



COLUMBIA COUNTY BOARD OF COUNTY COMMISSIONERS AGENDA ITEM REQUEST FORM

The Board of County Commissioners meets the 1st and 3rd Thursday of each month at 5:30 p.m. in the Columbia County School Board Administrative Complex Auditorium, 372 West Duval Street, Lake City, Florida 32055. All agenda items are due in the Board's office one week prior to the meeting date.

Today's Date: 3/7/2017 Meeting Date: 3/16/2017

Name: Lawrence Wilson Department: Communications

Division Manager's Signature:

Ben Scott

1. Nature and purpose of agenda item:

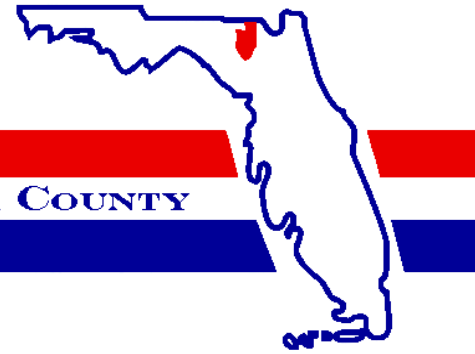
RFP 2016-R, Change Order (2) to reflect Circuit Upgrade, Tower Foundation and Soil Resistivity

2. Recommended Motion/Action:

There is no recommended motion or action.

3. Fiscal impact on current budget.

This item is currently budgeted. The account number to be charged is 302-2620-520.60-63



BOARD OF COUNTY COMMISSIONERS • COLUMBIA COUNTY

MEMORANDUM

DATE: March 2, 2017

To: Ben Scott, County Manager

From: Lawrence Wilson, Central Communications Director

Ref: RFP 2016-R, Change Order (#2) to reflect Circuit Upgrade, Tower Foundation Soil Resistivity

Below you will find a change order for the tower foundation, soil resistivity and additional hardware that was found warranted to assuage future growth cost savings.

During the RFP, Staff proposed a 100 amp circuit and normal soil for two of the three tower sites. With the addition of the second air conditioning unit to the communication buildings, it was found that power consumption was dangerously close to supplied 100 amp service. To lessen the possibility of network brownout, Staff requests to have the supplied service changed to a 200 amp circuit. Changes will also include a generator upsize from 30KW with 80 gallon to 35KW 205 gallon tank, increasing the runtime from 26 hours at optimal loading to 42+ hours at full load. The additional 100 amp service is mutually beneficial for the county because it will exceed the electrical need and any possible future growth.

Due to recent vandalism and news reports of individuals climbing communications site towers, Staff request to replace the fencing at Lulu to eight feet and add concertina wire. RFP states to add reuse existing fence and add to it lengthwise. Increasing the height of the fence and adding concertina wire like the other site compounds will give an added benefit to deterring vandalism at the site. Clay Electric cannot add a separate meter can to the current feed supplying the fire station. The only solution is to trench in a separate power line (87feet) to the communication building. This was not accounted for during RFP due to prior conversation with Clay Electric.

Tower foundations per RFP was bid for "normal soil conditions." The geological studies for the EOC and Deep Creek sites returned less than favorable soil results, resulting in a design change from the RFP mat and pier to drilled pier. Soil resistivity around the tower sites is sandy and has less resistance than ideal. Sandy soil creates a challenge for tower site grounding. The goal is to make a tower invisible to lightning. To do this, the resistance needs to be very low; RFP states 5 Ohms or less. All four sites test in triple digits ranging from 245 to in excess of 400 Ohms. Contractor is proposing to add additional radials and TerraFill to the ground ring to lower the resistance.

Thank you,

~~Original Signed~~

Authorized Representative Name / Title

Lawrence Wilson, Director

Department of Central Communications

March 2, 2017

Date



Omnicom Consulting Group, Inc.
2927 Habersham Drive
Tallahassee, FL 32309
Tel: 850-792-4705
Fax: 850-894-0950

March 6, 2017

Mr. Lawrence Wilson
Central Communications
236 NW Lake City Avenue
Lake City, FL 32055

RE: Motorola Change Order Number 2

Dear Mr. Wilson,

OCG has reviewed Motorola's Change Order Number 2 request and recommends the County approves the change order request as written. Below are the four (4) line items requested by Motorola take directly from their request with OCG's comments on each item.

1. Modify the design of the four Thermo Bond Buildings to upgrade the electrical service from 100 amps to 200 amps, change to 35KW Cummins diesel generators, and 205 gallon standard subbase fuel tanks with standard exterior enclosures.

This change will add additional electrical capacity to the normal and emergency communication site electrical systems while also upgrading the quality of generator to be installed. Based on the proposed price and the advantages they bring to the County it is OCG's opinion that this change be approved as written.

2. At the Lulu site, additional trenching and material to install 87' of underground 2 ½" conduit for electrical feed and additional 8' high fencing on the north side of the site compound to replace the existing 6' fencing.

The RFP document was written to assume all electrical connection points would be within 25' of the new communications shelter. After further discussions with Clay Electric it was determined that the electrical connection point for the new communications shelter at the Lulu site will be 87' away. The RFP also was written so that the existing fencing at Lulu would remain and the compound would be expanded to accommodate the new equipment and the new fencing would match the existing (6' with barbed wire). After further consideration by the County it was decided that due to ongoing vandalism activities at the Lulu communications site to upgrade the fence to match the other new sites which is 8' fencing with razor wire. Based on these RFP assumptions and the County's concern for additional security at this location it is OCG's opinion that this change be approved as written.

