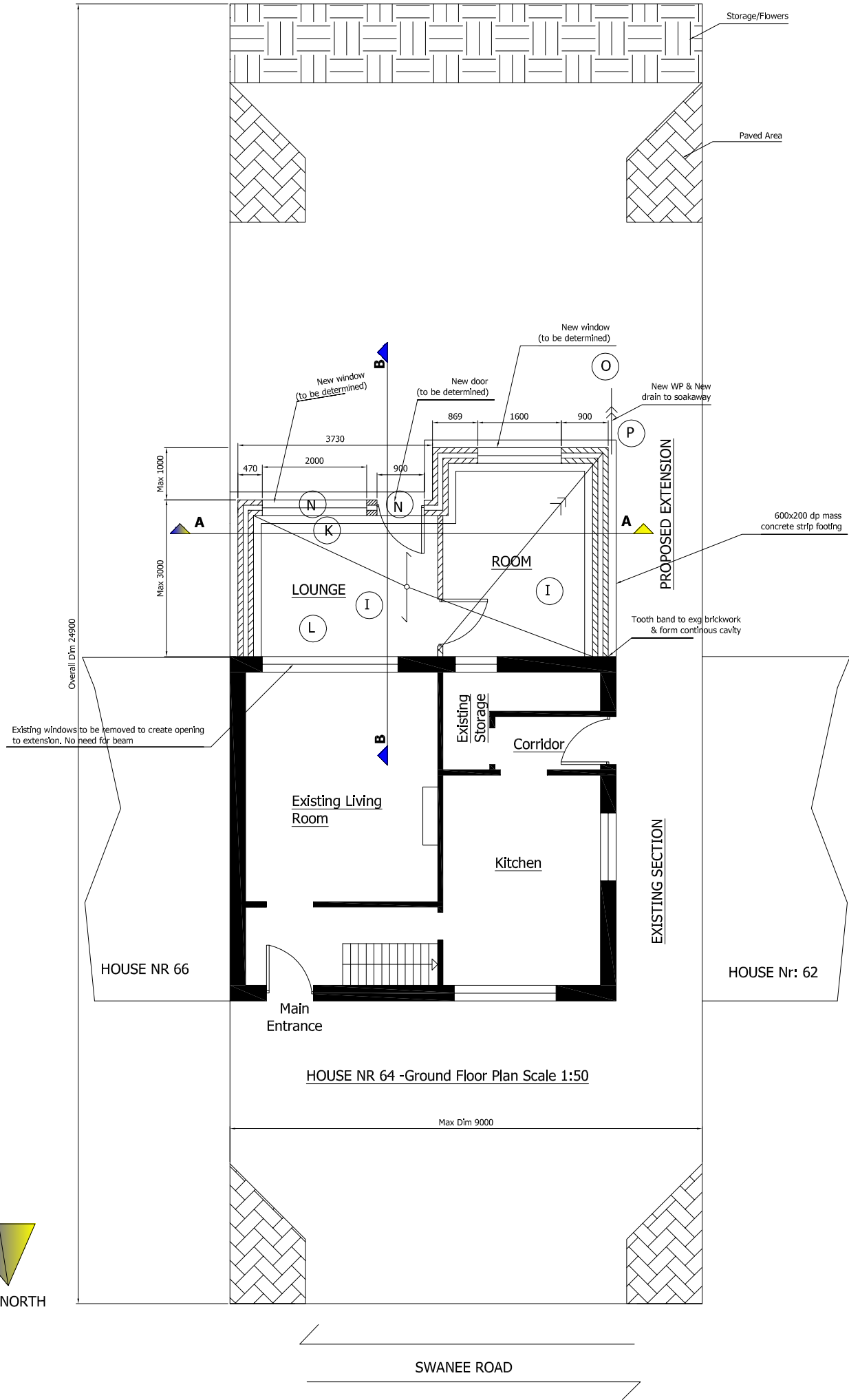
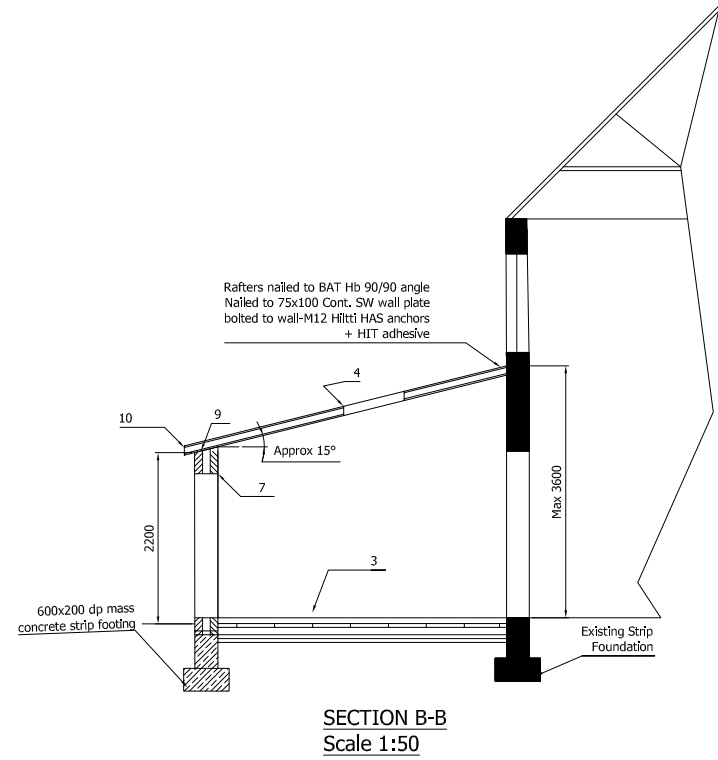
