FOUNDATIONS
Foundations to be designed by Structural Engineer and constructed in strict accordance with Engineers details and as directed by the Building Inspector. Concrete must not be poured in freezing conditions.

FOOTINGS
Walls below damp proof course to be built in solid or cavity construction to suit wall construction above and as shown on drawings. External wall footings to incorporate additional 100mm brick skin under plinth. Footings to be constructed using FL or FN bricks or suitable brick specified by the manufacturer.
Blockwork used for the inner skin of cavity construction or to internal walls should be strictly in accordance with manufacturer's specification.
For cavity walls, provide concrete cavity fill to within 225mm of the DPC.
Damp proof courses to be bitumen, to BS 6398, or minimum 0.5mm black polyethylene, to BS 6515, with welted or 100mm lapped joints, to each skin of footings. Backfill trenches in compacted layers to a maximum of 150mm below DPC.

GROUND FLOORS (Insulated suspended beam and block - 0.16 U-value to SAP requirements)
Floor to be minimum 75mm sharp sand and cement screed, to BS 8204, reinforced with D49 fabric mesh poured on vapour control/slip layer over total 140mm Polyfoam Floorboard Standard (65 + 75mm layers) (0.029W/mK), or similar equivalent performing floor insulation achieving min. 0.16 U-value as required within the SAP assessment. (P/A=0.48 elemental method). Insulation to be closely butted and taped with a 25mm upstand to perimeters, and laid in accordance with manufacturers details and Robust Details. Provide a 1200 gauge polythene DPM laid over pre-cast reinforced concrete beam and block suspended floor, to BS 8110.
Floor screed to incorporate underfloor heating pipework - system to be designed & installed by specialist.
Floor beams to be designed and supplied by specialist, with light weight infill blocks and laid in accordance with manufacturers details on DPC and over minimum 225mm void. Void to be provided with 600mm² ventilation per metre run of external walls (typically 215 x 75mm truncated air bricks with 1200mm² ventilation capacity at 2.0m c/cs to BS 493). Provide additional DPC on top of floor beams where underside of beam is less than 150mm above finished external ground level.

RAIN WATER DISPOSAL - Harvesting Tank / Soakaway
Unless otherwise noted on drawings, provide 100mm half round PVC-u gutters fixed level or to gentle falls of 1:600 and discharging to minimum 68mm downpipes (all to BS 6367).
Provide roddable bottle gullies connected to drain runs discharging into new rainwater harvesting tank(s) / overflow soakaway(s), subject to soil conditions).

Rainwater harvesting tank to be installed in accordance with the manufacturers instructions. Soakaway sizes to be calculated in relation to the drained area and the permeability of the ground (calculated using percolation test if required) in accordance with BRE Digest 365 and/or NHBC Chapter 5.3.
Soakaways to be constructed using honeycomb brickwork or perforated concrete rings surrounded with granular material and positioned at least 5.0m from the nearest building's foundation.

PLUMBING
All PVC-U fittings to BS EN 1565 and fitted to CP304. Provide rodding eyes to all changes of direction in new pipe work. All appliances to be fitted with 75mm deep seal traps and non ferrous fixings.

WC systems to be fitted with 100mm diameter outlet, cold water supply and cistern warning overflows. Wash hand basins to be fitted with hot & cold water supply, 75mm anti-syphon deep seal traps.
Baths & showers to be fitted with hot & cold water supply and 50mm anti-syphon deep seal traps.

Sanitary appliances to discharge via PVC-u waste pipes to bottle gullies, 100mm diameter PVC-u stub stacks/soil & vent pipes (SVP's), as shown on drawings. Connections to discharge pipes must be offset to avoid crossflow. Stub stacks to be fitted with air admittance valves. SVP's to terminate with a basket a minimum of 900mm above head of any windows within 3000mm.
Soil and vent pipes fitted internally to wrapped in 25mm insulation and boxed in with 25mm plasterboard covered timber framing with access panel serving rodding access at base.

