BOE Technology Committee May 3, 2016

Attendance: Debbie Leidlein, BOE and Committee Chair
Keith Alexander, BOE
Carmella Amodeo, Director of Technology

Called to order: 4:45

Public Participation: None

Communications/Announcements:

Debbie shared the list of equipment for SHS that she had received from Bob. Carm said she had gone over a list and made some additions that were missed initially.

The minutes of the March 23, 2016 were unanimously approved.

Carm contacted NHS regarding the BYOD agreement. Lorrie and Liza Z both stated the the agreement was good, that they need to enforce it at their end.

Discussion on the 2016-2017 budget, Carm confirmed that there was no redundancy in equipment for SHS. We are not sure of the final amount of the Technology budget until the final adjustments have been made by the BOE to account for the $300,000 that was cut.

Carmella received a quote for a "booster" for the Reed School to improve cellular coverage. (see attached) She is going to contact the company and get a quote for the lower level only. The install that was done at the Municipal Center did improve cellular service.

Discussion on leasing equipment was postponed.

The committee reviewed the Manchester BOE policy on funding guidelines for the Technology budget. Carmella is going to draft a policy using this as a guideline which she will share with the BOE Tech Committee. This will then be be passed on to the Policy Committee for review.

Next meeting is scheduled for Thursday June 9th at 4:30 in Meeting Room 1 at the Municipal Center.

Meeting adjourned at 5:25.

Respectfully submitted,

Carlen Gaines

PowerfulSignal
Stronger Signal Solutions

Project Estimate for Newtown Schools
By Jim Oaks

DATE: March 31, 2016

Cellular Distributed Antenna System
Reed Middle School

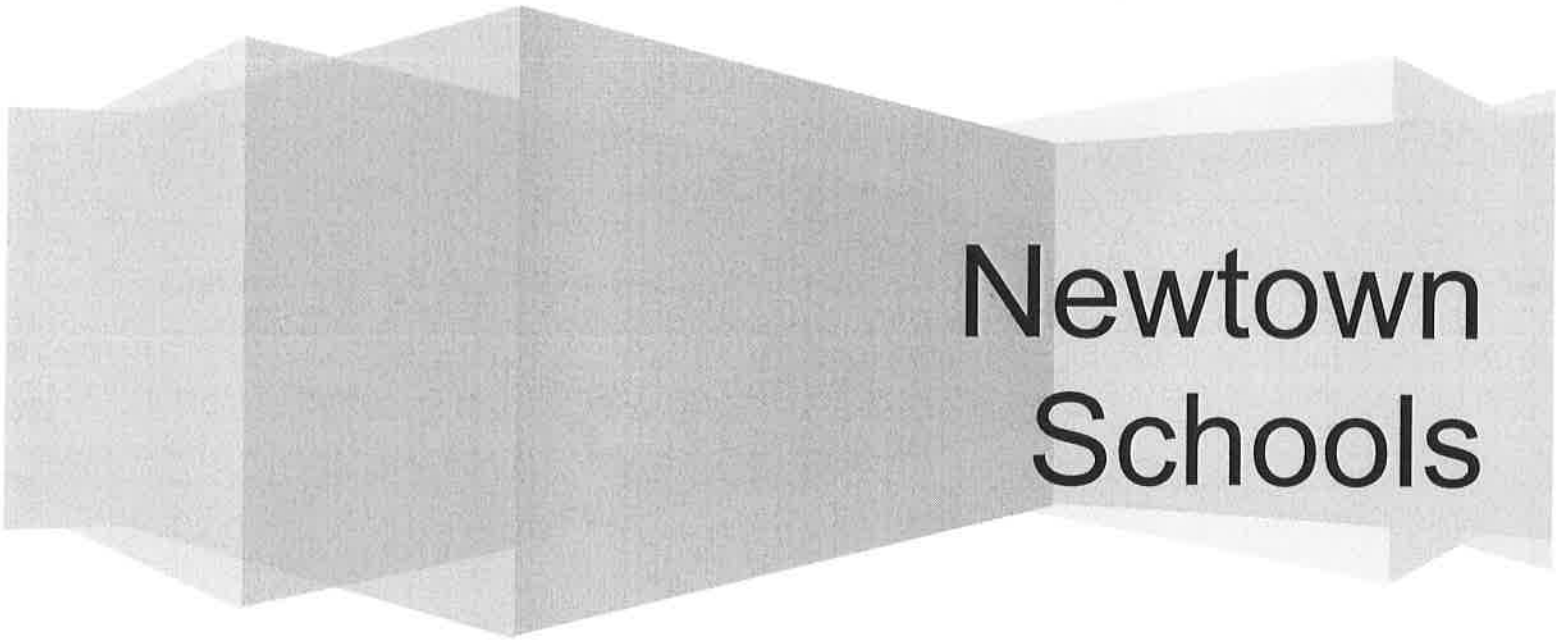

Table of Contents

1 Project Objective

The objective of this project is to provide usable cellular and data signal at the Newtown Schools Reed Building.

Useable cell signal is defined as "able to make, receive, and complete cell phone calls without dropping the call". Cell signal strength (bars) will vary within the coverage areas depending upon location in reference to the interior broadcast antennas.

Powerful Signal is providing a project estimate for a complete cellular repeater solution that includes all associated coax cable, antennas and other components that are necessary for a complete functioning system. One of the main objectives of this price estimate is to provide accurate budgetary information that can be used to determine the feasibility of the project.

