLING AND REPLACE WITH APPROVED FILL COMPACTED IN LAYERS. THE WHOLE OF THE EXPOSED SUBGRADE AND FILL SHALL BE COMPACTED TO 98% STANDARD MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT ± 2%.
6. FOR ON SITE FILLING AREAS, THE CONTRACTOR SHALL TAKE LEVELS OF EXISTING SURFACE AFTER STRIPPING TOPSOIL AND PRIOR TO COMMENCING FILL OPERATIONS.
7. WHERE HARD ROCK IS EXPOSED IN THE EXCAVATED SUB-GRADE, THIS WILL BE INSPECTED AND A DECISION MADE ON THE LEVEL TO WHICH EXCAVATION IS TAKEN.
8. FILL IN 200mm MAXIMUM (LOOSE THICKNESS) LAYERS TO UNDERSIDE OF BASECOURSE USING THE EXCAVATED MATERIAL AND COMPACTED TO 98% STANDARD (AS 1289 5.1.1). MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT ± 2% SHOULD THERE BE INSUFFICIENT MATERIAL FROM SITE EXCAVATIONS, IMPORT AS NECESSARY CLEAN GRANULAR FILL TO the DESIGN ENGINEERS APPROVAL.
9. COMPACTION TESTING TO BE CARRIED OUT IN ACCORDANCE WITH THE PROJECT INFORMATION TABLE. THE COSTS OF TESTING AND RE-TESTING ARE TO BE ALLOWED FOR BY THE BUILDER.
10. BATTERS TO BE AS SHOWN, OR MAXIMUM 1 VERT : 4 HORIZ. ALL CONDUITS AND MAINS SHALL BE LAID PRIOR TO LAYING FINAL PAVEMENT.
11. ALL BATTERS AND FOOTPATHS ADJACENT TO ROADS SHALL BE TOP SOILED WITH 150mm APPROVED LOAM AND SEEDED UNLESS OTHERWISE SPECIFIED.

CIVIL DRAWING LIST

No.	SHEET NAME
C001	NOTES & LEGEND
C050	TYPICAL DETAILS - SHEET 1
C051	TYPICAL DETAILS - SHEET 2
C100	BASEMENT STORMWATER PLAN
C200	GROUND STORMWATER PLAN

JN
Responsive Engineering

CLIENT
LAHC

STATUS
PRELIMINARY

DISCIPLINE
CIVIL DESIGN R20

DRAWING TITLE
NOTES & LEGEND

PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT

ADDRESS
175-177 WELLINGTON ROAD, SEFTON

PROJECT DETAILS

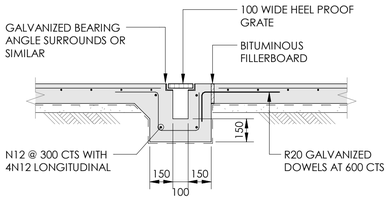
DESIGN	SD
DRAWN	ER
DATE	MAR 21
DRG SIZE	A1
SCALE	1 : 1
PROJECT MGR	S.McM

WWW.JN.COM.AU

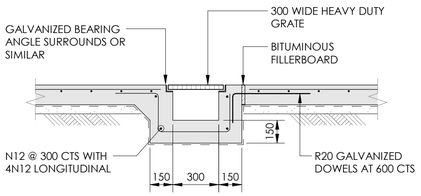
N0210227

C001 2

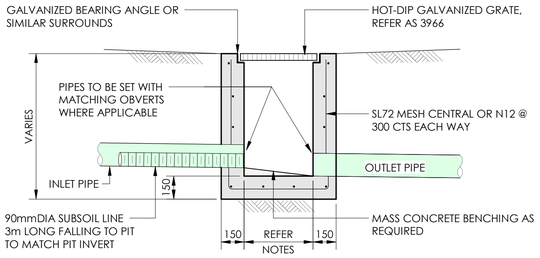
No	DATE	DESCRIPTION	BY
1	26.05.21	ISSUED FOR DA	ER
2	08.07.21	REISSUED FOR DA	ER



TYPICAL 100mm GRATED DRAIN DETAIL



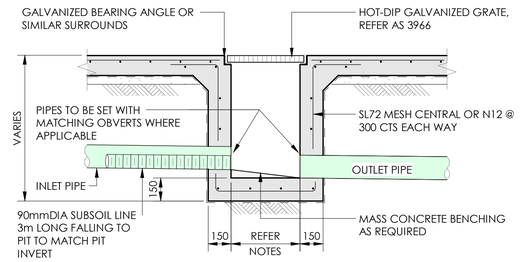
TYPICAL 300mm GRATED DRAIN DETAIL



MINIMUM INTERNAL DIMENSIONS FOR STORMWATER PITS			
DEPTH OF INVERT OF OUTLET		DEPTH OF INVERT OF OUTLET	
		WIDTH	LENGTH
	< 600	450	450
> 600		600	600
> 900		600	900
> 1200		900	900
*STEP IRONS SHALL BE PROVIDED FOR PITS WITH DEPTHS EXCEEDING 1000mm			

NOTE:
1. CLIMB IRONS SHALL BE PROVIDED UNDER LID AT 300 CTS TO COUNCIL STANDARDS WHERE PIT DEPTH IS DEEPER THAN 1000.
2. REINFORCEMENT NOTED IS ONLY REQUIRED FOR PITS EXCEEDING 900 DEEP, SUBJECT TO COUNCIL REQUIREMENTS. PITS GREATER THAN 3000 DEEP WILL REQUIRE STRUCTURAL ENGINEERS DESIGN.
3. PROVIDE 90Dia x 3000 LONG SUBSOIL DRAINAGE STUB PIPE SURROUNDED WITH 100mm THICKNESS OF NOMINAL 20mm COARSE FILTER MATERIAL WRAPPED IN GEOTEXTILE FILTER FABRIC. (BIDUM A24 OR APPROVED SIMILAR). TO BE PARALLEL TO UPSTREAM SIDE OF EACH INLET PIPE.
4. ALTERNATIVE PIT CONSTRUCTION MAY BE USED SUBJECT TO THE ENGINEERS APPROVAL.
5. CONCRETE STRENGTH F'c = 32 MPa

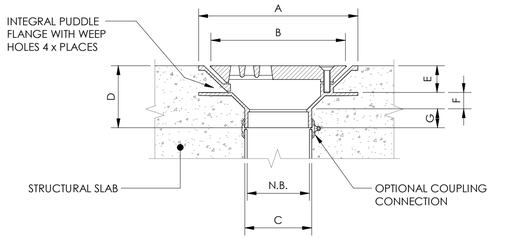
TYPICAL CONCRETE INLET PIT - NATURAL SURFACE



MINIMUM INTERNAL DIMENSIONS FOR STORMWATER PITS			
DEPTH OF INVERT OF OUTLET		DEPTH OF INVERT OF OUTLET	
		WIDTH	LENGTH
	< 600	450	450
> 600		600	600
> 900		600	900
> 1200		900	900
*STEP IRONS SHALL BE PROVIDED FOR PITS WITH DEPTHS EXCEEDING 1000mm			

NOTE:
1. CLIMB IRONS SHALL BE PROVIDED UNDER LID AT 300 CTS TO COUNCIL STANDARDS WHERE PIT DEPTH IS DEEPER THAN 1000.
2. REINFORCEMENT NOTED IS ONLY REQUIRED FOR PITS EXCEEDING 900 DEEP, SUBJECT TO COUNCIL REQUIREMENTS. PITS GREATER THAN 3000 DEEP WILL REQUIRE STRUCTURAL ENGINEERS DESIGN.
3. PROVIDE 90Dia x 3000 LONG SUBSOIL DRAINAGE STUB PIPE SURROUNDED WITH 100mm THICKNESS OF NOMINAL 20mm COARSE FILTER MATERIAL WRAPPED IN GEOTEXTILE FILTER FABRIC.(BIDUM A24 OR APPROVED SIMILAR). TO BE PARALLEL TO UPSTREAM SIDE OF EACH INLET PIPE.
4. ALTERNATIVE PIT CONSTRUCTION MAY BE USED SUBJECT TO THE ENGINEERS APPROVAL.
5. CONCRETE STRENGTH F'c = 32 MPa

