



## REQUEST FOR QUOTATION

<b>Vendor No.</b>     <b>Contact person/Telephone</b> Thomas Ingenito/212-435-3921	<b>Collective# / RFQ Number / Bid Due Date</b> 0000020755 / 60000 / 04/06/2010 Bids must be received no later than 11:00 AM on the above Bid Due Date.  <b>Deliver Goods/Services To:</b> Path ACADEMY ST Jersey City NJ 07302
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Quantity	Description	Unit Price	Total
	CONTROL CABLE Per Material List & Specification  BIDS TO BE SEALED & SUBMITTED PER INSTRUCTIONS (faxed / emailed bids will not be accepted)  Furnish and deliver cable on reels  All cable shall be in compliance with the attached specification.  Enter unit, line totals, & total delivered price on the attached Material List. Enter Total (lot price) on RFQ.  Indicate manufacturer's name & type being quoted. SUBMIT CABLE DATA SHEETS WITH THE BID, for each type of cable for PATH technical evaluation/approval.  ATTACHMENTS: CABLE BILL OF MATERIAL (PRICING) SHEET ( 1 page ) MULTI CONDUCTOR CABLE SPECIFICATION ( 8 pages )  PRICES QUOTED SHALL BE FIXED & FIRM. Price changes will not be considered or allowed.		
	<b>PLEASE QUOTE FULLY DELIVERED PRICES</b>	<b>PAYMENT TERMS</b>	<b>Total Delivered Price</b>

This Quotation is subject to the terms and conditions set forth on the back page hereof. Bidder is advised to read these before we have read the instructions and, if favored with an order, we agree to furnish the items enumerated herein at the prices and under the conditions indicated.

Signed \_\_\_\_\_  
 Firm Name \_\_\_\_\_  
 Telephone number \_\_\_\_\_ Date \_\_\_\_\_  
 Fax Number \_\_\_\_\_  
 Federal Taxpayer ID \_\_\_\_\_

Bidder  
 Must  
 Sign  
 In  
 Two  
 Places

**NOTICE TO BIDDERS:** Unless the following term of assurance that the above offer is irrevocable is signed, the offer submitted herein shall not be deemed to be complete.

The foregoing offer shall be irrevocable for 90 days after the date on which The PORT AUTHORITY TRANS-HUDSON CORPORATION opens this proposal.  
 Signed \_\_\_\_\_ Date \_\_\_\_\_  
 Firm Name \_\_\_\_\_



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	<p>This is a Formal Bid Invitation                      Mail Sealed Bids to:</p> <p>The Port Authority of NY &amp; NJ                      Attn: Bid Custodian                      Procurement Department                      One Madison Avenue, 7th Floor                      New York, N.Y. 10010</p> <p>by the date and time listed above, where it will be publicly opened and read.</p> <p>Bids are only accepted Monday through Friday, excluding Port Authority holidays, between the hours of 8 A.M. &amp; 5 P.M., via regular mail, express delivery service or hand delivery.</p> <p>If you do not use or have an envelope provided, you must clearly mark the outside envelope/package with 'BID ENCLOSED' and show the company name, address, as well as Bid number and Due date as stated on this bid document.</p> <p>A valid photo id is required to gain access into the building,                      to attend the bid opening or hand deliver a bid.</p>		
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Quantity	Description	Unit Price	Total
1 LOT	<p><b>CONTROL CABLES</b></p> <p>Cable per Purchase Material List &amp; Specification:</p> <p>The following length tolerances shall apply:                      Over delivery. tolerance. 5.0 %                      Under delivery. tolerance. 0.0 %</p> <p><b>DELIVERY LEAD TIME</b> _____                      Delivery is desired within 10 weeks ARO (quote best delivery time)</p> <p>A price preference of 10 % is available for NY/NJ Minority and Women Business Enterprises (M/WBE) or 5% for NY/NJ Small Business Enterprises (SBE) certified by the Port Authority (PA) by the day before bid opening for awards not exceeding \$1,000,000. My firm was certified as a _____ on _____.</p>		
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 Firm Name \_\_\_\_\_

