



NLCTA-Note #8.1

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Subject: Magnet Design Guidelines

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Guidelines for the design of solenoids, chicane bend magnets and spectrometer quadrupole magnets are as follows:

### Solenoids

Type:	solenoid
Quantity:	21
Field strength at center:	$\approx 750$ G
Inner diameter:	$\geq 16$ in
Outer diameter:	$\approx 23$ in
Axial length:	$\approx 3$ in
Water cooled:	yes

### Chicane Bends

Type:	dipole
Quantity:	5
Integrated field strength:	$\geq 1.2$ kG-m
Vertical gap:	$\geq 1$ in
Horizontal gap:	$\geq 4$ in
Total length w/coils:	$\leq 13$ in
Water cooled:	yes

### Spectrometer Quadrupoles

Type:	quadrupole
Quantity:	5
Integrated field gradient:	$\geq 70$ kG
Bore dimension:	$\geq 2$ in
Total length w/coils:	$\leq 13$ in
Water cooled:	yes