TYPICAL CONCRETE INLET PIT - CONCRETE SURFACE



N.B.	A	B	C	D	E	F	G	FLOW RATE * L/S
100	260	200	110	95	44	26	25	8.2
150	260	200	160	80	48	29	28	10.2
SUPERFLO**	400	290	160	143	66	39	38	17

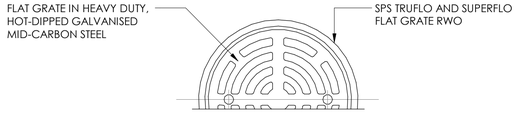
* BASED ON 50mm HEAD OF WATER ABOVE SURFACE LEVEL. FOR FURTHER DATA REFER TO FLOW CHARTS.

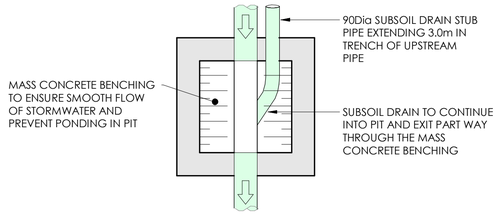
** SUPERFLO AVAILABLE IN 150mm OUTLET ONLY.

SPECIFICATION CODE:
- TIA100F (100mm TRUFLO CI BODY, GALVANISED FLAT GRATE).
- TIA150F (150mm TRUFLO CI BODY, GALVANISED FLAT GRATE).
- TIA100/90F2 (150mm SUPERFLO CI BODY, GALVANISED FLAT GRATE).

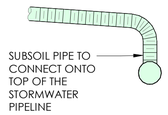
SUGGESTED APPLICATIONS:
- CAR PARK DECKS.
- PLANT ROOMS.
- PEDESTRIAN PRECINCTS.

RWO DETAIL

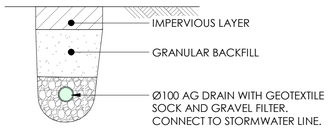




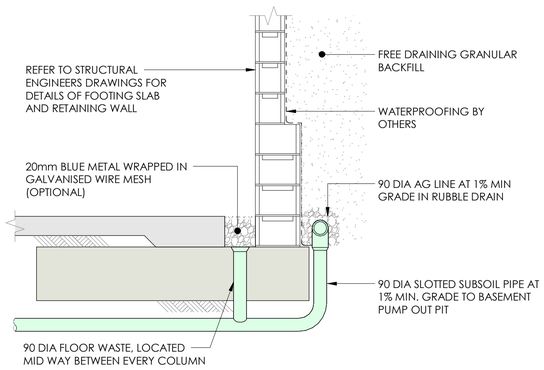
TYPICAL SUBSOIL PIPE/PIT BENCHING



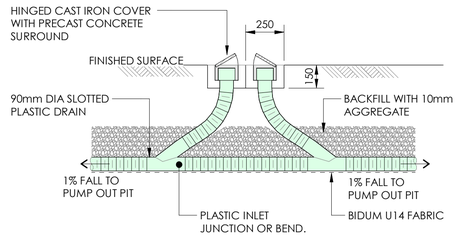
SUBSOIL PIPE CONNECTION



TYPICAL SUBSOIL LINE



TYPICAL GROUNDWATER DRAINAGE DETAIL



NOTES :
- MINIMUM GRADE OF SUBSOIL DRAINAGE PIPES IS TO BE 1.0%. JOINTS IN FILTER FABRIC TO BE LAPPED A MINIMUM 300mm.

SUBSOIL PIPE FLUSHING POINT

JN
Responsive Engineering

CLIENT
LAHC

STATUS
PRELIMINARY

DISCIPLINE
CIVIL DESIGN R20

DRAWING TITLE
TYPICAL DETAILS - SHEET 1

PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT

ADDRESS
175-177 WELLINGTON ROAD, SEFTON

PROJECT DETAILS
DESIGN SD
DRAWN ER
DATE MAR 21
DRG SIZE A1
SCALE As indicated
PROJECT MGR S.McM
WWW.JN.COM.AU

N0210227
C050 2

No	DATE	DESCRIPTION	BY
1	26.05.21	ISSUED FOR DA	ER
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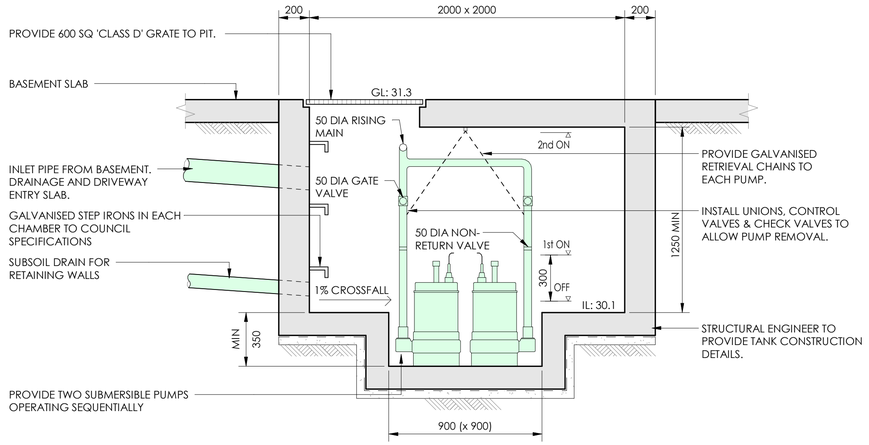


NOTE:
THE PUMP OUT SYSTEM SHALL BE DESIGNED TO BE OPERATED IN THE FOLLOWING MANNER:

- THE PUMPS SHALL BE PROGRAMMED TO WORK ALTERNATELY SO AS TO ALLOW BOTH PUMPS TO HAVE AN EQUAL OPERATION LOAD AND PUMP LIFE.
- A LOW LEVEL FLOAT SHALL BE PROVIDED TO ENSURE THAT THE MINIMUM REQUIRED WATER LEVEL IS MAINTAINED WITHIN THE SUMP AREA OF THE BELOW GROUND TANK. IN THIS REGARD THIS FLOAT WILL FUNCTION AS AN OFF SWITCH FOR THE PUMPS.
- A SECOND FLOAT SHALL BE PROVIDED AT A HIGHER LEVEL, APPROXIMATELY 300mm ABOVE THE MINIMUM WATER LEVEL, WHEREBY ONE OF THE PUMPS WILL OPERATE AND DRAIN THE TANK TO THE LEVEL OF THE LOW LEVEL FLOAT.
- A THIRD FLOAT SHALL BE PROVIDED AT A HIGH LEVEL, WHICH IS APPROXIMATELY THE ROOF LEVEL OF THE BELOW GROUND TANK. THIS FLOAT SHOULD START THE OTHER PUMP THAT IS NOT OPERATING AND ACTIVATE THE ALARM
- AN ALARM SYSTEM SHALL BE PROVIDED WITH A FLASHING STROBE LIGHT AND A PUMP FAILURE WARNING SIGN WHICH ARE TO BE LOCATED AT THE DRIVEWAY ENTRANCE TO THE BASEMENT LEVEL. THE ALARM SYSTEM SHALL BE PROVIDED WITH A BATTERY BACK-UP IN CASE OF POWER FAILURE.
- CONTRACTOR IS TO CONFIRM PUMP ELECTRICAL LOAD AND CONNECTION WITH ELECTRICAL CONTRACTOR AT THE BEGINNING OF THE PROJECT.