2 Project Process

2.1 Budgetary Estimate

Using information provided by the customer, Powerful Signal creates the Budgetary Estimate for the customer to use in their budget and approval process. Powerful Signal's estimates are usually very accurate and under normal conditions the project should not exceed the estimate amount. Please note that installation may or may not be part of this estimate depending on the customer's needs. There may be some components required for installation that are not included in the Budgetary Estimate.

2.2 Budgetary Estimate Approval/Deposit

Once the project is approved and awarded to Powerful Signal and the installation company, the last page of this document will need to be signed and sent back to Powerful Signal, the deposit amount will be sent to the installation company who will be providing a turn-key solution for the project. The payment of the deposit will start the final design process.

2.3 Project Design

Currently, the project is in the budgetary phase to determine if this is a feasible project. To move the project into final design with an itemized quote, will require a deposit. Once the deposit has been paid, Powerful signal will start the design process for the system. Additional information may need to be gathered about the building in order to create an accurate design. During the design phase, red line drawings will be created in order to map out the system with the system installation team in order to determine pathways for coax cables and mounting points for the antennas. Once all redlines have been verified, Powerful Signal will require a sign off from the red line drawings, which will include floor overlay charts and system connection charts that will be created and provided to the installer to follow during the installation.

2.4 Invoice for Products and Shipment

The final invoice will be created once the red line documents are signed off. The final invoice can be paid via corporate check or by an ACH payment. The product will ship upon final payment.

3 System Components Overview

Powerful Signal has many years of experience quoting and designing cellular repeater distributed antenna systems for commercial environments. We maintain close business relationships with many of the best equipment manufacturers and understand when and how to use the equipment in the most cost effective manner. Powerful Signal stocks all components used in our systems. We have excellent turn-around time and can get your system quoted, designed, and shipped in days not months.

3.1 Amplifier Equipment

The amplifier equipment that will be used is Carrier Agnostic equipment. All amplification equipment used meets all current FCC standards and is FCC certified. The Carrier Agnostic equipment will cover all major carriers for voice calls, 3G data and 4G LTE data. Note: The current equipment does not cover the Sprint Spark network.

3.2 Coax Cables

The coax that will be implemented into the system will meet all requirements for system functionality and use.

3.3 Antennas

Antennas used in the system will pass all frequencies that are used by the different cellular carriers in the proposed system.

4 Project Assumptions Overview

Following are the assumptions used in the project estimate process. **Modification to these assumptions may change the price estimate.**

4.1 Building Size

The size and architecture of the estimated system are based upon the information below

- Building floors: Two
- Square footage: approximately 135,000

4.2 Cell Signal Information

It is assumed that there is a minimum of -80dB signal strength at the donor antenna on the roof for all major cellular providers.

4.3 Equipment Location

The following are the assumptions for the locations where the equipment can be mounted.

- There is a suitable place to mount the donor antenna that is clear from any obstructions
- There is walk up roof access
- Amplification equipment will be mounted in data closets and have access to 110v power. An uninterrupted power supply (UPS) is recommended for the equipment, but is not part of this estimate and typically is sourced by the customer.
- Internal antennas will be mounted in drop ceilings and have a minimum 30' separation from any wireless access point (WAP)
- The installation can take place during normal business hours with ability to stay late if necessary
- Ability to freely move through the site/full access

4.4 Coax Runs

The following are the assumptions for the coax cable runs in the building

- There is a direct coax pathway from the rooftop antenna into the building data closets where amplification equipment will be mounted
- Coax cable can be run from floor to floor via the data closets with no floor drilling required
- Coax cable can be run above the drop ceilings to split points and antenna locations
- There will be no concrete drilling to pass coax through the walls or need to fasten the coax to any concrete wall

5 Estimate Summary

This estimate is for a Carrier Agnostic solution for the Newtown Schools, Reed Building . The Carrier Agnostic solution will help create usable signal inside of the building for voice, 3G data, and 4G LTE data. This type of system is designed to provide usable cellular and data signal through the specified areas as long as the signal strength on the roof is a minimum of -80dB for all cellular providers and the assumptions for the equipment placement and installation are correct.

Reed Building System
Below is a list of items included in the system; however this is not an inclusive list.

Custom Design and Installation of 4G Carrier Agnostic Cellular Solution	
Products and services provided: Complete system design Passive components including: ▪ Coaxial cabling and associated connectors ▪ Splitters and taps ▪ External and internal antennas ▪ Mounting hardware Installation of all equipment Configuration of equipment System testing after installation Travel and lodging for installation team Support for the install team provided by Powerful Signal Lifetime technical support provided by Powerful Signal *System Capabilities:* Coverage for Verizon, AT&T, Sprint, T-Mobile and other regional carriers in your area	
Estimated project total	$36,000.00

A deposit of $18,000.00 would be required to start the project.
Estimate does not include any applicable local taxes or shipment of product.

6 Acceptance

Customer Signature _____ Date _____

Print Name below _____ Title _____

Upon acceptance, customer agrees to pay Central Electric, LLC an $18,000.00 deposit to begin the project. The deposit amount will be deducted from the final invoice charge to the customer for system parts, components and installation. Total amount charged to customer for parts, components and installation should not exceed $36,000.00 as long as all assumptions on page 4 of this document are correct, and no additional install or coverage changes to the building are made.