## TERMS AND CONDITIONS

1. The Port Authority (PA) reserves the right to request information relating to seller's responsibility, experience and capability to perform the work.
2. Unless otherwise provided, complete shipment of all items must be in one delivery FOB delivery point. Payment will not be made on partial deliveries unless authorized in advance by the party to be charged and the discount, if any, will be taken on the total order.
3. PA payment terms are net 30 days. Cash discounts for prompt payment of invoices may be taken but will not be considered in determining award, except in the case of tie bids.
4. Separate unit and total FOB delivered prices must be shown.
5. Sales to the PA and to PATH are currently exempt from New York and New Jersey State and local taxes and generally from federal taxation. The seller certifies that there are no federal, state, municipal or any other taxes included in the prices shown hereon.
6. The PA shall have the absolute right to reject any or all proposals or to accept any proposal in whole or part and to waive defects in proposals.
7. Unless the phrase "no substitute" is indicated, bidder may offer alternate manufacturer / brands, which shall be subject to Port Authority approval. Please indicate details of product being offered with bid.
8. Acceptance of seller's offer will be only by Purchase Order Form signed by the PA. No change shall be made in the agreement except in writing.
9. If the seller fails to perform in accordance with the terms of this purchase order, the PA may obtain the goods or services from another contractor and charge the seller the difference in price, if any, a reletting cost of \$100, plus any other damages to the PA.
10. Upon request, sellers are encouraged to extend the terms and conditions of any terms agreement with the PA to other government and quasi-government entities by separate agreement.
11. By signing this quotation or bid, the seller certifies to all statements on Form PA 3764 regarding non-collusive bidding; compliance with the PA Code of Ethics; and the existence of investigations, indictments, convictions, suspensions, terminations, debarments and other stated occurrences to assist the PA in determining whether there are integrity issues which would prevent award of the contract to the seller. The PA has adopted a policy set forth in full on PA 3764, that it will honor a determination by an agency of the State of New York or New Jersey that a bidder is not eligible to bid on or be awarded public contracts because the bidder has been determined to have engaged in illegal or dishonest conduct or to have violated prevailing wage legislation. The Terms and Conditions of PA 3764 apply to this order. A copy can be obtained by calling (212) 435-3902 or at <http://www.panynj.gov/pdf/PA3764.pdf>.
12. The vendor may subcontract the services or use a supplier for the furnishing of materials required hereunder to such persons or entities as the Manager, Purchasing Services may from time to time expressly approve in writing. All further subcontracting shall also be subject to such approval.
13. The successful bidder (vendor) shall not issue nor permit to be issued any press release, advertisement, or literature of any kind, which refers to the Port Authority or that goods will be, are being or have been provided to it and/or that services will be, are being or have been performed for it in connection with this Agreement, unless the vendor first obtains the written approval of the Port Authority. Such approval may be withheld if for any reason the Port Authority believes that the publication of such information would be harmful to the public interest or is in any way undesirable.



## FURNISH AND DELIVER MULTI CONDUCTOR CABLE

### Scope:

As directed by PATH, furnish and deliver 33 reels of multiconductor controls cable type Low Smoke Zero Halogen per the attached specification. All cable is for the Port Authority Trans Hudson and will be installed in rail tunnels and rail stations.

Furnish and deliver the following assortment of Cable reels:

Reel#	Cable Size	Length	Reel lengths
1-18	24c #12 LSZH, 2kvV Insulation	18,000ft	1000ft
19-28	37/C # 12 LSZH, 600V Insulation	10,000ft	1000ft
29-30	5/C # 12 LSZH, 2kv Insulation	2,000 ft	1000ft
31-32	2/C # 12 LSZH, 2kv insulation	2,000 ft	1000ft
33	37/C # 12 LSZH, 600 V Insulation	2,000 ft	2000ft

### General Notes.

- This PO is solely for furnishing and delivering of cable specified. There are no cable terminations or connectors being furnished.
- Cable Reel dimensions cannot exceed 66 inches in diameter and 44 inches in depth.
- Vendor shall unload all cable reels onto PATH storage location at 120 Academy Street Jersey city, NJ
- All cable reels shall have an approved pulling device installed
- All Reels shall be of wood construction and be non returnable
- There are no contract drawings to reference for this Purchase.
- All Cable furnished shall fall within the jurisdiction of NFPA 130 and NFPA 502 for railway applications where stringent flame retardant, low smoke toxicity, zero halogen and good circuit integrity during a fire are required
- Cables shall be color coded per ICEA S-73-532
- 2000V rated cable shall be listed as RHW-2
- PATH shall be afforded the opportunity to witness factory testing.

### Delivery

Deliver all cable reels to 120 Academy Street, Jersey City. Contact John Brunetto at 201 216 6969 for coordinating deliveries. Provide hydraulic or similar hoisting machine capable of unloading all reels. Reels to be unloaded by Vendor or a representative under the direction and supervision of designated PATH staff. Provide a minimum of two weeks notice for the scheduled delivery dates.

### Schedule

Delivery of all cables within 10 weeks of authorized Purchase Order is desired.

Indicate delivery lead-time in the bid.