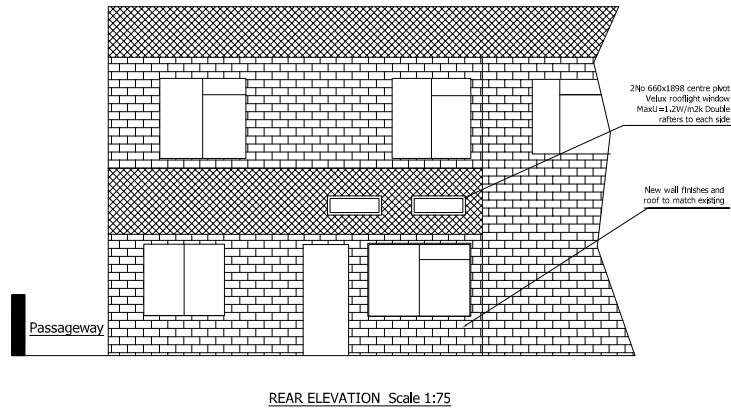
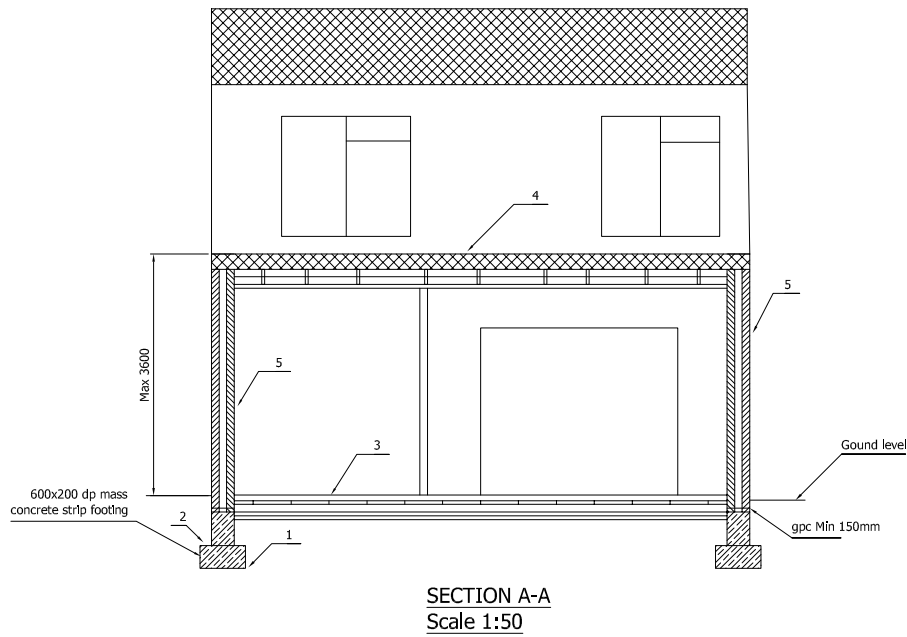




