

## KEY

| GENERAL |                           | TELECOM POLE |                        |
|---------|---------------------------|--------------|------------------------|
| (ACP)   | ASSUMED CONNECTION POINT  | VP           | VENT PIPE              |
| BN      | LITTER BIN                | WM           | WATER METER            |
| CHW     | CHEMICAL WATER            | WO           | WASH OUT               |
| COW     | CABLE ON WALL             | WR           | WATER RISER            |
| CW      | COMBINED WATER            | WVWELL       | WET WELL               |
| DIS     | DISUSED                   | DEPTHS       |                        |
| DK      | DROP KERB                 | d            | ELECTRONICALLY DERIVED |
| EOT     | END OF TRACE              | Pd           | PASSIVELY DERIVED      |
| FO      | FIBRE OPTIC               | Pd           | DEPTH TO CROWN         |
| FP      | FOOTPATH                  | Id           | DEPTH TO INVERT        |
| FW      | FOUL WATER                | Sd           | DEPTH TO SOFFIT        |
| GP      | GATE POST                 | MATERIALS    |                        |
| GPR     | GROUND PENETRATING RADAR  | AC           | ASBESTOS CEMENT        |
| HV      | HIGH VOLTAGE              | ALK          | ALKATHENE              |
| KV      | KILO VOLT                 | BK           | BRICK                  |
| LB      | LETTER BOX                | CI           | CAST IRON              |
| LV      | LOW VOLTAGE               | CO           | CONCRETE               |
| NDI     | NO DEPTH INFORMATION      | DI           | DUCTILE IRON           |
| NFI     | NO FURTHER INFORMATION    | HOPE         | HIGH DENSITY PE        |
| NPV     | NO PIPES VISIBLE          | MDPE         | MEDIUM DENSITY PE      |
| OSBM    | ORDNANCE SURVEY BENCHMARK | PE           | POLYETHYLENE           |
| POW     | PIPE ON WALL              | PER          | PERFORATED             |
| RED     | REDUNDANT SERVICE         | PVC          | POLYVINYL CHLORIDE     |
| RMAIN   | RISING MAIN               | SI           | SPUN IRON              |
| RW      | RETAINING WALL            | ST           | STEEL                  |
| SA      | SURVEY ABANDONED          | URIB         | ULTRA RIB              |
| SW      | SURFACE WATER             | VC           | VITRIFIED CLAY         |
| UTL     | UNABLE TO LIFT            | FENCES       |                        |
| UTS     | UNABLE TO SURVEY          | BMW          | BARBED WIRE FENCE      |
| VL      | WATER LEVEL               | CB           | CLOSED BOARDED FENCE   |
| WL      | WATER LEVEL               | CPL          | CONCRETE PANEL FENCE   |
| WD      | WATER LEVEL               | CI           | CORRUGATED IRON FENCE  |
| WP      | WATER LEVEL               | CNP          | CHAIN LINK FENCE       |
| WR      | WATER LEVEL               | IR           | IRON RAILINGS          |
| WS      | WATER LEVEL               | PR           | POST AND RAIL FENCE    |
| WT      | WATER LEVEL               | PMW          | POST AND WIRE FENCE    |
| WV      | WATER LEVEL               | WM           | WIRE MESH FENCE        |

| LEVELS |                 |
|--------|-----------------|
| BD     | BACK DROP LEVEL |
| BL     | BASE LEVEL      |
| CL     | COVER LEVEL     |
| FL     | FLOOR LEVEL     |
| IL     | INVERT LEVEL    |
| RL     | ROOF LEVEL      |
| SOF    | SOFFIT LEVEL    |
| WL     | WATER LEVEL     |

