

CITY OF BLAINE

REQUEST FOR BIDS

NOTICE IS HEREBY GIVEN that the City of Blaine is seeking two separate bids for the purchase of following material for Circuit 17 Project:

Bid Package (21PW01B) – Electrical Material – Circuit 17

Bid packages can be obtained, at no cost, on the City’s website ([News Flash • Blaine • CivicEngage](#)) or by emailing Manroop Kaur at mkaur@cityofblaine.com . All bids must be delivered to Blaine Public Works, 1200 Yew Avenue, Blaine, WA 98230, no later than **10:30am PST, September 18, 2023**. The City reserves the right to reject any or all bids, waive technicalities or irregularities, and accept any submittals if such action is determined to be in the best interest of Blaine.

The City of Blaine in accordance with Title VI of the Civil Rights Act, hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, national origin or sex in consideration for an award.

Manroop Kaur
Public Works Project Manager
Published: August 21, 2023

INSTRUCTIONS TO BIDDERS

1. Bidders are required to reply to all items in the specifications. Attach any information necessary to explain or clarify your bid.
2. Equipment must conform to all legal requirements of Federal, State, and Local vehicle laws and regulations and as included in the specifications.
3. Prices/quotes shall be in U.S. funds and include applicable taxes.
4. Unsuccessful bidders will not be automatically notified, but results can be obtained on request.
5. Determination of product acceptability is at the sole discretion of the City and City staff.
6. The vendor shall hold and save the City, its officers, agents, and employees, harmless from liability of any nature or kind, including costs and expenses for, or on account of any or all suits or damages of any character whatsoever resulting from injuries or damages sustained by any person or persons or property by virtue of performance of this contract, unless such suits or damages arise from negligence on the part of the City or its employees in the performance of their assigned duties. The City shall not be liable for any costs incurred by the bidder in bid preparation.
7. Bidder may withdraw its proposal at any time prior to the scheduled closing but must do so in writing.
8. Equipment delivery shall be made to:

ATTENTION: James Mitzelfeldt
City of Blaine Public Works
1200 Yew Avenue
Blaine, WA 98230

9. Billing of invoices shall be sent to:

ATTENTION: Karla Flaming
City of Blaine
435 Martin Street, Suite 3000
Blaine, WA 98230

BID OPENING

All bids must be submitted to:

ATTENTION: Manroop Kaur
City of Blaine
1200 Yew Avenue
Blaine, WA 98230

no later than 10:30am PST, September 18, 2023 by mail or in person in an envelope clearly marked on the outside **“Sealed Bid – Electrical Material – Circuit 17”**.

1. Bids will not be accepted if received at the City of Blaine later than the date and time set for opening. It is the bidder’s responsibility to deliver the bid to the proper address by the assigned time. The City of Blaine accepts no responsibility for misdirected or lost bids.
2. The City of Blaine reserves the right to reject any and all bids, to waive minor deviations from the specifications, or to waive any informality in bids received, whenever such rejection or waiver is in the best interests of the City.
3. Bidders are cautioned that neither preliminary bid results nor an indication of the apparent lowest bid compel the City to make an award.
4. The City of Blaine reserves the right to reject any or all bids at any time without penalty.

MULTIPLE BIDS

Vendors interested in submitting more than one bid may do so, providing each bid stands alone and independently complies with the instructions, conditions and specifications of this Invitation to Bid.

SINGLE RESPONSE

A single bid submitted in response to this Invitation to Bid may be deemed a failure of competition and in the best interest of the City of Blaine, the Bid may be rejected.

BIDDING ERRORS

The City of Blaine will not be liable for any errors in any vendor’s bid. Vendor will not be allowed to alter the bids after the deadline for submission of bids.

After opening and reading bids, the City of Blaine will check them for correctness of extensions of the prices and per unit and the total price. If a discrepancy exists between the price per unit and the extended amount of any bid item, the price per unit will prevail. The total of extensions, corrected where necessary, will be used by the City of Blaine to determine lowest bidder.

TAXES AND FEDERAL EXCISE TAX

Washington State Sales tax shall be shown as a separate line on the bid submittal sheet. No charge by the bidder shall be made for federal excise taxes. The City of Blaine is exempt from federal excise tax and such taxes shall not be included in bid prices. The City of Blaine agrees to furnish bidder, upon acceptance of articles supplied under this order, with an exemption certificate, if necessary.

BUSINESS LICENSE

The awarded vendors are responsible to become compliant with Blaine business license requirements per BMC 05.10.

ADDENDUM

Any addenda or the updates related to the Bid Request will be posted on City of Blaine's Website under the same link from where the specifications are downloaded. It is vendor's responsibility to check the website continuously for any addenda.