| REV                                   | MODIFICATION |             |          |         |  |
|---------------------------------------|--------------|-------------|----------|---------|--|
|                                       |              |             |          |         |  |
| CUSTOMER                              |              | RNE         | 15/06/18 |         |  |
| Mrs Joycy Ngyere                      |              | DRAWN       | DATE     | CHECKED |  |
| Engineer:                             | RNE          | Contractor: | SCALE    |         |  |
| TITLE:                                |              |             |          | SHEET   |  |
| Proposed Single Storey Rear Extension |              |             |          | 1 OF 2  |  |
| 64 Swanee Rd                          |              | DRAWING No  |          | REV.    |  |
| S70 3DE Barnsley                      |              | 001         |          | B       |  |

NOTES:

Materials:

Brickwork - minimum compressive strength of 20N/mm<sup>2</sup>, water absorption less than 12%, to match existing colour, texture & size, Mortar designation M4 (III) painting to match existing profile & colour - All to BS5628-1:2005. Brickwork courses to match existing.

Blockwork - Celcon HI-Strength minimum compressive strength 7.3N/mm2, mortal designation M4 (III) to BS5628-1:2005.

Timber to be strength class C24 to BS 5268-2:2002.

Concrete to be designated mix to conform to BS8500-2 to include polypropylene fibres (0.9kg/m<sup>3</sup>), Mass concrete GEN1, Slump class 53

Reinforced concrete RC35, Slump class S2

Steel work (if needed) - Grade S275 - hand cleaned, wire brushed & primed 2 coats Zinc Phosphate. Steel in contact with external walls to be coated with HD Bitumen paint, Galvanised to BS EN ISO 1461, steelwork to be in accordance with the National structural steelwork Specification for Building Construction - 5th Editions - CE Marking Version, All steelwork bolts to be grade 8.8 (Assembly to be CE Marked) and all welds to be 6mm continuous fillet weld.

Construction

Strip Foundations:

Excavation to be taken down to good firm ground capable of accommodating a safe allowable Bearing Pressure of 50kN/m<sup>2</sup> to the satisfaction of the Local Authority Building Inspector. Mass concrete footings must be taken down below existing foundation depth & trench walls must be supported at all times as necessary (a ground investigation has not been carried out).

Walls below ground:

305mm dense concrete trench block or Class E Engineering block below ground. Any cavity to be filled with week concrete up to ground level or minimum 225mm below lowest dpc level. 2000g Visqueen dpc to both leaves, minimum 150mm above external ground level.