**Bidders Notes:**

The Total delivered price shall include (but not be limited to): cable, reels, inspections, shipping, and delivery FOB delivery point

**TECHNICAL SPECIFICATION**

**PART 1 - GENERAL**

1.01 REFERENCES

A. ASTM International (ASTM)

1. B1 - Standard Specification for Hard-Drawn Copper Wire
2. B2 - Standard Specification for Medium-Hard-Drawn Copper Wire
3. B3 - Standard Specification for Soft or Annealed Copper Wire
4. B8 - Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft
5. B33 - Standard Specification for Tinned Soft or Annealed Copper Wire for Electrical Purposes
6. B174 - Standard Specification for Bunch-Stranded Copper Conductors for Electrical Conductors
7. D2802 - Standard Specification for Ozone-Resistant Ethylene-Alkene Polymer Insulation for Wire and Cable
8. D3005 - Standard Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape
9. E662 - Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials

B. Association of American Railroads (AAR)

1. RP585 – Wire and Cable Specification

C. Insulated Cable Engineers Association (ICEA)

1. S-61-402 – Thermoplastic Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.
2. S-73-532 – Standard for Control, Thermocouple Extension and Instrument Cable
3. S-95-658 – Standard for Non-Shielded Power Cables Rated 200 Volts or Less for the Distribution of Electrical Energy

4. T-33-655 – Guide For Low Smoke, Halogen-Free Polymeric Jackets
- D. International Electrotechnical Commission (IEC)
1. 331 – Fire-Resisting Characteristics of Electrical Cable
- E. International Organization for Standardization (ISO)
1. 9001 – Quality Management Systems - Requirements
- F. Institute of Electrical and Electronics Engineers (IEEE)
1. 837 – IEEE Standard for Qualifying Permanent Connections Used in Substation Grounding
  2. 1202 – Standard for Flame Propagation Testing of Wire and Cable
- G. Military Specifications (MIL)
1. MIL-DTL-24643 – General Specification for Cables and Cords, Electric, Low Smoke, for Shipboard Use
- H. Ministry of Defense, UK (DEF STAN)
1. 02 - 713 - Determination of Toxicity Index of Products of Combustion From Small Specimens of Materials
- I. National Fire Protection Association (NFPA)
1. 70 - National Electrical Code
  2. 130 – Standard for Fixed Guideway, Transit and Passenger Rail Stations
  3. 502 – Standard for Road Tunnels, Bridges and Other Limited Access Highways
- J. Underwriters Laboratories Inc. (UL)
1. 44 - Thermoset-Insulated Wires and Cables
  2. 62 – Standard for Flexible Cords and Cables
  3. 83 – Standard for Thermoplastic-Insulated Wires and Cables
  4. 467 – Standard for Grounding and Bonding Equipment
  5. 510 – Standard for Polyvinyl Chloride, Polyethylene and Rubber Insulating Tape
  6. 854 – Standard for Service-Entrance Cables
  7. 1581 – Reference Standard for Electrical Wires, Cables, and Flexible Cords
  8. 1685 - Standard for Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables
  9. 2196 – Test for Fire-Resistive Cables

1.02 QUALITY ASSURANCE

- A. The cable manufacturer shall be ISO 9001/Q9001 certified for a Quality System for wire and cable manufacturing.
- B. All wires, cables, splices and terminations, for which there are established UL standards, shall bear the UL label.

1.03 SUBMITTALS

- A. Submit Catalog Cuts for the following:
  - 1. Wires and cables for each type and size.
  - 2. Proof of cable or wire manufacturer ISO9001/Q9001 certification.
- B. Submit certified shop test reports for wires and cables.

**PART 2 - PRODUCTS**

2.01 MANUFACTURERS:

Following list or approved equal are acceptable,

- A. The Okonite Company
- B. Rockbestos, Inc
- C. Draka Cableteq, Inc

2.02 WIRES AND CABLES

- A. General
  - 1. Definitions
    - a. Wire shall be defined as a solid or stranded conductor smaller than No. 6 AWG with or without insulation.
    - b. Cable shall be defined as a single conductor No. 6 AWG or larger, or two or more conductors of any size wire under a common covering.