BELOW GROUND DRAINAGE
Provide 110mm diameter PVC-u Osmadrain, or similar equivalent, with flexible joints and laid to falls (minimum 1:40-foul, minimum 1:60-surface water) and bedded on minimum 50mm, surrounded by 150mm, and covered by 100mm of granular bedding material.
Drains to be laid in accordance with manufacturers recommendations and discharge to inspection chambers/ manholes/connections with existing drains as shown.
Where flexible pipes are to be laid shallower than 900mm below roads or drives the run effected is to be protected by a reinforced concrete raft supported beyond the width of the drainage excavation 100mm above the drain to allow for a cushion of fill.
For flexible drain runs less than 600mm below non-vehicular areas provide bridging slabs.
Protect drains passing through foundations by encasing drain in plywood ducting and 100mm glassfibre quilt within foundation and install 2no 12mm m.s. rods over. For shallow drains install concrete lintels over drains within brickwork with a minimum of 50mm void around the pipe.

SHALLOW INSPECTION CHAMBERS
Shallow inspection chambers to be used only for invert depths of 600mm maximum.
250mm diameter one piece moulded polypropylene unit bedded on and surrounded with minimum 150mm granular material to BS 7158. Chamber to be fitted with 325mm diameter cast iron cover and frame. Only to be used in situations inaccessible to vehicles.

UNIVERSAL INSPECTION CHAMBER
Universal inspection chambers to be used only for invert depths of 1000m maximum.
450mm diameter moulded polypropylene unit bedded on and surrounded with minimum 150mm granular material to BS 7158 with 150mm concrete around top of shaft to support 450mm diameter Class C cast iron cover and frame. Where situated on driveways provide shuttering around chamber and form 150mm thick concrete slab at a suitable level for Class B cover and frame.

MANHOLES (up to 2.7m deep)
Manholes to be 1200 x 750mm internally and consist of 150mm C15 concrete base with 225mm Class B engineering brick flush pointed internally with 1:3 cement mortar and fitted with a reinforced concrete cover slab. Alternatively use 1050mm diameter (1200mm diameter if deeper than 1.5m) pre-cast concrete chamber and shaft rings to BS 5911 fitted to manufacturers specification.
Provide 600mm square or circular BS cover and frame suitable for loading situation.
Form smooth rounded benching at a minimum fall of 1:12. Manholes deeper than 1m to be fitted with metal step irons or fixed ladders.

EXTERNAL WALL CONSTRUCTION (Insulated Cavity)
Masonry external walls to consist of insulated cavity construction achieving an overall U-value of 0.2 to meet the SAP assessments requirements subject to a maximum 25% of glazed openings (calculations required for over 25%). Use vertical twist type wall ties, to BS 1243, to be fitted as work proceeds at 450mm vertical centres and 750mm horizontal centres reducing to 300mm centres at cavity closures and movement joints.
Lintels to be insulated and be "top hat" style, or have a perforated baseplate with a maximum effective conductivity of 30W/mK. Provide suitable stop ends to outer skin to suit perp joints and a minimum 2no weep vents (at maximum 450mm c/cs). Openings to be provided with prefabricated insulated cavity closer profiles achieving 0.45m5K/W thermal resistance path. Refer to Robust Details 3.09-3.12.
Cavity insulation to be taken at least 150mm below the top of the ground floor insulation and, for gable ends of pitched roofs, at least 250mm above the underside of the roof insulation. Insulation to be fitted in accordance with manufacturers recommendations and Robust Details.

Specification.
102.5mm brick / 100mm dense blockwork outer skin where shown with low level 100mm wide brickwork plinth topped with angled special plinth top course (refer to sections/elevations) 100mm cavity partially filled with 75mm Celotex CG4000 Insulation (leaving 25mm clear air gap). Inner wall skin to be 100mm Durox Supabloc (3.5N/mm5 / 0.11 lambda) (subject to engineers requirements). Internal blockwork to be finished with lightweight plaster or plasterboard on dabs internal finish.
Total wall construction to achieve min. 0.2 U-value in accordance with the SAP Assessment. Alternative products can be used subject to achieving required U-values and minimum compressive strengths required by Structural Engineer.