Timber ground floor- Max U=0.22W/m2k. P/A=0.579

16mm tongue & grooved floor boards (or 19mm flooring grade moisture resistant chipboard type C4 to BS5669 - 75x75 perimeter noggins to be provided) on 75x125 SW joists at 400mm centres (min. 180mm clear to oversite), seated on dpm on 100x50 SW wall plate on 1025 brickwork sleeper walls (102.5mm brickwork built up off 100mm concrete overall& reinforced with 1 layer A193 fabric on Visqueen 1200g on 50mm sand blinding -ensure that the ground is fully compacted prior to laying the binding) and joist hangers /BAT SPH

140) to external walls, Joists to be positioned above wall dpc level- Celotex tuff-R GA 4110 (110mm) insulation board fitted between joists (top level with top of joists). Provide 38x38 herringbone &buts between joists at mid span. Fit Calotex TB 2020 between joist & external wall. Fit expanding foam taps under skirting & a continuous bead of Sealant to the back of tile skirting & to hell seal the floor. Air bricks to be incorporated in external wall below dpc level to give 1500mm²/m cross floor ventilation.

External roof Max U=0.18W/m² k:

Interlocking roof tiles (colour to match existing ties) to be laid in accordance to BS5534, to be fixed to 38x25 SW battens on reinforced roofing felt on 75x150xSW rafters joist at 400mm centres. All timber to be treated for Use Class 2 i.e Vacsol Aqua System or equal approved. SW noggins to be fitted between first three rafters local to gable wall restraints. Rafters to be fixed & birds mouthed to 100x50 SW continuous wall plate using BAT HD 9090 Angles with 8 No. 3.75x30 square twist nails

Insulation:

Fit Celotex GA 4100 (100mm) insulation panels between rafters, maintaining 50mm clear air gap above the panels. Fit Celotex PL 4062.5 (62.5mm) insulation boards under the rafters (Board joints sealed as VCL +Air leakage barrier) + plater & light weight skim & Celotex TB3020 insulation between rafter & gable wall. Provide Glide vale Monovent MR50 (equivalent to a continuous 5mm air gap) to mono pitch roof.

New masonry cavity walls - Max U=(a) 0.28 (b) = 0.23W/m² k:

Outer leaf 102.5mm Brickwork, inner leaf 100mm blockwork

Inner & Outer leaves tied across 100mm cavity using Staifix stainless steel wall ties (supplied with insulation board retaining clips) at 750mm horizontal & 450mm vertical centres (decreased to 300mm horizontal centres local to openings). Celotex CG 5050 (50mm) insulation boards are to be fitted in accordance with tile manufacturer's instructions leaving 50mm cavity. Internal face 12.5mm foil backed plasterboard on dabs & skim coat SW skirtings on all walls are to match existing.

Cavity reveals/verges:

DPC to be incorporated in all jambs/cills, Close the cavity & verges using proprietary cavity closer system - Cavi 60 Type V Caviclose by Cavity trays of Yeovil, Somerset to all reveal/cills, fitted in accordance with the manufacturer instructions. The closer is to overlap the window/door frame by 30mm. The frames should be sealed front & back. Mineral wool to be compressed between top of gable & roofing felt to close cavity.

Lintels to external cavity walls

To be Calnic or IG insulated, galvanised mild steel type, with 150mm minimum bearing at each end. Provide cavity tray dpc to project 150mm at each and with stop ends. Weep holes to be provided at 450mm centres. Plaster the internal soffit 13mm, 2 coat plasters to give ½ hour fire protection.

Wall restraints:

100x50 SW wall plate, tied to wall using vertical 'Standard Bat straps @ 1200mm centres (any straps that cannot be positioned local to openings are to be supplemented by straps @300mm centres to each side of openings). Gable walls tied to first 3 Rafters/Celling Joist using M305 BAT straps at 1000mm centres. All walls tied to first floor joist using M305 BAT straps @ 1200mm centres (whether tile joist span horizontally or parallel to tile wall). SVV noggings are to be fixed between the first 3 joists spanning parallel to wall.

Eaves:

Robust detail 4.04 - 50mm cross flow ventilator to be provided over 200mm compressed mineral wool Insulation (Λ 0.04 W/m k) packing the gap between roof & wall Insulation and closing the cavity. Fascia & soffit boards with 25mm continuous air gap to soffit with insect mesh.