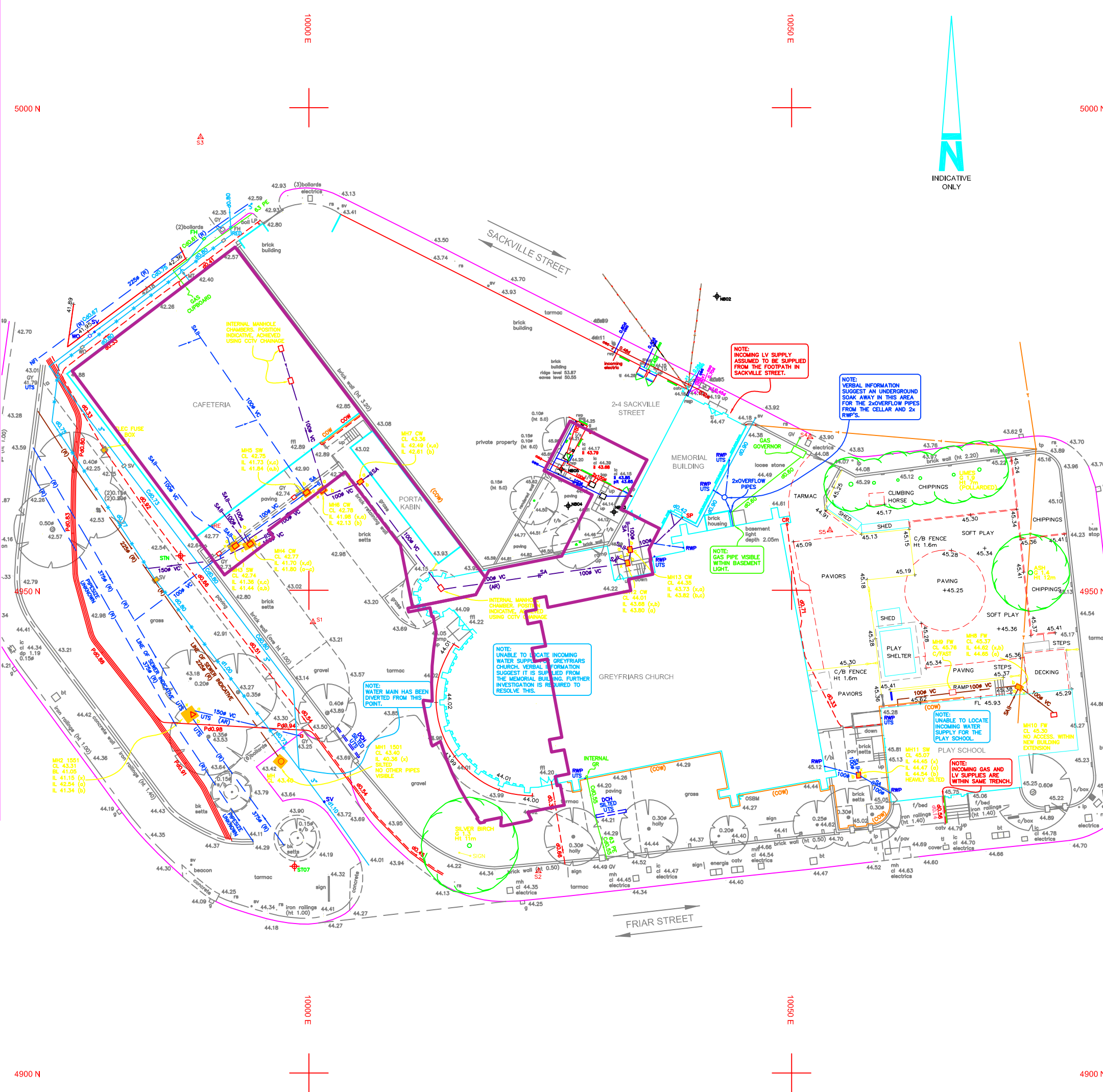
| APPARATUS |                      |
|-----------|----------------------|
| AV        | AIR VENT             |
| BB        | BELISHA BEACON       |
| BO        | BOLLARD              |
| BOL       | BOLLARD LIGHT        |
| BS        | BUS STOP             |
| BT        | BT INSPECTION COVER  |
| CATV      | CABLE TELEVISION     |
| CB        | CONTROL BOX          |
| CPIT      | CATCH PIT            |
| CR        | CABLE RISER          |
| DCH       | DRAINAGE CHANNEL     |
| EB        | ELECTRIC CONTROL BOX |
| EP        | ELECTRIC POLE        |
| ER        | EARTH ROD            |
| FFP       | FUEL TANK FILL POINT |
| FI        | FIRE HYDRANT         |
| GR        | GAS RISER            |
| QV        | GAS VALVE            |
| QY        | GULLY                |
| IC        | INSPECTION COVER     |
| INT       | INTERCEPTOR          |
| KRB       | KERB OUTLET          |
| LD        | LOOP DETECTOR        |
| LH        | LAMP HOLE            |
| LP        | LAMP POST            |
| MP        | MANHOLE              |
| MT        | METER                |
| MWELL     | MONITORING WELL      |
| PO        | POST                 |
| PTG       | PIPE TO GROUND       |
| PU        | PUMP                 |
| RS        | ROAD SIGN            |
| RWP       | RAIN WATER PIPE      |
| SC        | STOP COOK            |
| ST        | STAY CABLE           |
| SV        | SOIL VENT PIPE       |
| SV        | SOIL VALVE           |
| TGB       | TELEPHONE CALL BOX   |
| TL        | TRAFFIC LIGHT        |
| TLC       | TRAFFIC LIGHT COVER  |