3. Following the geotech analysis it was determined that the local soil conditions at the EOC and Deep Creek sites were not "normal soil" as defined in the RFP. Because of this the tower foundations designs at both sites have to be changed from mat and pier designs to drilled piers. The foundation for each leg (3) at the EOC will be 4' x 48' drilled pier. The foundation for the tower leg (3) at Deep Creek will be 5' x 35' drilled pier.

The RFP document was written such that at the EOC and Deep Creek sites that the foundation designs for the new towers be based upon "normal" soil conditions. However, OCG, did request during contract negotiations that Motorola provide pricing for drilled pier foundations as an option in the event that the geotech report once completed recommended this type foundation. Once the geotech survey and report were completed this was indeed the recommendation. The requested change in price by Motorola came in below the budgetary pricing given during contract negotiations. Based on these RFP assumptions and Motorola's ability to keep the change request within the original budget it is OCG's opinion that this change be approved as written.

4. Following the soil resistivity testing at all the sites, it was determined that enhancements to the grounding design are necessary to lower site resistance at the Deep Creek, EOC and Columbia County Sherriff's Office sites. The enhancements to the grounding will be accomplished by adding TerraFill Grounding Backfill. The TerraFill Grounding Backfill will be spread in all ground system trenches following installation of the ground system conductors.

Multiple soil resistivity tests have been completed at the Deep Creek and EOC communication sites all of which have been different. Suffice it to say there is some uncertainty on how the new ground system at each of these sites will perform. Motorola (and there engineering firm AMEC) had originally proposed the TerraFill upgrade at the Deep Creek, EOC and CCSO sites for a costs of roughly \$11,000.

In OCG's review of the preliminary construction drawings it was noted that Motorola had not included the required "fence" ground ring. Given the tight spaces of the fenced compounds the anticipated improvement to the overall site grounding system would be minimal if the fence ground ring were installed as specified. Based on this it was decided that the TerraFill upgrade would provide greater benefit to the County and that it would be completed at no additional costs to the County in lieu of the fence ground ring at each new site. Based on this it is OCG's opinion that this change be approved as written.

Respectfully,

A handwritten signature in blue ink, appearing to read 'Chris Monzingo', with a stylized flourish at the end.

Chris Monzingo, P.E., PMP
Omnicom Consulting Group, Inc.

Date:	February 27, 2017
Project Name:	Columbia County Site Development Project
Customer Name:	Columbia County Board Of County Commissioners
Customer Project Mgr:	Lawrence Wilson
Motorola Project Manager:	Bill Bloom

The purpose of this Change Order: *(describe the key reasons for this Change Order)*

Additional deliverables due to site design changes:

1. Modify the design of the four Thermo Bond Buildings to upgrade the electrical service from 100 amps to 200 amps, change to 35 KW Cummins diesel generators, and 205 gallon standard sub-base fuel tanks with standard exterior enclosures.
2. At the Lulu site, additional trenching and material to install 87' of underground 2 1/2" conduit for electrical feed and additional 8' high fencing on north side of site compound to replace existing 6' fencing.
3. Following the geotech analysis it was determined that the local soil conditions at the EOC and Deep Creek sites were not normal soil as defined in the RFP. Because of this the tower foundation designs at both sites have to be changed from mat and pier designs to drilled piers. The foundation for each tower leg (3) at the EOC will be a 4' x 48' drilled pier. The foundation for each tower leg (3) at Deep Creek will be a 5' x 35' drilled pier.
4. Following the soil resistivity testing at all the sites, it was determined that enhancements to the grounding design are necessary to lower site resistance at the Deep Creek, EOC and Columbia County Sherriff's Office sites. The enhancements to the grounding will be accomplished by adding TerraFill Grounding Backfill. The TerraFill Grounding Backfill will be spread in all ground system trenches following installation of the ground system conductors.

Motorola Contract No.	FL-12I108A	Contract Date:	12/15/2016
Customer Contract No.	2016-R		

In accordance with the terms and conditions of the Contract identified above between Motorola Solutions, Inc. and Columbia County Board of County Commissioners the following changes are approved:

1. Contract Price Adjustments

Original Contract Value:	\$1,277,887.99
Previous Change Order amounts for Change Order numbered ____1__ through ____1__	\$ 11,268.00
This Change Order:	\$ 73,759.00
New Contract Value:	\$1,362,914.99

**2. Completion Date Adjustments**

Original Completion Date:	10/31/2017
Current Completion Date prior to this Change Order:	10/31/2017
New Completion Date:	10/31/2017

3. Changes in Equipment *(additions, deletions or modifications)*

Thermo Bond buildings upgraded from 100 amps electrical service to 200 amps. Generators changed to 35 KW Cummins diesel with 205 gallon fuel tanks.

4. Changes in Services *(additions, deletions or modifications)*

All material and labor necessary to accomplish the site design changes described on page 1 of this change order.

5. Scheduled Changes *(additions, deletions or modifications)*

None

6. Pricing Changes *(additions, deletions or modifications)*

1. Building modifications \$5,055
2. Lulu site development \$1,710
3. Tower foundations \$66,994
4. TerraFill grounding enhancements and delete fence perimeter ground rings, \$0

7. Customer Responsibilities *(additions, deletions or modifications)*

None

8. Payment Schedule *(additions, deletions or modifications)*

Site Acceptance payment milestones will be modified to include these changes.

Unless amended above, all other terms and conditions of the Contract shall remain in full force. If there are any inconsistencies between the provisions of this Change Order and the provisions of the Contract, the provisions of this Change Order will prevail.

IN WITNESS WHEREOF the parties have executed this Change Order as of the last date signed below.

Motorola Solutions, Inc.

**Columbia County Board Of County
Commissioners**

By: Matt Breneman

Printed
Name: Matt Breneman

Title: Regional Sales Manager

Date: February 27, 2017

By: _____

Printed
Name: _____

Title: _____

Date: _____