Forming new openings (if required):

Contractor to rigidly prop & brace walls, floors etc. prior to removal of any loadbearing masonry & must cordon off the area. Propping system is to safely accommodate a Uniform Distributed Load of 25kN/m. New beams are to be packed tightly up to supported walls/floors using drypack mortal & slate shims/hardwood wedges respectively. Make good plaster to exposed existing masonry by fitting expamet & plaster with 2 coats lightweight plaster.

Air Sealing:

Joints are to be sealed using Hilti CF 812 Pressure injection air sealer.

A) All work to be carried out in strict accordance with the current edition of the Building Regulations & to the complete Satisfaction of the Local Authority Building Inspector.

B & C) The contractor must visit site in order to fully satisfy themselves with the full scope of works/access/services during preparation of the tender

D) The contractor is to produce full Method Statement/Risk Assessments & is to carry out the works in accordance with the current edition of the CDM Regulations.

E) Contractors to give all necessary guarantees and certificates upon completion of works.

F) The contractor is to establish the position of all incoming services and is to include cost for any modifications &/removal of services affected by the works. This must be carried out in strict accordance with Statutory Authority Requirements.

G) The contractor is to cart away and tip all spoil/demolish material & must ensure that site is clean, tidy and secure at all times

H) The contractor is to take all necessary site dimensions to ensure that all works are correctly done. The engineer is to be informed immediately of any discrepancies between the drawings and the existing structure.

I) All electrical works is to be carried out by a fully qualified Electrical Engineer (Member of Competent Person's Scheme) in accordance with the N.I.C.E.I Regulations. A minimum of 75% of all lights fitting to be low energy bulbs only

J) Mechanical extraction fittings, if required are to be fitted by a person registered by Building Engineer Service Competence Accredited Ltd in accordance with Part F of the building Regulations. Minimum regulations –kitchen 30l/s if placed over hob,

60l/s elsewhere, where ducks pass through floor void, they are to be fire protected to give ½ hour fire protection-below ceiling level with 2 layers of staggered 12.5mm plasterboard joints taped, filled & skim

K) Central heating radiation & pipe work to be repositioned/fitted in accordance with the client requirements. Any installations must be carried out by approved & registered engineers and boiler checked for full compliance in accordance with Part J & L of the Building Regulations ("Gas Safe Register for Gas & OFTEC for all installations"). A permanent air supply and carbon monoxide is required to all heating appliances in accordance with Part J.

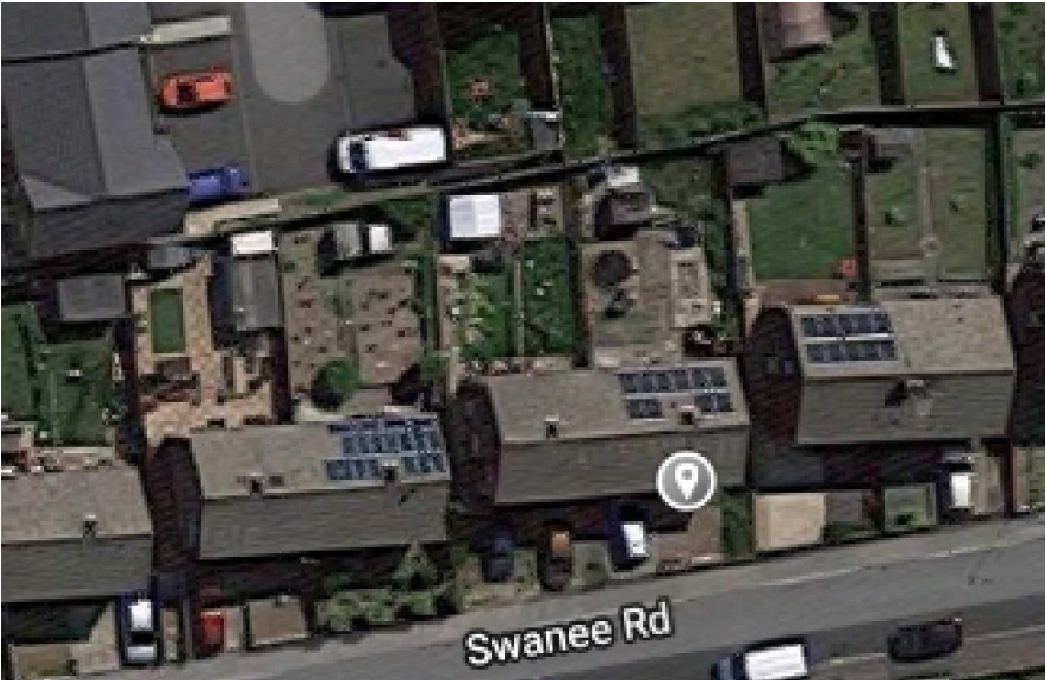
L) Automatic fire detection & Alarm system to BS5839-8-2004. Minimum 2No detector/storey, situated in circulations areas & within 7.5m to the door of every habitable room and minimum 300mm from wall or light fitting. Wire to separate fused circuit at the distribution board may operate at lower voltage via mains transformer, to be interlink and fitted in accordance with the manufacturer recommendations. Operation Manual must be presented to the client upon completion of installation.