2. Locations, types, sizes and numbers of wires and cables are shown on the Contract Drawings. Where not indicated, provide proper wire and cable selection to comply with this section and NFPA 70 Standards.
3. The wires and cables must be suitable for use in wet and dry locations, as applicable for the installation, with temperature ratings that correspond to the conditions of application. Wires and cables shall be suitable for installation indoors or outdoors, in conduits, trays, underground ducts or direct burial in earth, as applicable for the installation shown on the Contract Drawings, and as allowed by applicable codes and this Section.
4. Unless otherwise indicated on the Contract Drawings, cable insulation shall be rated for conductor temperatures not exceeding 90 degrees C for normal operation, 130 degrees C for emergency overload conditions and 250 degrees C for short circuit conditions in accordance with ICEA standards S-95-658 and S-73-532. Temperature ratings shall be for both wet and dry locations.
5. Unless otherwise shown on the Contract Drawings, solid conductors shall be soft or annealed copper, conforming to ASTM B33 (tinned) or ASTM B3 (uncoated). Unless otherwise specified in this Section or unless otherwise shown on the Contract Drawings, stranded copper conductors shall be concentric stranding conforming to ASTM B 8.
6. Polyvinyl Chloride (PVC): PVC-insulated power wiring and items containing PVC shall not be installed in subway areas, railroad or vehicular tunnels, railroad stations, and areas defined on the Contract Drawings as subject to NFPA 130 or NFPA 502 jurisdiction.
7. Unless otherwise shown on the Contract Drawings, cable insulations and jackets designated as Low-Smoke, Zero-Halogen (LSZH) shall be thermoset, low-smoke, low-toxicity, non-halogen, flame retardant type and shall meet the following performance characteristics:
  - a. Cables shall pass the flame propagation and smoke release criteria according to the test method of UL 1685.
  - b. The halogen content of cable jackets shall not exceed 0.2 percent according to the test method of MIL-DTL-24643. The Authority classifies 0.2 percent or less halogen content as "non-halogen."
  - c. The toxicity index of cable jackets shall not exceed 2.0 according to the test method of NES 713.
  - d. The cable jackets shall comply with ICEA T-33-655 for smoke generation.
  - e. The acid gas content of cable jackets shall not exceed a maximum of 3.0 percent according to the test method of MIL-DTL-24643.
8. Use the following additional performance characteristics for wires and cables that will be installed in subway areas, railroad or vehicular tunnels, railroad stations, and areas defined on the Contract Drawings as being under the jurisdiction of NFPA 130 or NFPA 502, where stringent flame retardant, low-smoke, low-toxicity, zero-halogen and good circuit integrity during a fire are required.
  - a. All insulated conductors shall be UL listed as type XHHW-2, in accordance with UL 44. In addition, all one-conductor cables shall be listed for and marked with the following UL designations: "VW-1,"

- “LS” or “ST1” (limited smoke), “Oil and Gas Resistant,” and for 1/0 and larger, “CT USE.”
- b. Single conductor wire and cable shall utilize thermoset Low-Smoke, Zero-Halogen, Cross-Linked Polyolefin insulation conforming to ICEA S-573-532 and S-95-658. The insulation shall be comprised of a single layer of homogeneous material. Jackets or other additional coverings shall not be allowed for single conductors because of the increase in cable size. All single conductor wires and cables shall follow the dimensional requirements of NFPA 70, Table 5.
  - c. Wires shall pass the flame propagation criteria according to the test method of UL 1581 (VW-1).
  - d. The halogen content of both the wire and cable insulation and cable jacket(s) shall not exceed 0.2 percent according to the test method of MIL-DTL-24643. The Authority classifies 0.2 percent or less halogen content as "non-halogen."
  - e. The toxicity index of both the wire and cable insulation and cable jacket(s) shall not exceed 2.0 according to the test method of DEF STAN 02-713.
  - f. The acid gas content of both wire and cable insulation and cable jacket(s) shall not exceed a maximum of 2.0 percent according to the test method of MIL-DTL-24643.
  - g. The wire and cable insulation materials shall pass the smoke generation test in accordance with ASTM E662. All wires and cables shall pass the smoke release criteria according to the test method in UL 1685 for “LS” or “ST1” classification as “limited smoke.” Wire and cable insulation when tested on a specimen of 80 mils thick slab shall not exceed the following values:
    - 1) Flaming Avg. Ds (4 minutes) 50
    - 2) Flaming Avg. Dm (20 Minutes) 200
    - 3) Non-Flaming Avg. Ds (4 minutes) 50
    - 4) Non-Flaming Avg. Dm (20 minutes) 200
  - h. All single conductor wires shall provide a minimum of 15 minute circuit integrity when tested in accordance with UL 2196. UL qualification is required and shall be predicated upon a No. 12 AWG sample in conduit without the water spray.
  - i. Wires and cables shall pass the following flame propagation requirements:
    - 1) All single conductor wires and cables shall pass the “UL VW-1” vertical flame test, according to UL 1581.
    - 2) All single conductor wires and cables shall pass the vertical flame test stated in AAR RP583, paragraph 5.9.4.
  - j. Water Resistance
    - 1) All wires and cables shall be rated for wet applications at 90 degrees C as defined by the requirements for type “XHHW-2” stated in UL 44 when tested in accordance with UL 1581.
    - 2) The mechanical water absorption of the insulation shall not be greater than 4 mg/sq. in. when tested in accordance with UL 1581.