MOVEMENT JOINTS
Provide full height vertical movement joints to external walls in accordance with BS 5628. Joints in blockwork skins to be spaced at approximately 3.0m from corners and at maximum 6.0m centres. Joints in clay brickwork to be spaced at approximately 6.0m from corners and at maximum 12.0m centres.
Alternatively provide bed reinforcement, to increase spacing of movement joints, in accordance with manufacturers design.
Movement joints to be 10mm wide (blockwork) and 16mm wide (brickwork) with flexible cellular polyethylene, cellular polyurethane or foam rubber and be sealed externally. Joints to be carried through wall finishes and provided with plaster stop beads.
Provide flat de-bonded metal ties at 450mm vertical centres across joints.

WALL PLATES
Bed minimum 75 x 50mm treated softwood wall plates, With half lapped joints, for fixing of roof timbers.
Provide minimum 1000mm long 30 x 2.5mm galvanized steel straps at a maximum of 2.0m centres to anchor wall plate.
Screw fix straps to walls with a minimum of 3no fixings (1st fixing maximum 150mm from bottom). Top of strap to be turned over and nailed to the wall plate

GABLE RESTRAINT
Provide solid timber horizontal noggins between last truss/rafter and external wall, and between last 3no trusses, at a maximum of 2.0m centres.
Install 30 x 5mm galvanized steel lateral restraint straps, to BS5628, to the underside of trusses/ rafters/noggins and fix with minimum 4no 75 x 4mm (8SWG) round nails. Strap turn down to be built into the inner skin of the gable wall, held tightly against the centre of a fully bedded block.

BEAMS
Install beams and padstones/bearings in accordance with structural engineers drawings/calculations.
Downstand beams to be protected on three sides with 15mm Glasroc S frameless encasement, fitted in strict accordance with manufactures details, to achieve half hour fire resistance.

RENDER
External cement render to be one 12mm thick 1:1:6 cement/lime/esand undercoat with a dry scratch keyed finish to take 8mm thick finishing coat.
The top coat must be weaker and thinner than the undercoat and generally render must not be stronger than the background material (masonry).
Use course sharp sand to BS 1199/1200 for undercoat and avoid excessive proportions of very fine material for finish coats. Use hydrated limes to BS890. Refer to BS 5252 and masonry manufacturers guidelines for recommended application details.

INTERNAL WALLS (blockwork)
Internal walls to be 100mm Durox Supabloc with plaster finish (tested to achieve 40dB).
Loadbearing walls to be minimum 3.5N/mm2 unless otherwise specified by the Structural Engineer. Non loadbearing partitions to be connected to loadbearing walls using expanded metal or wall ties at a maximum of 300mm vertical intervals to reduce the risk of cracking.

INTERNAL WALLS (non loadbearing partitions)
Internal partition walls to be Gyproc Metal Stud Partition (minimum 45mm thick), or similar prefabricated metal studwork system, fixed in accordance with manufacturers details, including 15mm deflection head detail. For timber walls, studs are to be minimum 75mm thick.
Infill walls with 50mm Quiet Zone partition roll insulation (minimum density 10kg/m3), screw fix tapered edge 12.5mm Gyproc Wallboard 10 (minimum mass 10kg/m2) and finish with plaster skim (achieving sound insulation and half hour fire resistance).
Provide coving, fixed to ceiling only, to work in conjunction with, and cover, deflection detail.
Install double joists/noggins to support partitions on timber floors.
Partition walls shown on drawings are based on an overall thickness of 100mm. Stated dimensions to be adjusted to suit selected studwork system.
All joints to be well sealed in order to provide required sound insulation particularly to Bedroom walls and walls to rooms containing a water closet.