PUMP OUT CALCULATIONS

DRIVEWAY
AREA OF EXPOSED DRIVEWAY = 69 sq.m
MINIMUM VOLUME: 100 YR, 2HR= 4.72 cu.m
SUGGESTED ADOPTED V= 5 cu.m
QPEAK: 100 YR, 5 MIN = 4.2 L/s

SUBSOIL CALCULATIONS

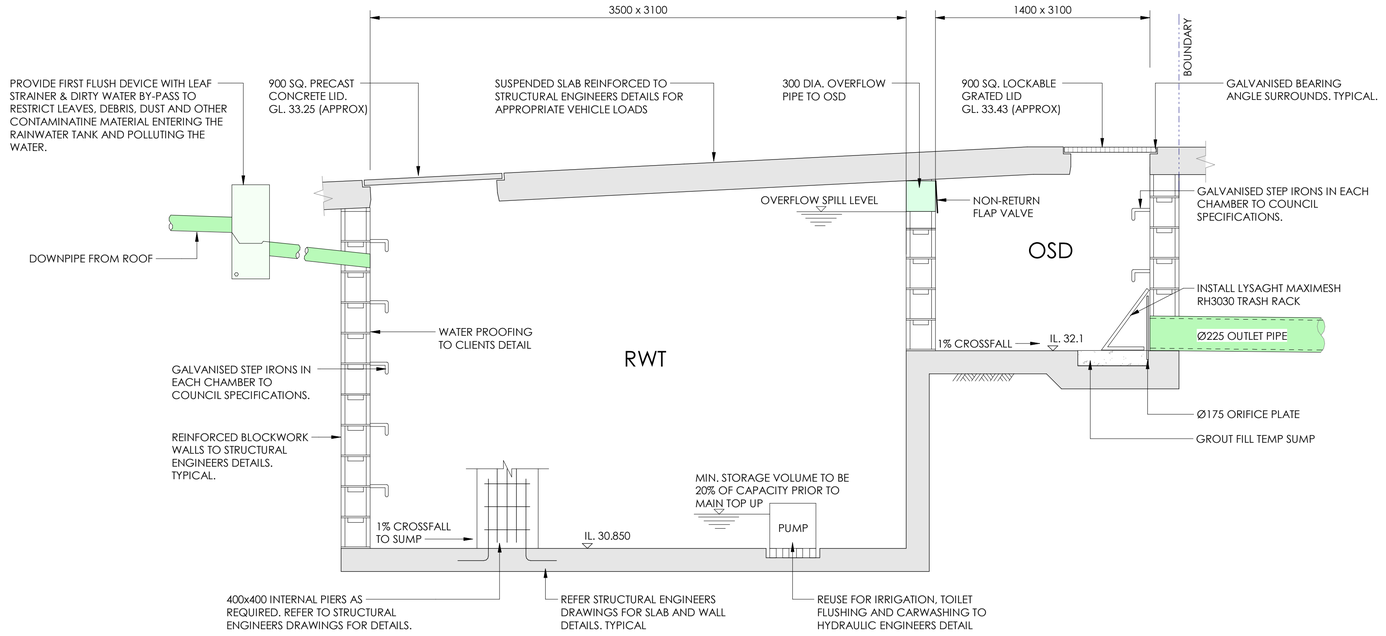
ASSUME SOIL IS SATURATED TO GROUND LEVEL AND INFLOWS CAN BE APPROXIMATED BY SUB-SOIL FLOW NET:
Q= 2/3 x K x H (m3/s PER M OF SUBSOIL LINE)
ASSUMED SUBSOIL INFILTRATION, K = 1x10^ -5 (CLAYEY SAND)
H= HEIGHT = 2.7m LENGTH OF SUBSOIL = 81.3m
Q= 2/3 x 1x10^ -5 X (81.3x2.7) = 1.47 L/s

COMBINED

THEREFORE SUGGESTED PUMP CAPACITY
=1.1 x (1.47 + 4.2) = 6.24 L/s

NOTE: CONTRACTOR TO VERIFY SUBSOIL INFILTRATION RATES VIA GEOTECHNICAL ENGINEERS TESTING, PRIOR TO CONSTRUCTION. SUPERVISING ENGINEER TO VERIFY CHANGES IF INFILTRATION RATES DIFFER SIGNIFICANTLY FROM ASSUMED VALUES.

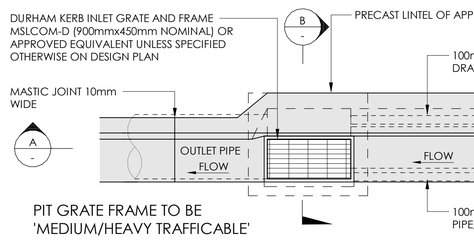
BASEMENT PUMPOUT TANK DETAIL



NOTE:

- CONTRACTOR IS TO VERIFY THE LEVEL OF ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF EXCAVATION FOR DRAINAGE.
- RAINWATER TANK TO BE 25,000 LITRE CAPACITY USED FOR INDOOR TOILET FLUSHING, & OUTDOOR IRRIGATION. SYDNEY WATER TOP-UP SYSTEM INSTALLED TO AS/NZS 3500.1 (2003) IS TO BE PROVIDED FOR TRICKLE TOP-UP OF RAINWATER TANK IF THE STORED WATER BECOMES LESS THAN SET MINIMUM WATER LEVEL.
- ALTERNATE PUMP WITH 3 WAY SWITCHING DEVICE, (RAINBANK OR EQUIVALENT) CONNECTED TO WATER SUPPLY TO HYDRAULIC CONSULTANTS DETAIL.
- INSTALL FIRST FLUSH DEVICE TO RESTRICT LEAVES, DEBRIS, DUST AND OTHER CONTAMINATING MATERIAL ENTERING THE RAINWATER TANK AND POLLUTING THE WATER. VOLUME OF INITIAL STORAGE TO BE APPROXIMATELY 0.1m2 WITH A 5mm DIAMETER LEAKAGE HOLE.
- VOLUME AND RETICULATION REQUIREMENTS TO BASIX AND SECTION J ASSESSMENT.

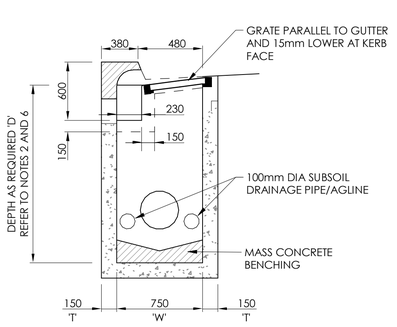
OSD/RWT TYPICAL DETAIL



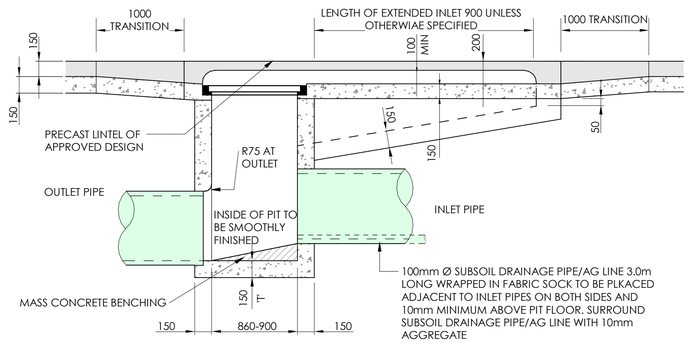
PIT GRATE FRAME TO BE 'MEDIUM/HEAVY TRAFFICABLE' BIKE SAFE CLASS 'D' GRATES OT FRAMES TO AS 3996