QUESTIONS

All questions regarding this Invitation to Bid, proposal form and bid submission can be directed to Manroop Kaur via email at mkaur@cityofblaine.com.

All questions regarding the material specifications can be directed to Gary Braaksma via email at gary@braaksma-engineering.com. Please make sure to cc James Mitzelfeldt (JMitzelfeldt@cityofblaine.com) and Mike Schrader (MSchrader@cityofblaine.com) in the conversations.

The deadline to ask questions is September 08, 2023 till 5:00pm.

BID PROPOSAL

PRICE NEEDS TO BE VALID UNTIL October 30, 2023

BID SCHEDULE FOR: AS OUTLINED IN THE ATTACHED SPECIFICATIONS

TOTAL LUMP SUM....._____

FREIGHT_____

WASHINGTON STATE SALES TAX (8.8%)....._____

TOTAL BID....._____

EXPECTED DELIVERY DATE:

SUPPLIER:

Company Name

Address

Telephone Number

Signature

Title

Submit bid to:

**City of Blaine
Public Works
Attn: Manroop Kaur
1200 Yew Avenue
Blaine, WA 98230**

MARK OUTSIDE OF ENVELOPE “Sealed Bid – Electrical Material - Circuit 17”.

Note: Bidders are encouraged to attach detailed cost breakdown sheet in addition to the proposal form.

NON-COLLUSION AFFIDAVIT

STATE OF WASHINGTON)

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NON-COLLUSION AFFIDAVIT

COUNTY OF WHATCOM)

_____ (name of representative) being first duly sworn, on his/her oath certifies that the bid above submitted is a genuine and not a sham or collusive bid, or made in the interest or on the behalf of any person not therein named; and he/she further says that the said bidder has not directly or indirectly induced or solicited any bidder on the above work or supplies to put in a sham bid, or any other person or corporation to refrain from bidding; and that said bidder has not in any manner sought by collusion to secure to _____ (name of the company) an advantage over any other bidder or bidders.

Subscribed and sworn to before me this ____ day of _____ 2023.

Notary Public in and for the State of

_____,
residing at _____.

Materials list
Circuit 17 Upgrade Project

ITEM NO.	DESCRIPTION	QTY	UNIT
REFER TO SPECIFICATION FOR MATERIAL REQUIREMENTS			
1 Vault Hardware			
1	Vault rack strut vertical channel	104	EA
2	Vault rack strut 12" arm	196	EA
3	Spring nuts, size for grounding studs and support bolts	310	EA
4	Spring nut bolts, size for vault vertical channel	276	EA
5	Cable ties	298	EA
2 Conduit			
6	Conduit, 3" Schedule 80 PVC	9440	LF
7	Conduit, 3" Schedule 40 PVC	27800	LF
8	Conduit, 3" fiberglass 22.5 degree wide radius sweep	68	EA
9	Conduit 3" bell ends	90	Ea
3 Cable			
10	750kCMIL 15kV AL	27,160	LF
11	#4/0 AWG 15kV AL	5484	LF
12	#1/0 AWG 15kV AL	50	LF
4 Conductor fittings			
13	600A Elbow, (T-body) 15kV	54	EA
14	600A Elbow insert plug, with cap, 15kV BIP	24	EA
15	600A Elbow reducing bushing 200A , 15kV	30	EA
16	600A Connecting plug (football)	24	EA
17	200A dust cap, 15kV	67	EA
18	4 pos J-bus	15	EA
19	Dust Cap	19	EA
20	L.B. Elbow, 15kV	49	EA
21	Fault Indicators (est, 3 per pull vault)	69	EA
22	Writable plastic cable tags	108	EA
5 Ground conductors and fittings			
23	Ground Loop #2/0 AWG BC (40' per 600A vault)	400	LF
24	Ground Loop #2 AWG BC (30' per 200A vault)	150	LF
25	Ground Clamp for ufer, spring nuts and j-bus	144	EA
26	Crimp Connectors, 2/0 -2/0	80	EA
27	Crimp Connectors, #2-#2 (8 per vault)	40	EA

Notes: bulk purchase items (bin stock) quantities are minimum, increase to carton size



BRAAKSMA ENGINEERING
electrical engineering

Blaine Circuit 17 Upgrade
Blaine, WA

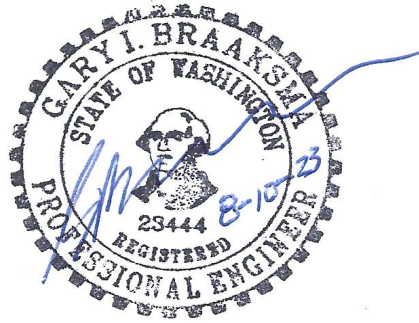
Electrical Materials Specification

August 2023



ELECTRICAL MATERIAL SPECIFICATION

Certification



I hereby certify that these documents were prepared by me or under my direct supervision and that I am a duly licensed engineer under the laws of the State of Washington.