OPENINGS/GLAZING
All new timber, aluminium or PVC-U windows, doors and rooflights to be double glazed to a minimum U-value identified by a project specific thermal calculation report.
Opening elements of windows, doors and rooflights to be provided with draught stripe and be fitted in strict accordance with Robust Details (typically details 3.10 and 3.12).
Frames to be provided with trickle vents to achieve equivalent of 5000mm2 area of ventilation in habitable rooms and 2500mm2 in all wet rooms. Background ventilators to achieve min. total equivalent ventilator area of ??2000mm2. If required, install hit and miss ventilators within external walls to increase ventilation rates.
Windows and external doors, to habitable rooms, to provide a minimum total opening area equivalent to 1/20th of the room floor area for rapid ventilation.
To ensure good transfer of air throughout the dwelling, there should be an undercut of minimum area 7600mm2 in all internal doors above the floor finish (equivalent to an undercut of 10mm for a standard width door).
All glazing within critical locations to be provided with safety glazing to BS 6206:1981.
Critical locations are defined as the following:
* All glazing within 800mm of internal or external finished floor levels.
* All glazing in doors, and glazing within 300mm of doors, that is within 1500mm of internal or external finished floor levels.

PLASTER WALL FINISH
Internal plaster finish to be one 11mm thick coat of Carlite Browning undercoat lightly keyed to take 2mm thick, steel float finished, Carlite Finish top coat applied in accordance with BS 1191 and manufacturers guidelines.

WALLS (rendered studwork and dormer)
External wall to consist of 150 x 50mm sw vertical studs at 450mm centres, and noggins as appropriate, on 150 x 50mm SW sole plate up to 150 x 50mm sw head plate. Sole plate to be fixed to floor joists and restrained using galvanised metal straps.
Provide double studs where double joists are to be supported. Provide timber lintels over openings as shown and support on additional "cripple studs."
Walls to be finished externally with 20mm 2 coat render to BS 5262 on expanded metal lathe on breathable felt on 18mm marine plywood (fixed directly to studwork for strength, stiffness & stability).
Infill between studs with total thickness 120mm thick Kingspan Thermawall TW55' insulation placed between the studs and line studs internally with insulated plasterboard (thickness TBC) with skim finish, on 1000 gauge vapour barrier. Overall wall construction to achieve 0.2 U-value as required within the SAP assessment.

STAIRS (maximum 1000mm wide)
All stair details shown on drawings are indicative. Prior to fabrication the fitting contractor is to carry out a detailed measured survey on site and ensure compliance with BS 585 and the following: The sum of twice the rise plus the going should not be more than 700mm or less than 550mm. Overall stair dimensions to be divided equally into tread sizes.

Pitch – 42 degrees maximum.
Headroom – minimum 2000mm above pitch line.
Going – 223mm minimum, 300mm maximum.
Rise – 200mm maximum, 165mm minimum.
OR
Going – 245mm minimum, 260mm maximum.
Rise – 220mm maximum, 155mm minimum.

For stairs with tapered treads the minimum going of any part of the tread shall not be less than 50mm.

Balustrading to be fitted on open sides of stairs and landings. Handrails to be fitted, with at least 25mm clearance from wall, on one side of enclosed stairs and to outside edge of tapered tread stairs.
Handrails/balustrading to be fitted at 900-1000mm above floor level/pitch line.

Open riser stair treads should overlap at least 16mm.

There should be no opening in any part of the stair which would allow the passage of a 100mm diameter sphere.

FIRST / SECOND FLOOR CONSTRUCTION (timber)
First / second floor to be 22mm Caberfloor P5 or similar Type C4 T&G moisture resisting flooring grade chipboard (minimum mass 15kg/m2) laid staggered with glued joints, on floor joists or battens (depending on underfloor heating installation requirements - TBC), as shown, supported on suitable joist hangers to BS 5268 and BS 4071 or built into walls (with voids sealed) subject to Local Authority acceptance.
Double joists, where installed, to be bolted together 150mm from each end and at 450mm centres, at mid depth, using M12 bolts, toothed plate connectors and 35mm square washers prior to installation. Double up joist centres and provide bearers under baths, appliances and other areas where excessive loads may occur. Provide 38 x 38mm herringbone strutting at mid span centrally for joists spanning 2.5-4.5m, with timber block between wall and last joist at the end of run of strutting.
Provide solid strutting where joists are supported on steelwork, hangers or loadbearing intermediate walls.
Infill between joists with 100mm Crown Wool (or similar insulation of a minimum density of 10kg/m3) and soffit floor with 12.5mm Gyproc Wallboard 10 (minimum mass 10kg/m2), with staggered scrimmed and paper taped joints, and skim finish to achieve sound insulation and 1/2hr overall fire resistance.
Provide 10mm gap to edges of chipboard at room perimeters and support on joists or noggins nailed with min 55mm long ring shank nails at 200-300mm c/cs and 400-600mm c/cs elsewhere.