KERB INLET GULLY PIT PLAN

NOTE:
1. ALL KERB INLET PITS (ON GRADE) SHALL BE PROVIDED WITH AN EXTENDED INLET 900mm (MIN) LONG ON THE HIGHER SIDE
2. STEP IRONS TO BE PROVIDED AT 300mm CENTRES FOR PITS GREATER THAN 1200mm DEEEP AND PLACED ON A WALL CLEAR OF FLOW WHERE POSSIBLE IN ACCORDANCE WITH AS 1657.
3. THE COMPRESSIVE STRENGTH OF ALL CONCRETE USED SHALL BE 32MPa AT 2 8 DAYS IN ACCORDANCE WITH AS 1012 ANS AS 3600.
4. MINIMUM COVER TO ALL PIPES TO BE 600mm UNDER ROADS AND 450mm ELSEWHERE.
5. ALL INTERNAL PIT CORNERS TO BE PROVIDED WITH BENCHING TO IMPROVE FLOW.
6. WHERE INTERNAL WIDTH EXCEEDS 750mm OR DEPTH EXCEEDS 1200mm WALLS TO BE RERINFORCED IN ACCORDANCE WITH THE TABLE SHOWN BELOW.
7. SELECTED GRANULAR MATERIAL BACKFILL SHALL BE PLACED TO FILL ALL EXCAVATED VOIDS. (REFER TO AS 3725-2007).
8. ALL PIPES TO BE LAID SO THAT THEIR VERTICAL CENTRE LINES INTERSECT AT THE CENTRE OF THE PIT.
9. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.



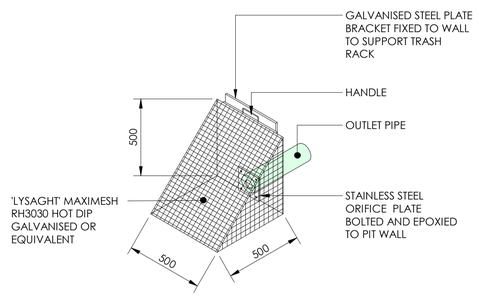
SECTION B-B



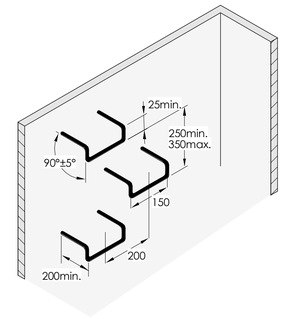
SECTIONAL ELEVATION A-A

DEPTH TO INVERT 'D'	WALL & BASE THICKNESS 'T'	SPACING OF 'N16' WALL & BASE REINFORCEMENT				
		MAXIMUM INTERNAL PLAN DIMENSION 'W'				
		0 - 1190	1200 - 1790	1800 - 2390	2400 - 2690	2700 - 3000
0 - 1990	150	NIL REINFT.	250 CP	250 CP	250 CP	250 CP
2000 - 2490	200	250 CP	250 CP	250 CP	250 CP	250 CP

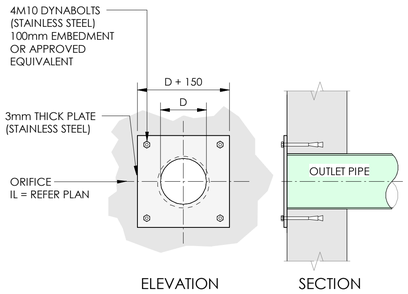
KERB INLET GULLY PIT DETAIL



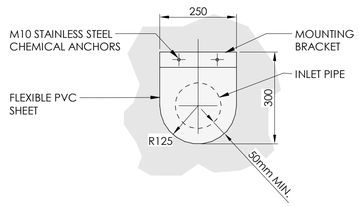
TYPICAL TRASH RACK SCREEN DETAIL



STEP IRON DETAIL



TYPICAL ORIFICE PLATE DETAIL



FLAP VALVE DETAIL

Responsive Engineering

CLIENT
LAHC

STATUS
PRELIMINARY

DISCIPLINE
CIVIL DESIGN

DRAWING TITLE
TYPICAL DETAILS - SHEET 2

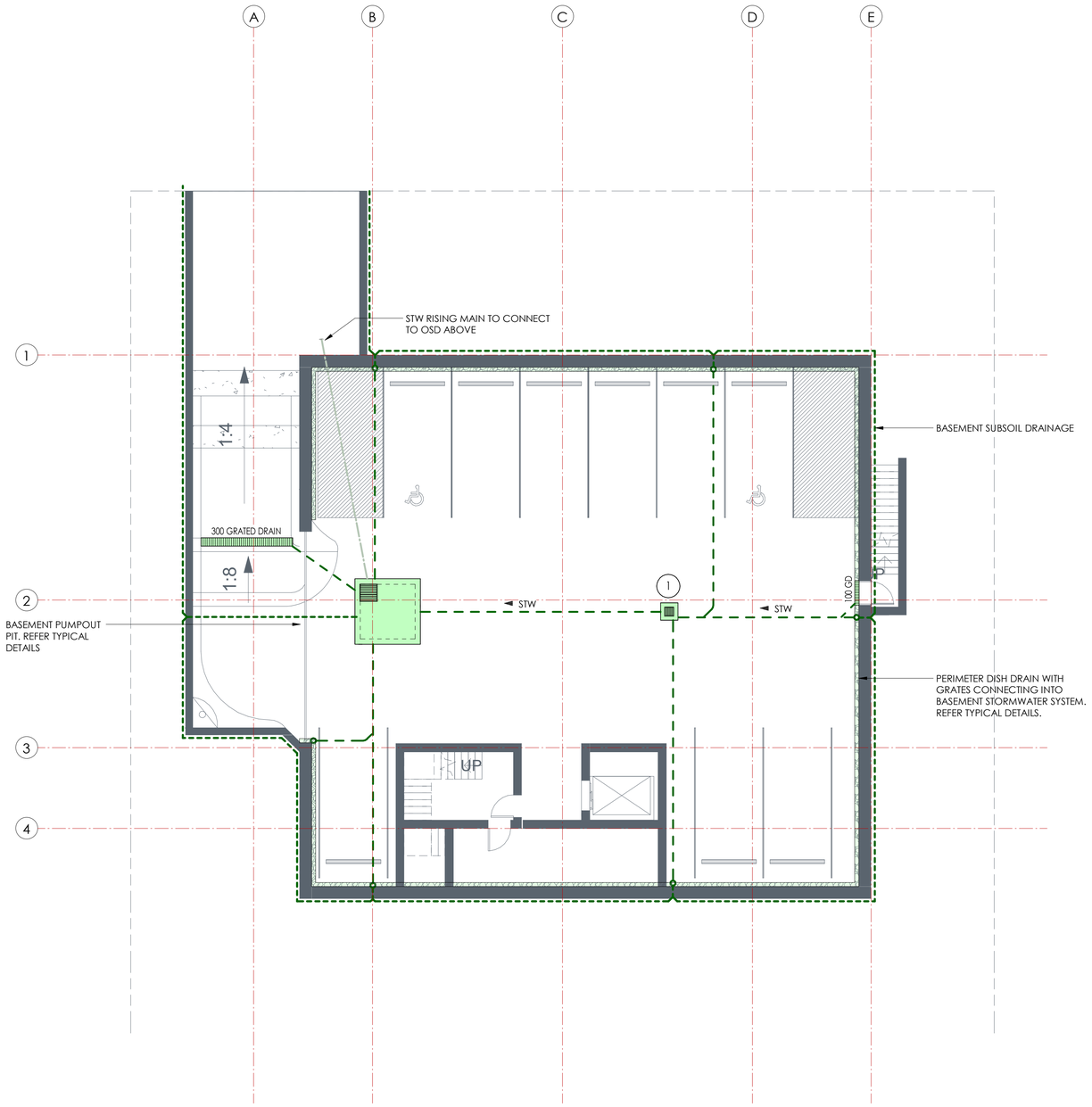
PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT

