



		SAS Level 1 Low Accuracy	SAS Level 2 Mid to Low Accuracy	SAS Level 3 Medium Accuracy	SAS Level 4 Medium to High Accuracy	SAS Level 5 High Accuracy
Paragraph	Description	Level 1 surveys only require the use of a GPS allowing the use of long base lines (5-10kms). The long base lines will alter the accuracy of the placed points.	Level 2 surveys require the use of a GPS with shorter base lines (2-5 km's). The shorter base lines increase accuracies of the placed points. Total station only being used to set out points where the GPS loses fix.	Level 3 surveys require the use of a GPS with shorter base lines (0-2 km's). The shorter base lines increase the accuracies of the placed points. Total station only being used to set out points where the GPS loses fix.	Level 4 surveys require the use of a GPS to establish the horizontal position of the placed points by using a double polar from two survey control points (short GPS base lines 0-2 km's). All placed points must either be levelled by means of a one way levelling run or by using total station heighting.	Level 5 surveys require the use of a Total Station to establish the horizontal position of the placed points by using double polars from two survey control points. All placed points must be levelled by using at least a digital level with a double levelling run.
1	Survey Control - Benchmarks or Trig Beacons (SC)	Ensure there is at least 1 survey control point on site	Ensure there is at least 2 survey control points on site	Ensure there is at least 2 survey control points on site	Ensure there is at least 3 survey control points on site	Ensure there is at least 3 survey control point or a target reference network on site
2	Placed Points (Horizontal) (estimation)	Relative to SC < 0.20m Relative to Each Other < 0.10m	Relative to SC < 0.10m Relative to Each Other < 0.05m	Relative to SC < 0.06m Relative to Each Other < 0.03m	Relative to SC < 0.04m Relative to Each Other < 0.02m	Relative to SC < 0.02m Relative to Each Other < 0.005m
3	Placed Points (Height) (estimation)	Relative to SC < 0.50m Relative to Each Other < 0.20m	Relative to SC < 0.20m Relative to Each Other < 0.08m	Relative to SC < 0.10m Relative to Each Other < 0.05m	Relative to SC < 0.05m Relative to Each Other < 0.03m	Relative to SC < 0.02m Relative to Each Other < 0.005m
4	Setting out Applications	Approximate site positions	Farm boundaries, rural water pipeline routes, embankment positions for bulk earthworks	Urban/farm boundaries (all cadastral work), urban/rural pipeline routes, general setting out	Road setting out, building setting out	Pre-cast structural setting out, column setting out, retaining wall positions
5	Suggested Outputs	Survey report, control list and comparison spreadsheet	Survey report, control list and comparison spreadsheet	Survey report, control list and comparison spreadsheet	Survey report, control list and comparison spreadsheet	Survey report, control list and comparison spreadsheet
6	Equipment and methods	GPS Base and Rover (strong radio)	GPS Base and Rover and a Total Station (5")	GPS Base and Rover and Total Station (3-5")	GPS Base and Rover, Total Station (3") and a Level	Total Station (0.5-3"), Scanner and a Digital/Precise Level
7	Minimum Qualifications of surveyor	Registered Technician (Diploma) under the supervision of a registered Technologist or Professional Surveyor	Registered Technician (Diploma) under the supervision of a registered Technologist or Professional Surveyor (cadastral work can only be done under the supervision of a registered Professional Land Surveyor).	Registered Technician (Diploma) under the supervision of a registered Technologist or Professional Surveyor (cadastral work can only be done under the supervision of a registered Professional Land Surveyor).	Registered Technician (Diploma) with at least 2 years experience under the supervision of a registered Technologist or Professional Surveyor (cadastral work can only be done under the supervision of a registered Professional Land Surveyor).	Professional Surveyor with prior experience in the field required or under the guidance of someone that has at least 2 years experience.

Definitions:

Relative to Survey Control (SC) : Relative to SC accuracy refers to the difference between the placed point and that of the position of the SC from which it was placed.

Relative to each other: Relative to each other accuracy refers to the difference between points that have been placed in close proximity to each other.

Comparison spreadsheet: Comparison spreadsheet refers to a spreadsheet in which the design co-ordinates are being compared to the placed co-ordinates.