- 3) All wires shall be suitable for prolonged exposure to water by evidence of long term insulation resistance qualification testing in 90 degree C water. Testing shall be in accordance with UL 44 and UL 1581. After a minimum of one year exposure to 90 degree C water, the insulation resistance measurements must exceed an insulation resistance reading of 4.0 megohms/1000 ft. Sample used for testing shall be either 14 or 12 AWG with a nominal 30 mils of LSZH insulation.
- k. Overload Stability
- 1) To ensure overload stability, all wires and cables shall pass the following tests defined in AAR Standard RP585:
    - a) Electrical Overload – Single Conductor (paragraph 5.9)
    - b) Bundle Overload (paragraph 5.9.1)
    - c) 125 degrees C Penetration Test (paragraph 5.9.2)
- l. The insulation shall demonstrate heat stability by retaining 95 percent of its original tensile strength and elongation values after aging seven days at 158 degrees C, as per AAR Standard RP585.
- m. Multi-Conductor Cables: Where multi-conductor cables are utilized, use the following additional criteria:
- 1) Multi-conductor control cables shall utilize stranded class "B" or "C" conductors in accordance with ASTM B8. All conductors shall utilize thermoset low-smoke, zero-halogen cross-linked polyolefin insulation, conforming to ICEA standard S-95-658 and S-73-532, and be listed as type "XHHW-2." Insulated conductors shall be cabled with a suitable binder tape, and covered with a low-smoke, zero-halogen cross-linked polyolefin jacket. All cables shall be UL listed Type TC in accordance with UL 1277. All individual insulated conductors utilized in multi-conductor cables shall meet all of the requirements set forth in this Section for single conductor cables for subway areas, railroad or vehicular tunnels, railway stations and areas defined on the Contract Drawings as under the jurisdiction of NFPA 130 or NFPA 502, except that UL print is not required on the individual conductor insulation.
  - 2) The halogen content of the cable jacket(s) shall comply with 2.02.A.8.d of this Section.
  - 3) The toxicity index of the cable jacket(s) shall comply with 2.02.A.8.e of this Section.
  - 4) The acid gas content of the cable jacket(s) shall comply with 2.02.A.8.f of this Section.
  - 5) The cable jacket materials shall pass the smoke generation test in accordance with ASTM E662. Cable jacket when tested on a specimen of 80 mils thick slab shall not exceed the following values:
    - a) Flaming avg. DS (4 minutes): 50
    - b) Flaming avg. DM (20 minutes): 150
    - c) Non-Flaming avg. DS (4 minutes): 50
    - d) Non-Flaming avg. DM (20 minutes): 250
  - 6) All multi-conductor wire and cables shall provide a minimum of 15 minute circuit integrity when tested in accordance with IEC-

331. Qualifications shall be predicated on a 2/C No.14 AWG sample tested at 240 Volts.

- 7) All multi-conductor cables shall pass the UL vertical flame test criteria according to the test methods stated in UL 1685 for IEEE 1202 type of flame exposure. Test sample used shall be 2/c No.14 AWG.
  - 8) All multi-conductor wires and cable shall be listed for, and be marked with, the following UL designations on the cable jacket: "Type TC" (Tray Cable), "LS" or "ST1" (Limited Smoke), "Sun Res" (Sun Resistant) or "XHHW-2"/"90 degrees C Wet and Dry," "IEEE 1202."
9. 2000 Volt rated Control Cable
- a. Multi conductor control cable shall utilize class B strand in accordance with ASTM B8. All individual conductors shall utilize thermoset, low smoke, and zero halogen cross-linked polyolefin insulation at 2KV rating conforming to ICEA S95-658 and be listed as Type RHW-2.
  - b. The insulated conductors shall be cabled with a suitable binder tape and covered with a low smoke zero halogen, black cross linked polyolefin overall jacket. Circuit identification shall be either Method 1 (colored compounds) or Method 3 (printed color designation) per ICEA with a K2 color scheme unless otherwise noted on the contract drawings.

## 2.03 FACTORY TESTS

- A. Regular dielectric-withstand and insulation-resistance in water tests for wires and cables shall be performed in accordance with UL44.
- B. Flame tests for wires and cables shall be performed in accordance with UL 1685, UL 2196 and AAR RP-585.
- C. The test results shall be certified for each reel/coil/box of wire or cable.