LATERAL RESTRAINT (floors/ceiling)
Where joists span parallel with external walls, Provide 30 x 5mm galvanized steel lateral restraint straps and solid timber noggins at a maximum of 2.0m centres, carried over 3no joists, for lateral restraint to BS5628.
Provide solid timber packing between end joist and external wall. Notch joists, top or bottom, and fix straps with minimum 2no screws or nails into each joist. Straps to be positioned centrally, built into, and turned over, a full block within the inner skin of the external wall.
Where joists run perpendicular to wall use fully nailed restraint type joists hangers or ensure minimum 90mm bearing of joists built into walls.

INSULATION OF AIR PATHS
Install loft hatches insulated to 0.35 W/m5k U-value, Or better, with draught seals and suitable latch device to ensure draught proof seal. Seal all voids where services/ducting pass through walls, floors and ceilings.
Thermal bridging, air leakage, gaps and joints between insulation and building elements to be limited by carrying out works in compliance with Robust Details publication or by pressure testing the completed building to Part L requirements.

ELECTRICAL WORKS
All new and extended electrical work (including lighting) is to be designed, installed, inspected and tested in accordance with BS 7671 (I.E.E. Wiring Regulations 16th Edition)and Approved Document P and M. The works are to be undertaken by an installer registered under a suitable electrical self-certification scheme, or alternatively by a suitable qualified person, with a certificate of compliance produced by that person to Building Control on completion of the works.
Lighting (internal and external) is to include a minimum proportion of energy efficient fittings in accordance with Approved Document L1B.
A commissioning certificate, showing compliance, should be issued to Building Control on completion of works.
Operating and maintenance instructions, demonstrating controls/adjustments and service/maintenance schedules, to be provided to the building occupier as part of the installation.

FIRE DOOR FD20 (STAIRWELL ENCLOSURE)
Provide 20 minute fire doors and frames to stairwell enclosure as noted on the plans (with intumescent strips).
Doors to comply with BS 476-22: 1987 and be fitted with self Closing devices and face fixed hardware suitable for Fire situations.

