

**CONTRACT CHANGE ORDER**

Change Requested by: Engineer

CCO: 74 Suppl. No. 0 Contract No. 04 - 0120F4 Road SF-80-13.2/13.9 FED. AID LOC.:

To: AMERICAN BRIDGE/FLUOR ENTERPRISES INC A JOINT VENTURE

You are directed to make the following changes from the plans and specifications or do the following described work not included in the plans and specifications for this contract. **NOTE: This change order is not effective until approved by the Engineer.**

Description of work to be done, estimate of quantities and prices to be paid. (Segregate between additional work at contract price, agreed price and force account.) Unless otherwise stated, rates for rental of equipment cover only such time as equipment is actually used and no allowance will be made for idle time. This last percentage shown is the net accumulated increase or decrease from the original quantity in the Engineer's Estimate.

**Adjustment of Compensation at Lump Sum:**

Modify strong motion detection system including, but not limited to, relocate sensor enclosures, reroute conduits and cable, and revise cable material and pull box connections.

Revise Special Provisions Section 10-3.18 "STRONG MOTION DETECTION SYSTEM," subsection "MATERIAL," subsection "Cables and Conductors," as shown on sheet 2 of this change order.

The following revised plan sheets detail the changes addressed in this change order: 271R3, 329R1, 330R1, 331R1, 332R1, 334R2, 334S1, 335R2, 336R1, 337R1, 338R1, 339R1, 340R1, 341R1, 342R1, 343R2, 344R2, 345R1, 346R1, 347R1, 348R1, 349R1, 350R1, 402R1 and 403R1 (of 1204) as shown on sheets 3 through 27 of this change order.

This change order resolves the costs associated with Contractor Request for Information (RFI) numbers 376, 402R0, 463 and 726R0 with respect to changes listed above.

For this work, the Contractor will receive a lump sum of \$55,604.00. This sum constitutes full and complete compensation for furnishing all labor, material, tools and incidentals including all markups by reason of this change.

Adjustment of Compensation at Lump Sum.....\$55,604.00

Estimated Cost: Increase  Decrease  \$55,604.00

By reason of this order the time of completion will be adjusted as follows: 0 Days

Submitted by  
Signature *Kannu Balan* Resident Engineer  
Kannu Balan, Senior T.E. Date 6-28-11

Approval Recommended by  
Signature *W. Shedd* Supervising Bridge Engineer  
Richard Morrow, Sup. B.E. Date 6-28-11

Engineer Approval by  
Signature *Peter Siegenthaler* Principal Transportation Engineer  
Peter Siegenthaler, Prin. T.E. Date 11 JULY 2011

We the undersigned contractor, have given careful consideration to the change proposed and agree, if this proposal is approved, that we will provide all equipment, furnish the materials, except as otherwise be noted above, and perform all services necessary for the work above specified, and will accept as full payment therefor the prices shown above.

NOTE: If you, the contractor, do not sign acceptance of this order, your attention is directed to the requirements of the specifications as to proceeding with the ordered work and filing a written protest within the time therein specified.

Contractor Acceptance by  
Signature *Brian A. Petersen* (Print name and title) Date 30 JUN 11  
BRIAN A. PETERSEN - PROJECT DIRECTOR

CONTRACT CHANGE ORDER NO. 74 SUPPL. NO. ---  
ROAD 04-SF-80-13.2, 13.9 SHEET 2 OF --- SHEETS  
FEDERAL NO.(S) \_\_\_\_\_ CONTRACT NO.: 04-0120F4

Special Provisions changes:

1. In the Special Provisions, Section 10-3.18, "STRONG MOTION DETECTION SYSTEM", the subparagraph "Cables and Conductors" under "MATERIAL" paragraph is revised as follows:

**Cables and Conductors**

- A. **Seismic Sensor Cable:** Seismic sensor cable, SSC, shall be four twisted pairs stranded tinned copper conductors, AWG No. 22 (7 x 30 strands), insulation 0.18 mm thick, individually shielded pairs with an aluminum polyester shield and AWG No. 22 stranded tinned copper drain wire for each pair, overall nominal outside diameter of 7.6 mm or less and outer jacket of 0.23 mm thick. Cable shall be instrument cable, NEC rated CLP2 plenum cable rated for 150°C. Cable shall be ~~similar to Belden plenum cable, Catalog No. 87778 except with only four pairs~~ **Consolidated Electronics Wire & Cable, product no. SX00-55226-1 or equal** and having a color code as specified below:

1st Pair	red, black
2nd Pair	white, brown
3rd Pair	blue, violet
4th Pair	yellow, orange

~~Seismic sensor cable shall be United Wire and Cable Co., Inc., Consolidated Wire and Cable, or equal.~~  
Cable spools shall be of sufficient length to allow cables to be installed without splices from the sensor enclosures to the recorder cabinets as shown on the plans.

- B. **Telephone Cable:** Telephone cable shall be waterproof filled-sheath, ISDN rated cable with four twisted pairs, individually shielded stranded conductor, minimum AWG No. 22 tinned copper, polyethylene insulated, with a foil aluminum-polyester shield, and chrome PVC jacket rated for 300 V. Cable spools shall be of sufficient length to allow the cables to be installed without splices from telephone service point to the seismic recorders.
- C. **Interconnect Cable:** Interconnect cable, IC, shall be EIA RS-485 applications cable, Plenum type, NEC rated CL2P for temperature of 150°C. Cable shall be ~~similar to Belden cable No. 9844 but plenum rated~~ **Consolidated Electronics Wire & Cable, product no. SX00-55226-2 or equal**. The cable shall have eight tinned-copper, insulated conductors (4 twisted pairs). Overall aluminum-polyester shield and 24 AWG stranded tinned copper drain wire. Overall tinned copper braid shield (90 percent coverage). Overall nominal O.D. of 8.9 mm or less, with outer jacket of 0.23 mm thick. Color code shall be as specified below:

1 <sup>st</sup> Pair	White/Blue Stripe, Blue/White Stripe
2 <sup>nd</sup> Pair	White/Orange Stripe, Orange/White Stripe
3 <sup>rd</sup> Pair	White/Green Stripe, Green/White Stripe
4 <sup>th</sup> Pair	White/Brown Stripe, Brown/White Stripe

~~Interconnect cable shall be United Wire and Cable Co., Inc., Consolidated Wire and Cable, or equal.~~

**Conductors:** Conductors shall conform to "Conductors and Wiring" specified elsewhere in these special provisions.