ADDRESS
175-177 WELLINGTON ROAD, SEFTON

PROJECT DETAILS
DESIGN SD
DRAWN ER
DATE MAR 21
DRG SIZE A1
SCALE As indicated
PROJECT MGR S.McM
WWW.JN.COM.AU

N0210227
C051 2

No	DATE	DESCRIPTION	BY
1	26.05.21	ISSUED FOR DA	ER
2	08.07.21	REISSUED FOR DA	ER



BASEMENT STORMWATER PLAN

SCALE 1 : 100

JN
Responsive Engineering

CLIENT
LAHC

STATUS
PRELIMINARY

DISCIPLINE
CIVIL DESIGN R20

DRAWING TITLE
BASEMENT STORMWATER PLAN

PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT

ADDRESS
175-177 WELLINGTON ROAD, SEFTON

PROJECT DETAILS

DESIGN	SD
DRAWN	ER
DATE	MAR 21
DRG SIZE	A1
SCALE	1 : 100
PROJECT MGR	S.McM

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N0210227

C100 2

EXISTING PIT LEVELS TO BE CONFIRMED PRIOR TO CONSTRUCTION

NEW 375 RCP @ 1% MIN

NEW KERB INLET PIT TO COUNCIL SPECIFICATIONS. LEVELS TBC PRIOR TO CONSTRUCTION

OSD SUMMARY:
PRE DEVELOPMENT 100yr ARI
SITE DISCHARGE 75L/s

POST DEVELOPMENT 100yr ARI
SITE DISCHARGE (CONTROLLED) 72L/s
STORAGE VOLUME REQUIRED 5.7m³
STORAGE VOLUME PROVIDED 6m³

OSD 6m³. REFER TYPICAL DETAILS

DRIVEWAY CREST

25,000L RWT. REFER TYPICAL DETAILS

OUTLINE OF BASMENT BELOW SHOWN DASHED.

PROVIDE OCEANPROTECT OCEANGUARD PIT BASKETS TO ALL SURFACE INLET DRAINAGE PITS

OSD BYPASS AREA

ALL ROOF DRAINAGE TO BE CONNECTED TO RWT

ALL ROOF DRAINAGE TO BE CONNECTED TO RWT

No	DATE	DESCRIPTION	BY
1	26.05.21	ISSUED FOR DA	ER
2	08.07.21	REISSUED FOR DA	ER

GROUND FLOOR STORMWATER PLAN
SCALE 1 : 100

Responsive Engineering

CLIENT
LAHC

STATUS
PRELIMINARY

DISCIPLINE
CIVIL DESIGN

DRAWING TITLE
GROUND STORMWATER PLAN

PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT

ADDRESS
175-177 WELLINGTON ROAD, SEFTON

PROJECT DETAILS	
DESIGN	SD
DRAWN	ER
DATE	MAR 21
DRG SIZE	A1
SCALE	1 : 100
PROJECT MGR	S.McM
WWW.JN.COM.AU	

N0210227
C200 2

PROPOSED RESIDENTIAL DEVELOPMENT

175-177 WELLINGTON ROAD, SEFTON

Job No. N0210227

No	DATE	DESCRIPTION	BY
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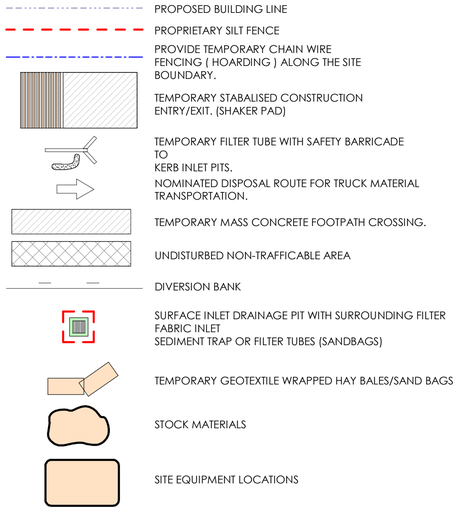
ENVIRONMENTAL SITE MANAGEMENT LEGEND



PROPOSED BUILDING LINE

PROPRIETARY SILT FENCE

PROVIDE TEMPORARY CHAIN WIRE FENCING (HOARDING) ALONG THE SITE BOUNDARY.

TEMPORARY STABALISED CONSTRUCTION ENTRY/EXIT. (SHAKER PAD)

TEMPORARY FILTER TUBE WITH SAFETY BARRICADE TO KERB INLET PITS.

NOMINATED DISPOSAL ROUTE FOR TRUCK MATERIAL TRANSPORTATION.

TEMPORARY MASS CONCRETE FOOTPATH CROSSING.

UNDISTURBED NON-TRAFFICABLE AREA

DIVERSION BANK

SURFACE INLET DRAINAGE PIT WITH SURROUNDING FILTER FABRIC INLET
SEDIMENT TRAP OR FILTER TUBES (SANDBAGS)

TEMPORARY GEOTEXTILE WRAPPED HAY BALES/SAND BAGS

STOCK MATERIALS

SITE EQUIPMENT LOCATIONS

SAFETY IN DESIGN

THERE ARE INHERENT RISKS WITH CONSTRUCTING, MAINTAINING, OPERATING, DEMOLISHING, DISMANTLING AND DISPOSING THIS DESIGN THAT ARE TYPICAL OF SIMILAR DESIGNS. AS FAR AS IS REASONABLY PRACTICABLE RISKS HAVE BEEN ELIMINATED OR MINIMISED THROUGH THE DESIGN PROCESS. HAZARD CONTROLS MUST STILL BE IMPLEMENTED BY THE CONTRACTOR, OWNER OR OPERATOR TO ENSURE THE SAFETY OF WORKERS.

- JN DO NOT CONSIDER THAT THERE ARE ANY UNIQUE RISKS ASSOCIATED WITH THE DESIGN OF THIS PROJECT.