*** END OF SECTION***



ELECTRICAL MATERIAL SPECIFICATION

PART I GENERAL

Portions of this specification referring to installation requirements are offered only to put the Materials descriptions within context and are offered as informational only. This specification is for Material procurement only.

1.1 RELATED REQUIREMENTS SPECIFIED IN OTHER SECTIONS

The General, Supplementary and Modifications to the General Conditions of the Owner-Contractor Agreement, and applicable portions of the other Divisions of the specification, apply to the work specified in this section.

1.2 EXISTING CONDITIONS

Before submitting bid, the Supplier shall be familiar with site conditions and system requirements to determine any effect on manufacture and supply of the specified materials, and include costs in bid.

By submitting a bid the Supplier is acknowledging that they have sufficiently understood the scope of construction work required and have included in bid, whether specified or not, the supply of items required serve the intended installation operational systems.

1.3 SCOPE OF WORK

A. Work Included:

- a. The supplier shall furnish and deliver to City of Blaine yard the items generally described as follows:
 1. Vault Hardware,
 2. Conduit,
 3. Cable (15KV),
 4. Conductor Fittings,
 5. Secondary conductors, terminations and pedestal,
 6. Ground Conductors and Fittings.

- b. Offloading assistance may be rendered by the City of Blaine with equipment capable of lifting 10,000lbs. All necessary rigging or slings shall be provided by the supplier.

1.4 QUALITY ASSURANCE

A. Codes:

The completed installation shall comply with all laws, regulations and requirements in effect at the site and shall comply with the current editions of the following:

NESC - National Electrical Safety Code.

OSHA - Occupational Safety and Health Act.



ELECTRICAL MATERIAL SPECIFICATION

Washington State Rules and Regulations for Installation Electrical Wires and Equipment.

WAC - Washington Administrative Code and Bellingham Electric Code.

Washington State Energy Code.

UFC - Uniform Fire Code.

UBC - Uniform Building Code.

B. Standards:

The following standards establish the minimum requirements for the equipment and installation:

ANSI - American National Standards Institute.

ICEA - Insulated Cable Engineers Association.

IEEE - Institute of Electrical and Electronics Engineers.

NEMA - National Electrical Manufacturers Association.

NFPA - National Fire Protection Association.

C. Guarantee:

The Supplier shall guarantee materials for a period of one year from date of final acceptance of installation. Note that this time period may exceed one year from delivery of materials.

Any Materials that are not in the opinion of the Owner as they should be, shall be replaced without cost to the Owner.

D. Submittals

Shop drawings and product data shall be provided with sufficient detail, including application, so compliance with the drawings and specifications can be verified before purchasing. Items not in accordance with the drawings and specifications will be rejected.

Engineer's review of submittal is for general compliance with the project requirements. Any comments and suggested revisions made by Engineer do not relieve the supplier of responsibility to furnish material or equipment meeting all service and dimensional conditions of the project, and compatibility with other equipment or hardware.

Forward all submittals to the Owner or Representative, together, at one time. Individual or incomplete submittals are not acceptable. No substitutions will be permitted without 7 day prior approval.

Shop drawings or product data shall be submitted to the Owner or Representative, for the following:

- a. Vault Hardware,
- b. Conduit,
- c. Cable (15KV),
- d. Conductor Fittings,
- e. Secondary conductors, terminations and pedestal,
- f. Ground Conductors and Fittings.



ELECTRICAL MATERIAL SPECIFICATION

PART 2 MATERIALS

2.1 GENERAL

- A. Rating:
All electrical materials shall be rated and approved for the intended service.
- B. New:
All electrical equipment, devices, materials, etc., shall be new and manufactured by reputable recognized manufacturers. Each type of item shall be the same make and quality throughout the project.
- C. Enclosures and structures:
Equipment and devices shall be purpose built for outdoor installation subject to public traffic. Surface preparation and finish shall be manufacturer's standard.