M) All plumbing futures & fittings to be fitted in accordance with the client requirements. Hot water services are to be fitted by a person registered by Building Engineering Services Competence Accreditation Ltd. Water pipes, Wash hand basins 32mm diameter+ anti-Vac trap-All to be connected to existing drains as applicable.

N) Windows and doors -All to be fitted by FENSA registered contractor. UPVC frames to match existing - Clear glazed openings casement with necessary & security locks. Doors and frames to create a minimum opening of 900mm, double glazed with two panes minimum 4mm glass-outer pane Low E + 16mm1Argon air space to achieve maximum U=1.1W/m² k, or Window Energy ratings Band C. Window & at least 1/20th of the room floor area with openings at least 1.75m above floor level to give 8000mm² back ground ventilation (4000mm² for Kitchen Bathroom & utility) to be controllable and secured. All glass 800mm above floor , to door and 300mm either side of the doors to be toughened or laminated safety glazing to BS620B-1981 or BS 6282 Part 4:1994. All habitable rooms above ground floor should have a window suitable for emergency egress. It should have an openable that is at least 0.33m² and at least 450mm high by 450mm wide, the bottom of the opening being within 800mm to 1100mm off floor level. Windows to be fitted with egress hinges - Windows must remain in open position when opened.

O) Existing drains are to be fully inspected prior to any excavations. 100mm drains gullies & inspections chambers to be Hepworth's Supper Sleeve system or equal approved, with flexible coupling, to connect to existing drainage system (surface water to drain into existing surface water system where possible). New drains to be laid in class N bedding of 100mm pea gravel & 150mm of selected fill. New drains less than 450mm below ground level/under buildings are to be encased in 150mm thick concrete with joints @ maximum 5.0m centres. Foul drains-minimum 1:80 gradient.

P) New UPVC gutters & RWP's to match existing or as noted. RWP's with slow bend & rodding point to discharge below level or grate to roadable back inlet, tapped hopper type gully.



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| CUSTOMER                              |              | RNE         | 15/06/18 |         |  |
| Mrs Joycy Ngyere                      |              | DRAWN       | DATE     | CHECKED |  |
| Engineer:                             | RNE          | Contractor: |          | SCALE   |  |
| TITLE:                                |              |             |          | SHEET   |  |
| Proposed Single Storey Rear Extension |              |             |          | 2 OF 2  |  |
| 64 Swanee Rd                          |              | DRAWING No  |          | REV.    |  |
| S70 3DE Barnsley                      |              | 001         |          | B       |  |