ENVIRONMENTAL SITE MANAGEMENT

1. EROSION & SEDIMENT CONTROLS TO BE INSTALLED IN ACCORDANCE WITH COUNCIL'S SPECIFICATION & THE NSW DEPARTMENT OF HOUSING "BLUE BOOK" - SOILS AND CONSTRUCTION - MANAGING URBAN STORMWATER, 2004. REFER TO THE BLUE BOOK FOR STANDARD DRAWINGS "SD"
2. SEDIMENT & EROSION CONTROLS MUST BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS OR DEMOLITION ACTIVITY. THE LOCATION OF SUCH DEVICES IS INDICATIVE ONLY AND FINAL POSITION SHOULD BE DETERMINED ON SITE.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL MEASURES ARE TAKEN DURING THE COURSE OF CONSTRUCTION TO PREVENT SEDIMENT EROSION AND POLLUTION OF THE DOWNSTREAM SYSTEM. SUPERVISING ENGINEER SHOULD BE CONTACTED IF IN DOUBT. ALL SEDIMENT CONTROL STRUCTURES TO BE INSPECTED AFTER EACH RAINFALL EVENT FOR STRUCTURAL DAMAGE AND ALL TRAPPED SEDIMENT TO BE REMOVED TO A NOMINATED SOIL STOCKPILE SITE.
4. RETAIN ALL EXISTING GRASS COVER WHEREVER POSSIBLE. TOPSOIL FROM ALL AREAS THAT WILL BE DISTURBED TO BE STRIPPED AND STOCKPILED AT THE NOMINATED SITE. A SEDIMENT FENCE TO BE PLACED DOWNHILL OF STOCKPILE.
5. AREAS OF SITE REGRADING ARE TO BE COMPLETED PROGRESSIVELY DURING THE WORKS AND STABILISED AS EARLY AS POSSIBLE. THE SUPERVISING ENGINEER MAY DIRECT THE CONTRACTOR TO HAVE AREAS OF DISTURBANCE COMPLETED AND STABILISED DURING THE COURSE OF THE WORKS.
6. ALL DISTURBED AREAS ARE TO BE SEEDED & FERTILISED WITHIN 14 DAYS OF EXPOSURE.
7. ALL EXISTING TREES TO BE RETAINED UNLESS SHOWN OTHERWISE ON APPROVED DRAWINGS. TREES RETAINED ARE TO BE PROTECTED WITH A HIGH VISIBILITY FENCE, PLUS FLAGGING TO INDIVIDUAL TREES AS NECESSARY.
8. INSTALL TEMPORARY SEDIMENT BARRIERS TO ALL INLET PITS LIKELY TO COLLECT SILT LADEN WATER, UNTIL SURROUNDING AREAS ARE PAVED OR REGRASSED. GRAVEL OR GEOTEXTILE INLET FILTERS TO SD6-11 & SD6-12.
9. ALL SILT FENCES & BARRIERS ARE TO BE MAINTAINED IN GOOD ORDER & REGULARLY DESILTED DURING THE CONSTRUCTION PERIOD. SILT FENCES TO SD6-8 OR SD6-9.
10. STOCKPILES OF LOOSE MATERIALS SUCH AS SAND, SOIL, GRAVEL MUST BE COVERED WITH GEOTEXTILE SILT FENCE MATERIAL. PLASTIC SHEETING OR MEMBRANE MUST NOT BE USED. SAFETY BARRICADING SHOULD BE USED TO ISOLATE STOCKPILES OF SOLID MATERIALS SUCH AS STEEL REINFORCING, FORMWORK AND SCAFFOLDING.
11. WASTE MATERIALS ARE TO BE STOCKPILED OR LOADED INTO SKIP-BINS LOCATED ON SITE AS SHOWN ON PLAN.
12. NO MORE THAN 150m OF TRENCHING TO BE OPEN AT ANY ONE TIME. IMMEDIATELY AFTER TRENCH BACKFILLING, PROVIDE SANDBAGS OR SAUSAGE FILTERS ACROSS EACH TRENCH AT MAXIMUM 20m SPACINGS. FILTERS TO REMAIN IN PLACE UNTIL REVEGETATION HAS OCCURRED.
13. ALL VEHICLES LEAVING THE SITE MUST PASS OVER THE STABILISED SITE ACCESS BALLAST AREA (SIMILAR TO SD6-14) TO SHAKE OFF SITE CLAY AND SOIL. IF NECESSARY WHEELS AND AXLES ARE TO BE HOSED DOWN. BALLAST IS TO BE MAINTAINED & REPLACED AS NECESSARY DURING THE CONSTRUCTION PERIOD.
14. THE HEAD CONTRACTOR IS TO INFORM ALL SITE STAFF AND SUB-CONTRACTORS OF THEIR OBLIGATIONS UNDER THE EROSION AND SEDIMENT CONTROL PLAN.
15. ANY SEDIMENT DEPOSITED ON THE PUBLIC WAY, INCLUDING FOOTPATH RESERVE AND ROAD SURFACE, IS TO BE REMOVED IMMEDIATELY.
16. PROVIDE BARRIERS AROUND ALL CONSTRUCTION WORKS WITHIN THE FOOTPATH AREA TO PROVIDE SAFE ACCESS FOR PEDESTRIANS.
17. CONCRETE PUMPS AND CRANES ARE TO OPERATE FROM WITHIN THE BALLAST ENTRY DRIVEWAY AREA AND ARE NOT TO OPERATE FROM THE PUBLIC ROADWAY UNLESS SPECIFIC COUNCIL PERMISSION IS OBTAINED.
18. TRUCKS REMOVING EXCAVATED / DEMOLISHED MATERIAL SHOULD TRAVEL ON STABILISED CONSTRUCTION PATHS. MATERIAL TO BE TAKEN TO THE TRUCK TO REDUCE TRUCK MOVEMENT ON SITE. TRUCKS TO BE LIMITED TO SINGLE UNIT HEAVY RIGID VEHICLES. (NO SEMITRAILERS)
19. ANY EXCAVATION WORK ADJACENT TO ADJOINING PROPERTIES OR THE PUBLIC ROADWAY IS NOT TO BE COMMENCED UNTIL THE STRUCTURAL ENGINEER IS CONSULTED AND SPECIFIC INSTRUCTIONS RECEIVED FROM THE ENGINEER.
20. TOILET FACILITIES MUST BE EITHER A FLUSHING TYPE OR APPROVED PORTABLE CHEMICAL CLOSET. CHEMICAL CLOSETS ARE TO BE MAINTAINED & SERVICED ON A REGULAR BASIS SO THAT OFFENSIVE ODOUR IS NOT EMITTED.
21. DURING TRENCH EXCAVATION ALL SPOIL SHALL BE MOUNDED ON THE UPHILL SIDE OF TRENCHES AND PLACEMENT IS TO COMPLY WITH THE SUPERINTENDENTS REQUIREMENT.
22. DIVERSION BANKS SHOULD BE CONSTRUCTED BY MOUNDING STRIPPED TOPSOIL (MIN HEIGHT 600mm) WHERE DIRECTED. MATERIAL TO BE RESPREAD ON FOOTWAYS AFTER FINAL TRIMMING.
23. UNDISTURBED BUFFER ZONE AREAS ARE CLOSED TO ALL TRAFFIC MOVEMENTS UNLESS OTHERWISE NOTED BY THE SUPERINTENDENT AND ACCESS TO THE SEWER OR C.D.L. TRENCHING WILL BE AS SHOWN, OR HEAVY PENALTIES MAY BE IMPOSED.
24. TRAFFIC MANAGEMENT MEASURES ARE REQUIRED TO BE IMPLEMENTED AND MAINTAINED DURING CONSTRUCTION. IN ACCORDANCE WITH 'R.T.A. TRAFFIC CONTROL AT WORK SITES - CURRENT EDITION' AND AS 1742 'MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.'
25. PEDESTRIAN CONTROL MEASURES ARE REQUIRED TO BE IMPLEMENTED AND MAINTAINED DURING CONSTRUCTION. IN ACCORDANCE WITH AS 1742 'MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

ESM DRAWING LIST

No.	SHEET NAME
ESM1	ESM NOTES & LEGEND
ESM2	ESM TYPICAL DETAILS
ESM3	ESM PLAN

Responsive Engineering

CLIENT
LAHC

STATUS
PRELIMINARY

DISCIPLINE
CIVIL DESIGN #20

DRAWING TITLE
ESM NOTES & LEGEND

PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT

ADDRESS
175-177 WELLINGTON ROAD, SEFTON

PROJECT DETAILS

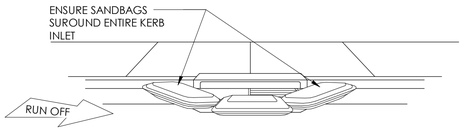
DESIGN	SD
DRAWN	ER
DATE	MAR 21
DRG SIZE	A1
SCALE	As indicated
PROJECT MGR	S.McM