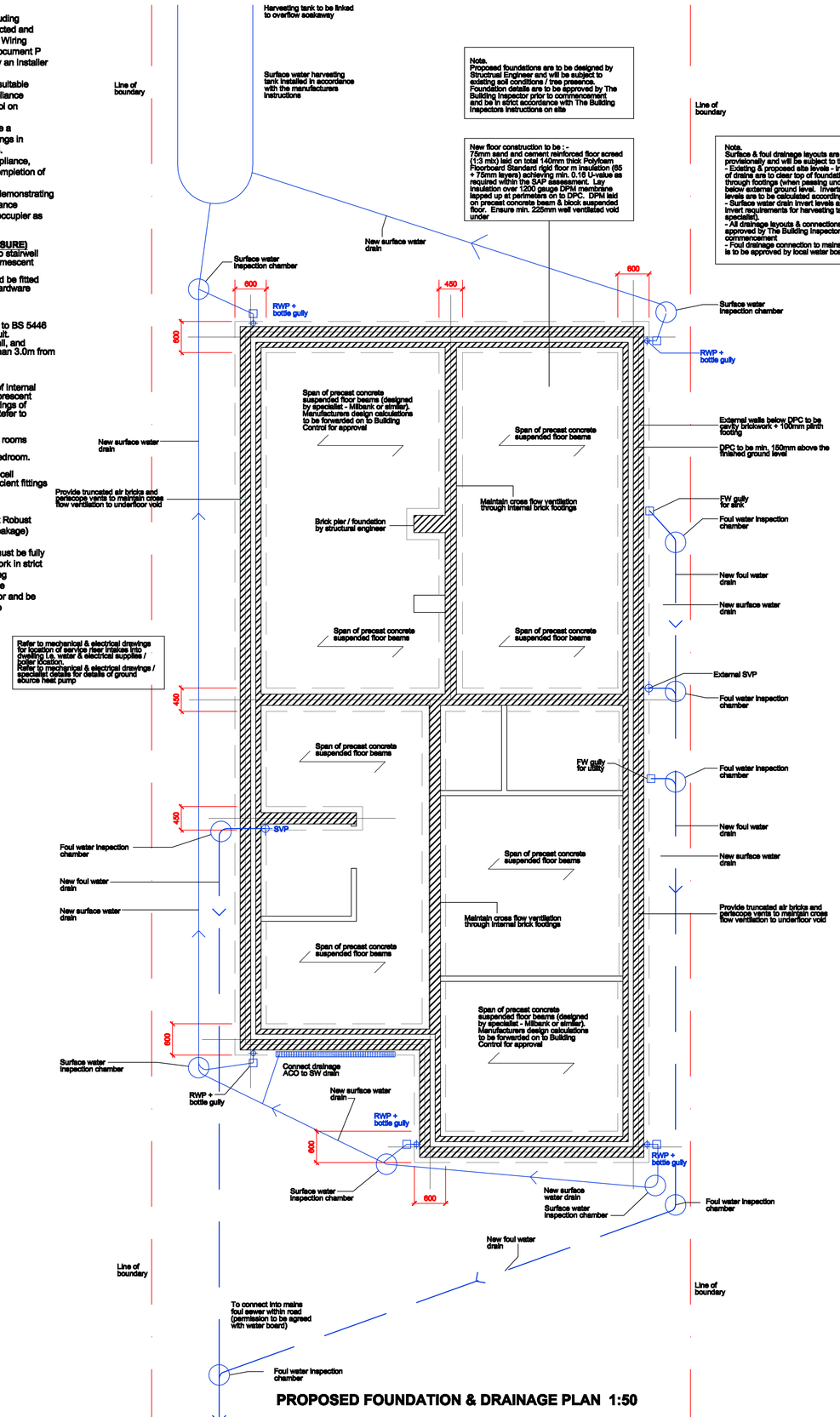
SMOKE DETECTORS
Provide mains operated smoke detectors, to BS 5446 part 1, connected to separately fused circuit.
Detectors to be situated to ground floor hall, and first/second floor landing areas no more than 3.0m from bedroom doors.

LIGHTING
Proposed dwelling to have a percentage of internal lights fittings that only accept compact fluorescent lamps (CFL), or similar energy efficient fittings of greater than 40 lumens per circuit-watt. Refer to SAP assessment for requirement.

These light fittings should be prioritized to rooms expected to have the most use as follows:
Hall, Lounge, Landing, Dining, Kitchen, Bedroom.

All external lighting to be fitted with photo-cell and movement sensors and/or energy efficient fittings of greater than 40 lumens per circuit-watt.

ROBUST DETAILS
It is intended, as part of this proposal, that Robust Details (limiting thermal bridging and air leakage) are to be used wherever applicable.
The contractor carrying out these works must be fully conversant with the Robust Details and work in strict accordance with them. A report, confirming compliance of works, is to be signed by the contractor and/or the contract administrator and be submitted to the Building Inspector prior to practical completion.



PROPOSED FOUNDATION & DRAINAGE PLAN 1:50

Revision	Date
-	-

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Description
PLOT 20A
PROPOSED FOUNDATION AND DRAINAGE PLAN WITH SPECIFICATION

Status
CONSTRUCTION

Scale	Drawn	Date
A1@1:50	PDE	FEB 11
Job number	Drawing no.	Revision
ADP099BRG	05	-