| SERVICE TYPE      |  |
|-------------------|--|
| CATV/DATA         |  |
| ELECTRICITY (HV)  |  |
| ELECTRICITY (LV)  |  |
| FUEL              |  |
| GAS               |  |
| OVERHEAD ELECTRIC |  |
| OVERHEAD TELECOM  |  |
| CHEMICAL SEWER    |  |
| FOUL SEWER        |  |
| SURFACE SEWER     |  |
| TELECOM           |  |
| UNKNOWN SERVICE   |  |
| WATER             |  |

## CAUTIONARY NOTES

- Electromagnetic techniques have been used in the location of underground services, the results are not infallible and trial excavations must be carried out in order to confirm identification, position and in particular depth of the service, where these are critical.
- Ground Penetrating Radar (GPR) techniques have been used in the location of non metallic services (including fibre optic) wherever record information or surface scanning indicates the existence of a particular service. The interpretation of these results is not infallible and success will depend on a number of factors including soil type, ground water levels and surface conditions, hence trial excavations must be carried out in order to confirm identification, position and in particular depth of the service, where these are critical.
- Depths derived via electromagnetic detection are usually taken to the centre of the conductor (cable, metallic pipe) and those derived via Ground Penetrating Radar are usually to the top of the service.
- Where cable routes cannot be individually selected for tracing, any one trace could be a single cable or a cluster of cables.
- The locations of 'pot-ended' cables are often difficult to detect and although we will make all reasonable efforts to locate or transpire this information from records, we cannot guarantee that 'pot-ended' cables do not exist on this site.
- Drainage information has been obtained without man entry into the chamber and MK Surveys presume that sewers are straight between chambers.
- Pipe / Duct sizes are shown from visual inspection or taken from record information. Pipe sizes are recorded in millimetres and depths in metres.
- Water and Gas services to individual properties are often of a size that cannot be detected using Electromagnetic or GPR investigation, whenever possible the route will be added from surface evidence (pipe risers, valves, etc), but this should be viewed as a guide only.
- MK Surveys cannot confirm when services are redundant and unless there is surface evidence of a redundant service, cannot guarantee being able to locate all redundant services.
- Wherever possible the results of our investigations will be cross referenced with record information and where there is further information available and this cannot be detected on site, the information will be added to the drawing and indicated as such (R). However it should be noted that the completeness and accuracy of the records cannot be guaranteed.
- The utility information has been compiled from non-intrusive survey techniques; it always remains possible that there are additional services within the survey boundary that we have not been able to detect. We recommend that care is taken on site and that all service records are used in conjunction with this survey.
- The responsibility for avoiding damage to assets and services on site shall be that of the persons proposing to excavate within the surveyed area, who shall be liable to the asset owner and any third party who may be affected in any way for any loss or damage.

ALWAYS EXERCISE CAUTION WHEN EXCAVATING.



- Notes:**
- GRID AND LEVELS BASED UPON TOPOGRAPHICAL SURVEY PRODUCED BY MIDLAND SURVEYS LTD DRAWING No. 5905/1. SUPPLIED BY CLIENT.
  - MK SURVEYS HAVE UPDATED TOPOGRAPHICAL SURVEY IN THE AREA OF THE PLAY SCHOOL.
  - UTILITY AND SERVICE INFORMATION ADDED TO TOPOGRAPHICAL SURVEY PRODUCED BY MIDLAND SURVEYS LTD. DRAWING No. 5905/1. DATE JAN 2003. NO SITE VERIFICATION CARRIED OUT BY MK SURVEYS UNLESS SPECIFIC TO UTILITIES.
  - DRAINAGE INFORMATION HAS BEEN DETERMINED WITHOUT MAN ENTRY INTO CHAMBERS AND WHILST EVERY EFFORT HAS BEEN MADE TO CORRECTLY IDENTIFY THIS INFORMATION, IT SHOULD ALWAYS BE CHECKED IN AREAS THAT ARE CRITICAL TO THE FUTURE PROPOSAL.
  - ALL SEWERS ARE PRESUMED TO BE STRAIGHT BETWEEN CHAMBERS.