WWW.JN.COM.AU

N0210227

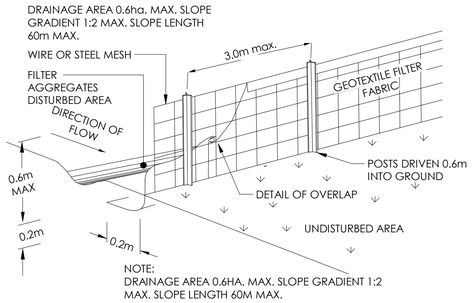
ESM1 2

No	DATE	DESCRIPTION	BY
1	26.05.21	ISSUED FOR DA	ER
2	08.07.21	REISSUED FOR DA	ER



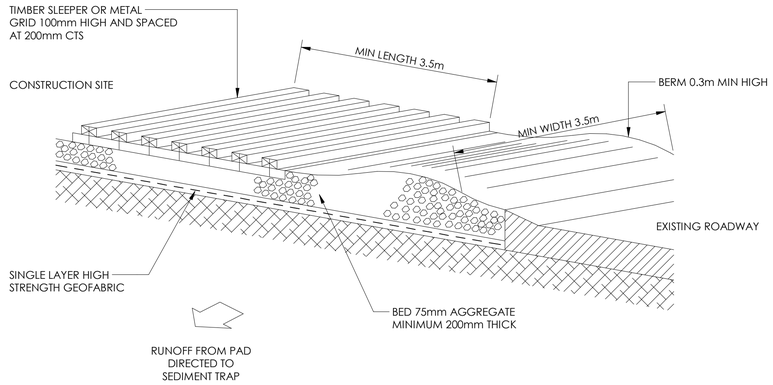
NOTES:
1. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT.
2. FILL THE SLEEVE WITH 25mm TO 50MM GRAVEL.
3. FORM AN ELIPTICAL CROSS SECTION ABOUT 150mm HIGH X 400mm WIDE.
4. PLACE THE FILTER AT THE OPNEING OF THE KERB INLET LEAVING A 100MM GAP AT THE TOP TO ACT AS AN EMERGENCY SPILL WAY.
5. MAINTAIN A CLEAR DISTANCE AWAY FROM THE PIT WITH SPACER BLOCKS.
6. FORM A SEAL WITH THE KERBING AND PREVENT SEDIMENT BYPASSING THE FILTER.
7. FIT TO ALL KERB INLETS AS SHOWN.

SANDBAG SEDIMENT INLET TRAP

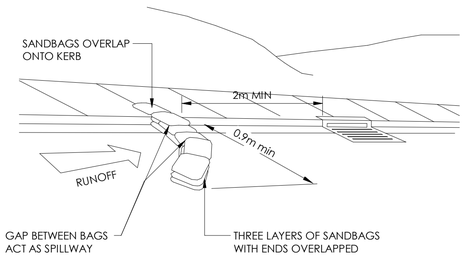


SEDIMENT FENCE

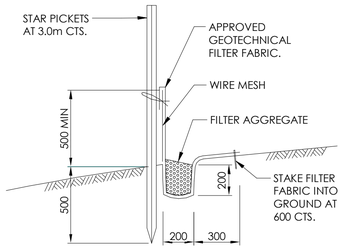
GENERAL CONSTRUCTION NOTES
1. CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE.
2. DRIVE 1.5m LONG STAR PICKETS IN GROUND 3m APART.
3. DIG A 200mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE FABRIC TO BE ENTRENCHED.
4. BACKFILL TRENCH OVER BASE OF FABRIC
5. FIX SELF-SUPPORTING GEOTEXTILE TO UPSLOPE SIDE OF POSTS WITH WIRE TIES OR AS RECOMMENDED BY GEOTEXTILE MANUFACTURER.
6. JOIN SECTIONS OF FABRIC AT A SUPPORT WITH A 150m OVERLAP.



TEMPORARY CONSTRUCTION EXIT DETAIL - SHAKER

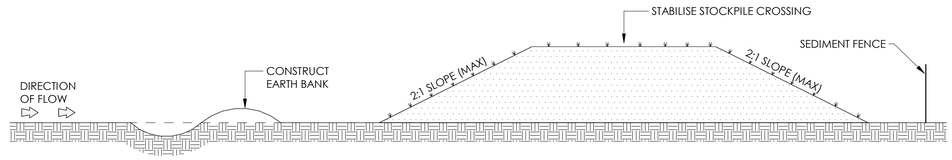


SANDBAG SEDIMENT TRAP DETAIL



SILT FENCE DETAIL

SEDIMENT SILT FENCE DETAIL

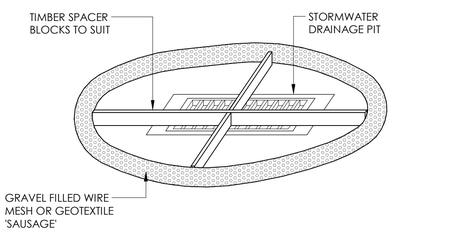


STOCKPILES

N.T.S

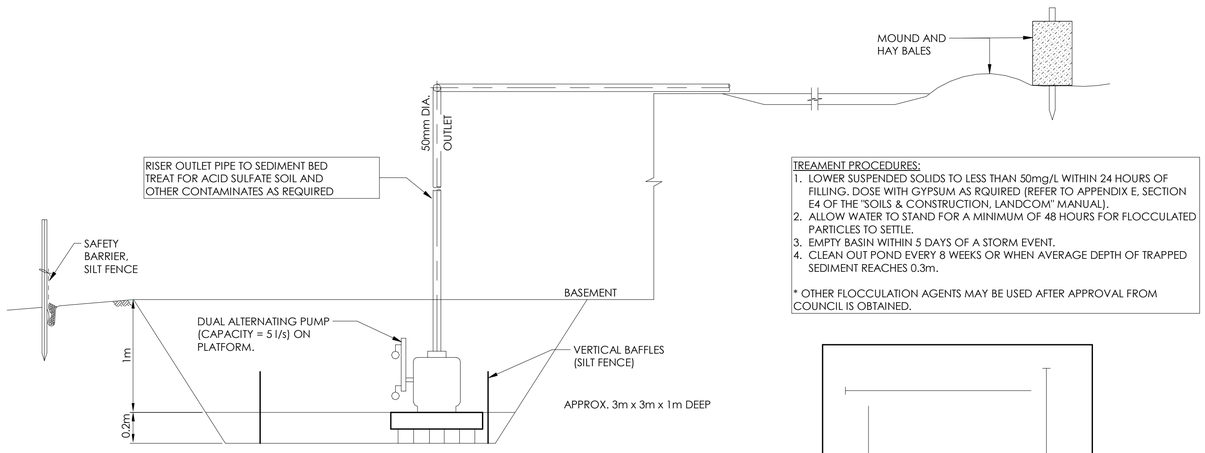
GENERAL CONSTRUCTION NOTES:
1. LOCATE STOCKPILE AT LEAST 5m FROM VEGETATION, CONCENTRATED WATER FLOWS, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS A LOW FLAT ELONGATED MOUND.
3. WHERE THERE IS A SUFFICIENT AREA TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT. (TO ALLOW AIR VENTILATION FOR FUTURE REUSE)
4. REHABILITATE IN ACCORDANCE WITH THE SWMP/ESCP.
5. CONSTRUCT EARTH BANK ON THE UPSLOPE SIDE TO DIVERT RUN OFF AROUND THE STOCKPILE AND A SEDIMENT FENCE 1m TO 2m DOWNSLOPE OF STOCKPILE.

STOCKPILES



1. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH ON THE INLET PIT.
2. FILL THE SLEEVE WITH 25mm TO 50mm GRAVEL.
3. FORM AN ELLIPTICAL CROSS SECTION ABOUT 150mm HIGH x 400mm WIDE.
4. MAINTAIN A CLEAR DISTANCE AWAY FROM THE PIT WITH SPACER BLOCKS.

