

Performance Rubric for Cell Tower Proposal

Category: Final Proposal	Does Not Meet Standard (<7 points)	Needs Improvement (7-8 points)	Meets Standard (8-9 points)	Exemplary Model (9-10 pts)
Explanation of Engineering Design Process	Engineering design process is not outlined.	Engineering design process that was used is outlined, but missing critical features.	Engineering design process was used in its entirety and is outlined, but missing details within the process.	Engineering design process was used in its entirety and is outlined. Details within the process are clear to the reader.
Testing (Written Explanation of Testing)	Prototype was not tested <i>or</i> it is unclear from the explanation that trials were run to improve the prototype.	It is clear from the explanation that a trial was run to improve prototype.	It is clear from the explanation that two trials were run to improve prototype.	It is clear from the explanation that three trials were run to improve prototype.
Redesign (Written Explanation of Redesign)	Prototype was not modified <i>OR</i> there was no written explanation for changes in prototypes.	Modifications of prototypes were not clearly connected to outcomes from testing.	Some , but not all, modifications were clearly connected to data from previous testing.	All modifications were clearly connected to data from testing.
Budget	Evidence of managing budget is missing.	Evidence of managing budget is disorganized <i>and/or</i> the budget was exceeded.	Evidence of managing budget is disorganized but within constraints.	Evidence of managing budget is organized and within constraints, accurately including the cost of materials, people, and specialized materials
Professional Language: <i>Suggestions: specific engineering practices; live, dead, and environmental loads, compression, tension, torsion, arch, truss, etc.</i>	Little to no accurate use of civil engineering terms.	Three civil engineering terms were used in an accurate way.	Four or more civil engineering terms were used in an accurate way.	Five or more civil engineering terms were used in an accurate way.

Mechanics	Poor use of mechanics impedes the fluency of the proposal.	Proposal is disorganized <i>and/or</i> mechanical errors are present (capitalization, punctuation, etc.).	Proposal is organized, but mechanical errors are present.	Proposal is organized and appropriate for intended audience. There are no mechanical errors in the proposal.
Grammar	Poor grammar impedes the fluency of the proposal.	There are many (4+) grammar errors throughout the proposal.	There are some (1-3) grammar errors throughout the proposal.	There are no grammar errors in the proposal.

Category: Engineers Notebook	Does Not Meet Standard (<7 points)	Needs Improvement (7-8 points)	Meets Standard (8-9 points)	Exemplary Model (9-10 pts)
Design Process: Planning Research Testing Re-design	Engineering design process is not followed.	Incomplete documentation AND/OR critical features of design process are missing	Engineering design process is followed, but disorganization of notes prevents reader from easily following your team's approach.	Documentation of a reliable engineering design process is organized and easy for another reader to understand.
Trial details: Data for three trials (prototypes)- Height Time Labeled Sketches	Data from prototypes is not collected or is not evident.	Data from prototypes is collected, but disorganization and/or many missing details prevent the reader from understanding how the data was used in subsequent trials.	Data from prototypes is collected and organized. However, missing details cause some uncertainty in understanding how the data was used in subsequent trials.	Data collected for three prototypes was collected and organized to include height, dead load, live load, time live load is upheld, sketches of structure pre-and post-trial

Trial analysis	Post trial analysis is not included.	Post trial analysis of each prototype includes force(s) and sequence of events during trial tests.	Post trial analysis of each prototype includes force(s), sequence of events during trial tests, with patterns throughout trials are identified.	Post trial analysis of each prototype includes force(s), sequence of events during trial tests, with patterns throughout trials identified and supported with data.
Mathematical / Geometric Principles <i>Arch</i> <i>Truss</i> <i>Angle (measured and labeled)</i> <i>Beam</i> <i>Support</i>	No terms used accurately	Few terms used accurately	Missing some terms/accuracy	In pre trial sketches and analysis, accurate application of mathematical terminology is used.
Design Principles <i>Dead load</i> <i>Live load</i> <i>Settlement load</i> <i>Thermal load</i> <i>Earthquake load</i> <i>Wind load</i> <i>Dynamic load</i> <i>Compression</i> <i>Tension</i> <i>Bending</i> <i>Shear</i> <i>Torsion</i>	No terms used accurately	Few terms used accurately	Missing some terms/accuracy	In design process, accurate application of design terminology is used.