2.2 CONDUIT

- A. The entire power system installation shall be in raceways of the types listed below:
 - a. Polyvinyl Chloride Conduit (PVC) Schedule 40 - below grade, Schedule 80 under roadways and driveway crossings.
- B. PVC conduit shall be heavy-wall (Schedule 40 or 80), flame-retardant, suitable for use with 90 degree C cable, shall not distort from heat it will normally encounter and shall be resistant to low temperature and sunlight effects, impact and crushing. PVC conduit system fittings, couplings, etc., shall be of the same manufacturer as the conduit.
- C. Conduit terminations shall have bell-ends installed.
- D. Primary Cable Conduit Bends shall be 48" radius minimum.

2.3 VAULTS (GENERAL)

- A. Vaults are specified within a separate specification for separate proposal.
- B. Vaults (larger than mini-pad) shall include supports for 360 degree circle of cable (minimum) on each phase, supported on 14" hot dip galvanized brackets attached to hot dip galvanized vertical channels bolted to vault steel channels. Vertical channels shall be Maclean J5126-30 and support brackets shall be Maclean J5134A, secured with 1/2"-13 spring nut Fastenal part number 48611(or equal) with 1.25" long 1/2"-13 Stainless Steel bolts.
- C. Cables shall be marshalled in a workmanlike manner, entering the vault at opposite corners and rotating in the same direction for all entries, lashed to support brackets with one tie per cable. Cable ties shall be heavy duty, UV resistant nylon, -40 to +185 degree F working temperature, 250 lb tensile strength.

2.4 PRIMARY WIRE AND CABLE

- A. Primary power cable shall be 15kV UR type MV-105, Aluminum and Copper (refer to drawing), filled strand, with extruded semiconductor layer, 133% 220 MIL EPR insulated,



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extruded conducting insulation shield, full sized copper concentric neutral and PVC over jacket. Okonite brand.

- B. 200A Terminators shall be molded of EPDM rubber, enclosed in a molded semi-conductive jacket that is grounded during operation, and provided with a stainless steel reinforced pulling eye. Elastimold type 162LR, or approved equal with appropriate size sleeve.
- C. Unused 200A bushings shall have a 15 kV rated, insulated, premolded protective dead end cap with ground lead. Elastimold type 160DRG, or approved equal.
- D. 600A Terminators shall be molded of EPDM rubber T-body, enclosed in a molded semi-conductive jacket that is grounded during operation. 600A terminators shall include 200A insert as grounding and test point, with 15kV rated dead end cap with ground lead, Elastimold type 655ETP-M-0380-DRG with 650ETP elbow tap plug, or approved equal.
- E. Unused 600A Terminator openings shall have a 15kV rated, insulated, premolded insulating plug with insulating plug cap Elastimold 650 BIP or approved equal.
- F. Upward facing unused 600A Terminator openings shall include a reducing 200A bushing tap for grounding and testing usage, and equipped with a premolded protective dead end cap with ground lead.
- G. Back to back 600A Terminators shall be connected with 600A Connecting Plug, Elastimold K650CP.
- H. Load side cables in vaults shall have Fault Indicators on all phases. Fault Indicators shall be automatic resetting on load or current, local or remote LED indication, load tracking above 50A, 72 hour peak load memory, self-powered, elbow or cable mounted, 1500 flashing hours, 20 year shelf life, hot stick applied Power Delivery Products Inc. FCI Load Tracker LM Underground.
- I. Cable pulling lubricants shall have no damaging effect on the insulation, shielding or concentric neutral wires.
- J. Taps and splices not allowed except at transformers and pedestals.

2.5 SECONDARY POWER CABLES AND CONNECTORS

- A. Secondary Distribution power cables shall be Triplex 600V Secondary UD, concentrically stranded compressed aluminum (unless indicated otherwise). Cable shall be suitable for use in underground conduits at 90° degrees C for continuous normal operation. Cables shall include two phase conductors and marked neutral conductor, cabled together.
- B. Branch Circuit wiring (to street lights) shall be single Triplex 600V Secondary UD, #6 AL.
- C. Secondary cable terminal blocks within pedestals, shall be aluminum, set screw type of the proper size (6 pos minimum); 500kCMIL capacity, aluminum and water tight covered IlSCO PED6-500EP or approved equal. Supplier to verify compatible number and size of conductor connections.
- D. Secondary cable terminal blocks within street light handholes, shall be aluminum, set screw type of the proper size (4 pos), aluminum and water tight covered IlSCO PED4-350SS or approved equal.
- E. Secondary connector within transformers shall be dual rated connectors for aluminum or copper conductors. Clear plated for low-contact resistance. Fully tested to ANSI C119.4 for



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class 'A' connections. Supplied with aluminum radial tipper set-screws. Connector fabricated from 6061-T6 aluminum allow for conductivity and strength. Transformer connectors shall be Type L4D6-500I.