SAUSAGE BARRIER DETAIL

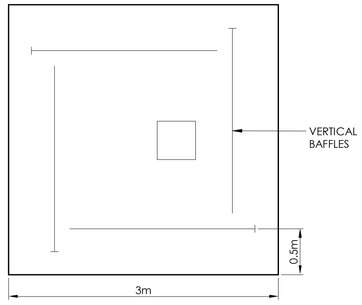


TEMPORARY PUMP OUT SUMP AND SEDIMENTATION POND

(FOR SITE SURFACE RUN OFF)

TREAMENT PROCEDURES:
1. LOWER SUSPENDED SOLIDS TO LESS THAN 50mg/L WITHIN 24 HOURS OF FILLING. DOSE WITH GYPSUM AS RQUIRED (REFER TO APPENDIX E, SECTION E4 OF THE "SOILS & CONSTRUCTION, LANDCOM" MANUAL).
2. ALLOW WATER TO STAND FOR A MINIMUM OF 48 HOURS FOR FLOCCULATED PARTICLES TO SETTLE.
3. EMPTY BASIN WITHIN 5 DAYS OF A STORM EVENT.
4. CLEAN OUT POND EVERY 8 WEEKS OR WHEN AVERAGE DEPTH OF TRAPPED SEDIMENT REACHES 0.3m.

* OTHER FLOCCULATION AGENTS MAY BE USED AFTER APPROVAL FROM COUNCIL IS OBTAINED.



TEMPORARY PUMP OUT - PLAN VIEW

TEMPORARY PUMP OUT PIT

Responsive Engineering

CLIENT
LAHC

STATUS
PRELIMINARY

DISCIPLINE
CIVIL DESIGN

DRAWING TITLE
ESM TYPICAL DETAILS

PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT

ADDRESS
175-177 WELLINGTON ROAD, SEFTON

PROJECT DETAILS

DESIGN	SD
DRAWN	ER
DATE	MAR 21
DRG SIZE	A1
SCALE	1 : 20
PROJECT MGR	S.McM

WWW.JN.COM.AU

N0210227

ESM2 2

No	DATE	DESCRIPTION	BY
1	26.05.21	ISSUED FOR DA	ER
2	08.07.21	REISSUED FOR DA	ER

PROVIDE KERB SANDBAG SEDIMENT TRAPS AT APPROX 10m INTERVALS. TYPICAL.

PROVIDE SANDBAG SEDIMENT TRAPS TO PROPOSED AND EXISTING KERB INLET PITS. TYPICAL

SITE ENTRY. PROVIDE TEMPORARY STABALISED CONSTRUCTION ENTRY/EXIT (SHAKER PAD)

PROVIDE TEMPORARY CHAIN WIRE FENCE (HOARDING) ALONG ENTIRE SITE BOUNDARY

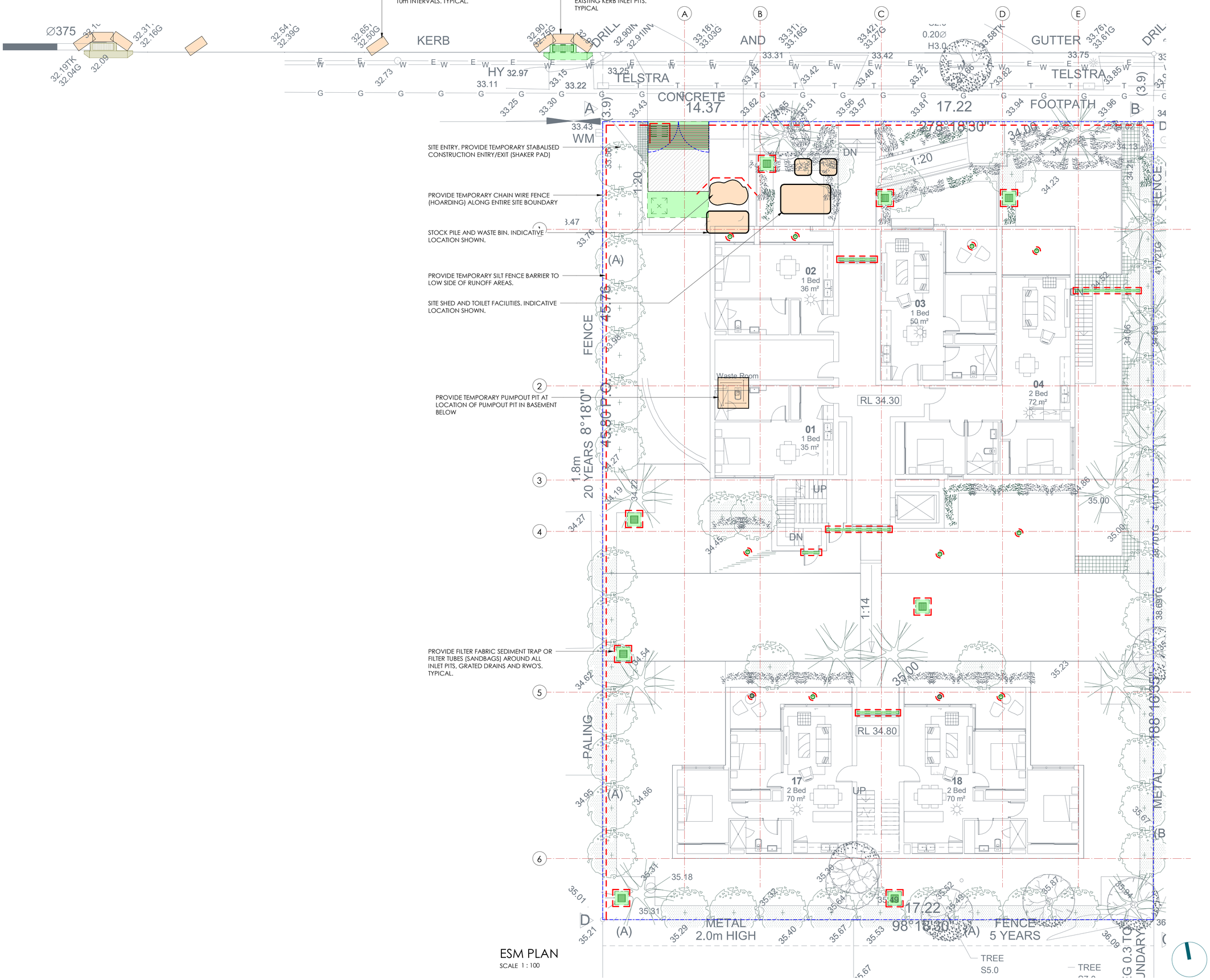
STOCK PILE AND WASTE BIN. INDICATIVE LOCATION SHOWN.

PROVIDE TEMPORARY SILT FENCE BARRIER TO LOW SIDE OF RUNOFF AREAS.

SITE SHED AND TOILET FACILITIES. INDICATIVE LOCATION SHOWN.

PROVIDE TEMPORARY PUMPOUT PIT AT LOCATION OF PUMPOUT PIT IN BASEMENT BELOW

PROVIDE FILTER FABRIC SEDIMENT TRAP OR FILTER TUBES (SANDBAGS) AROUND ALL INLET PITS, GRATED DRAINS AND RWO'S. TYPICAL.



ESM PLAN
SCALE 1 : 100

JN
Responsive Engineering

CLIENT
LAHC

STATUS
PRELIMINARY

DISCIPLINE
CIVIL DESIGN

DRAWING TITLE
ESM PLAN

PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT

ADDRESS
175-177 WELLINGTON ROAD, SEFTON

PROJECT DETAILS		
DESIGN	SD	N0210227
DRAWN	ER	
DATE	MAR 21	
DRG SIZE	A1	
SCALE	1 : 100	
PROJECT MGR	S.McM	ESM3 2
WWW.JN.COM.AU		