

Bare-Earth LiDAR Acceptance Criteria

H	Tested Characteristic All Scales	Measure of Acceptability
H.1.	Point spacing	Max. 11 feet on all raw random collected points,
H.2.	Vertical accuracy	Lidar mass points equivalent to 2 ft contours: $RMSE_z = 18.5 \text{ cm (0.607 ft)}$ $Accuracy_z = 36.3 \text{ cm (1.190 ft)}$ at 95% confidence level
H.3.	Satisfy FEMA testing requirements in land cover categories: <ul style="list-style-type: none"> • Open terrain (sand, rock, dirt) • Tall weeds and crops • Scrub and bushes • Forested • Build-up areas 	<ul style="list-style-type: none"> • Fundamental Vertical Accuracy must equal 1.190 ft or better at the 95% confidence level, based on $RMSE_z \times 1.9600$ for checkpoints in open terrain only • Supplemental Vertical Accuracy in each land cover category should equal 1.190 ft at the 95% confidence level based on the 95th percentile errors for each category. This is desirable but not mandatory. • Consolidated Vertical Accuracy in all land cover categories combined must equal 1.190 ft at the 95% confidence level based on the 95th percentile errors for all categories combined.
H.4.	Qualitative criteria	Post-processed to remove structures and vegetation with minimum residual artifacts (this is somewhat subjective)
H.5.	QC Checkpoints	Minimum of 20 QC points for each of the five land cover categories, i.e., 100 total minimum
H.6.	QC checkpoint survey accuracy and description of survey procedure used	Surveyed to NGS-58 procedures for 5-cm. Checkpoints located per guidance specified by FEMA and ASPRS.
H.7.	Data type and datum	NAVD88 orthometric heights
H.8.	Coordinate System	California Coordinate System of 1983, Zone 5,
H.9.	Epoch	Epoch 2004
H.10.	File format	ArcGIS raster, Microstation dgn V8
H.11.	File organization	Files written one per ortho tile delivered
H.12.	File name	Conforms to required tile naming convention

2 foot Contours QA Acceptance Criteria

I	Tested Characteristic	Measure of Acceptability
I.1.	Media: DVD 2.0, 4.7 GB single sided (4.3 GB usable), snap server with 2 TB	Media is readable, all files accessible, no files corrupted
I.2.	File organization	Files written one per ortho tile delivered
I.3.	File name	Conforms to required convention
I.4.	File size	2640' x 2640'
I.5.	Format	ESRI ArcGIS shapefile
I.6.	Format	ACAD 2000
I.7.	Georeferencing	Locates in proper tile grid cell
I.8.	Appearance / smoothing	Contour lines should be "smooth enough" to avoid confusion. Contours should not cross other contours, touch them, or be within 0.003" of adjoining contours.
I.9	Continuity	Continuous, no voids or gaps
I.10	Roads	Edge of pavement breaklines should be used to generate road surface polygons and remove LiDAR points on paved roads so contours cross generally straight across roads. Contours can curve slightly when crossing roads but should not reverse directions because of LiDAR "noise."
I.11	Bridges and overpasses	"Cut" bridges and overpasses to depict narrowly-spaced contours near abutments
I.12	Drainage	Breaklines should define center of single-line drains; shorelines of double-line drains with LiDAR points removed within so contours cross generally straight across rivers. Lakes/reservoirs should be flat.
I.13	Buildings	Contours should represent topographic surface as though buildings are not there.
I.14	Temporary Conditions	Depression contours should not be captured for temporary holes caused by ongoing construction. Similarly, contours should not be captured for temporary piles of sand, construction materials, coal at electrical power plants, etc. Depression contours are appropriate for permanent depressions such as quarries.
I.15	Accuracy	Meet ASPRS accuracy for 2 foot contours for which RMSEz = 0.6 ft (18.5 cm). Testing will be based on LiDAR data used for contours.

4 foot Contours QA Acceptance Criteria

J	Tested Characteristic All Scales	Measure of Acceptability
J.1.	Media: DVD 2.0, 4.7 GB single sided (4.3 GB usable), snap server with 2 TB	Media is readable, all files accessible, no files corrupted
J.2.	File organization	Files written one per ortho tile delivered
J.3	Tile name	Conforms to required convention
J.4.	Tile size	5280' x 5280'
J.5.	Format	ESRI ArcGIS shapefile
J.6.	Format	ACAD 2000 .dwg
J.7.	Georeferencing	Locates in proper tile grid cell
J.8.	Appearance / smoothing	Contour lines should be “smooth enough” to avoid confusion. Contours should not cross other contours, touch them, or be within 0.003” of adjoining contours.
J.9	Continuity	Continuous, no voids or gaps
J.10	Roads	Edge of pavement breaklines should be used to generate road surface polygons and remove LiDAR points on paved roads so contours cross generally straight across roads. Contours can curve slightly when crossing roads but should not reverse directions because of LiDAR “noise.”
J.11	Bridges and overpasses	“Cut” bridges and overpasses to depict narrowly-spaced contours near abutments
J.12	Drainage	Breaklines should define center of single-line drains; shorelines of double-line drains with LiDAR points removed within so contours cross generally straight across rivers. Lakes/reservoirs should be flat.
J.13	Buildings	Contours should represent topographic surface as though buildings are not there.
J.14	Temporary Conditions	Depression contours should not be captured for temporary holes caused by ongoing construction. Similarly, contours should not be captured for temporary piles of sand, construction materials, coal at electrical power plants, etc. Depression contours are appropriate for permanent depressions such as quarries.
J.15	Accuracy	Meet ASPRS accuracy for 2 foot contours for which $RMSE_z = 0.6$ ft (18.5 cm). Testing will be based on LiDAR data used for contours.