| Coordinate Table |             |           |          |
|------------------|-------------|-----------|----------|
| Station          | Description | Easting   | Northing |
| S1               | HHH Nail    | 10000.414 | 4946.715 |
| S2               | HHH Nail    | 10023.777 | 4920.905 |
| S3               | HHH Nail    | 9968.771  | 4996.961 |
| S4               | HHH Nail    | 10051.920 | 4965.897 |
| S5               | HHH Nail    | 10053.972 | 4956.227 |
| ST07             | Road Nail   | 9998.506  | 4921.403 |
|                  |             |           | 44.330   |

## GREYFRIARS CHURCH, FRIAR STREET, READING EXTERNAL UNDERGROUND SERVICES SURVEY REPORT

Date: 11th December 2012  
Job No: 17869

**General**  
Record Information was obtained from Openreach (telecom), Scottish and Southern Energy (electric), Scotia (Gas), Thames Water (water mains/sewers) and Virgin Media (CATV). Additional record information was requested from Linesearch however no apparatus was affected.

**Abbreviations Key**  
RD - Radiodetection. The RD8000 is an electromagnetic detector, which can transmit a signal onto a metallic service, and locate it from the surface.  
GPR - Ground Penetrating Radar. Used to scan the variations in ground signature from the surface by radar. Success is dependent on favourable ground conditions.  
HV - High Voltage. Any electricity cables 11kV and above.  
LV - Low Voltage. Any electricity cables below 11kV.

**Drainage**  
Drainage was lifted with pipe sizes and invert levels recorded. Wherever possible the chamber sizes have been recorded and positioned on the drawing. All connections from gullies, external rainwater pipes and external soil stacks have been proven wherever possible into manholes and sewer runs. We were unable to CCTV survey manholes 1501 and 1551 as they were too deep and heavily silted at time of survey. Record information has been added to the drawing where necessary. The outfall for manhole 11 could not be proven as the 1000 VC pipe was heavily blocked at time of survey.

**Water**  
Water pipes are plastic/metallic and have therefore been located using both GPR/RD methods with depths recorded to the pipe. Due to the small size of the pipes the location and the depth can easily be misinterpreted, and therefore trial excavations are recommended to confirm these locations. The Thames water main (west) has been re-diverted however the old main is still present (assumed redundant). We were unable to locate the incoming supply for the Greyfriars Church. Verbal information suggests it is supplied from the memorial building. The incoming supply for the Play School is supplied from Friar street.

**Gas**  
Gas pipes are plastic and have therefore been located using GPR methods with radar-derived depths recorded to the top of the pipe. Due to the small size of the pipes the location and the depth can easily be misinterpreted, and therefore trial excavations are recommended to confirm these locations.

**Electricity**  
Electricity cables on site have been traced with electronically derived depths recorded. There was no access to the local SSE sub stations therefore the HV routes were located using the power sweep function on the RD receiver. This method of location only allows for an average depth and position recording, therefore in areas where PD is indicated trial excavations are recommended to confirm position, depth and number of cables in any one sweep.

**Telecom**  
All telecom ducts have been traced with depths recorded. Due to laws protecting British Telecom apparatus all ducts have been located using remote detection techniques only and compared with record information. Chamber sizes have been recorded using GPR techniques wherever possible. For further information regarding BT apparatus please contact Openreach directly.

**CATV**  
All CATV covers have been lifted with ducts traced between. Electronically derived depths have been recorded along the traced routes. The number of ducts along any one trace has been recorded, and indicated adjacent to the draw pit chambers. Please note that empty ducts cannot always be traced and are therefore assumed or added to the drawing from the record information wherever necessary.

SEE CAUTIONARY NOTES WITHIN THE UTILITY KEY

| Revision | Description                                                              | Date       |
|----------|--------------------------------------------------------------------------|------------|
| R1       | Depth of basement light added to north facing wall of Greyfriars Church. | 15/01/2013 |

**40 years old in 2012**  
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## Greyfriars Church

## Greyfriars Church Friar Street Reading

## CCTV and Utility Survey/Topographical Survey Update

| Scale          | Sheet Size | Sheet Number | Date          |
|----------------|------------|--------------|---------------|
| 1:200          | A1         | 1            | December 2012 |
| Project Number | Rev        | Surveyed By  | Approved By   |
| 17869          | -          | OF/MR/JAG    | GL / JS       |