- F. Cable pulling lubricants shall have no damaging effect on the insulation.

2.6 SERVICE PEDESTALS

- A. Service pedestals shall be above-grade, Munsell Green UV stabilized Polyethylene anchor flange type with nominal dimensions of 9" x13" x 30". The dome shall be secured with tamperproof stainless steel locking system. Nordic Fiberglass, Inc. PSP-91330-MG
- B. Service Pedestals shall be without blocks (see Secondary Power Cable section for connector blocks).
- C. Pedestals shall be numbered as required by City of Blaine.

2.7 GROUNDING

- A. Grounding electrode conductors shall be bare, soft drawn copper wire. Grounding conductors subject to physical damage or passing through concrete, etc. shall be protected by PVC conduit sleeves.
- B. Ground clamps, nuts, washers, etc. shall be corrosion resistant high copper alloy or silicon bronze.
- C. Ground ring connection shall be connecte to ufer ground threaded insert (two locations minimum) using bolted clamps with studs, Hubbel Fargo GC-208.
- D. Ground loop shall be further supported on vault cast in channels using bolted clamps with studs, Hubbel Fargo GC-208 and 1/2"- 13 Spring Nuts for 13/16" or 1" channels.
- E. Ground Loop shall provide location for cable neutrals to be connected utilizing copper C compression fittings IlSCO 2/0-2/0 ULT-9-2 (IlSCO #2-#2 in 200A vaults).

2.8 NAMEPLATES

- A. All equipment shall be identified with permanently attached nameplates in accordance with City of Blaine numbering system and standards. Including pedestal numbers, cable tags, switch numbers and vault identification.
- B. All cables shall be tagged at each end with Red, Write On 6" Mid Size Flag Cable Tags. ZIPTAPE brand part number ZTY-WOFLMID-6".



ELECTRICAL MATERIAL SPECIFICATION

PART 3 INSTALLATION

3.1 CONSTRUCTION METHODS

- A. Workmanship: The electrical installation shall be done in a neat and workmanlike manner and shall be suitable for the location. Conduit stub ups, sleeves and ends left open for future connection, unused hubs in fittings and unused holes in boxes shall be plugged or capped to prevent the entrance of moisture and debris.

3.2 STORING

All electrical equipment and materials shall be stored neatly and out of the way off the ground and protected from the weather. Equipment and devices, etc., shall be stored dry and warm, free of dust and condensation, cable stored per manufacturer's instruction. Primary cable shall be capped by heat shrink at all times and reels stored upright (horizontal spindle).

3.3 WIRE AND CABLE

- A. Wire and cable shall not be exposed to weather or mechanical damage longer than necessary. Cut ends of cable shall immediately be sealed.
- B. Cable shall be unrolled from reels, or removed from cartons, and installed in a manner which will prevent kinking, crushing or excessive tension on conductors and insulation.
- C. Each cable shall be tagged at each end with its circuit identification.
- D. Conductor connections shall be made with connectors of the proper size and type. Compression connections shall be made with the correct die and number of crimps, or the correct tightening torque in the case of mechanical connector, according to the manufacturer's instructions and recommendations. Use suitable oxide inhibiting joint compound on all aluminum termination. Care shall be taken to not nick conductors during insulation removal.

3.4 TESTING

- A. All systems shall test free from shorts and ground and shall be without mechanical and electrical defects. If any test indicates a failure the item shall be replaced or suitably repaired to the approval of the Owner and the test repeated without additional cost to the Owner.
- B. 600V cables shall have the insulation resistance to ground measured with other phases grounded after all splices and terminations are made and with cables isolated from transformers/load. Insulation resistance to ground shall be measured using a 500 volt megger. The minimum resistance shall be 1.0 megaohm. Branch lighting and general purpose receptacle circuits do not require an insulation test functional tests only are required; however, all receptacles shall be tested for correct connection using a suitable receptacle tester.
- C. Medium Voltage Cable Testing
 - a. Perform high potential test on each section of 15kV cable between terminations after installation. Test with splices and terminations in place but disconnected from equipment or the remainder of the system.



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- b. Perform test in presence of Owner representative or Engineer. Notify representative two days in advance of each test.
- c. Furnish necessary test equipment and experienced testing personnel.
- d. Perform high-potential tests in accordance with applicable ICEA and NEMA standards. Use DC test voltage applicable to the type and thickness of the cable. The test voltage may be applied in steps, increasing to maximum voltage for not less than 10 seconds and not more than 60 seconds. Test Voltage shall be minimum 10kV.
- e. Accurate field test records shall be kept.
- f. Cable that does not pass test shall be replaced.