

**Starkville Utilities Electric Division
MATERIAL AND SUPPLY BIDS**

VENDOR: _____

ADDRESS: _____

PHONE #: _____

SIGNED: _____

DATE: _____

**PRICES ARE FOB STARKVILLE, MISSISSIPPI
PERIOD: July 1, 2023, to December 31, 2023**

**ANY EXCEPTION TO THE SPECIFIED DELIVERY SHALL BE
NOTED AND THE BEST BID WILL BE BASED ON BOTH PRICE
AND DELIVERY**

**REFERENCES TO SPECIFIC BRAND NAMES ARE SO NOTED TO
PROVIDE VENDORS WITH DESCRIPTIVE INFORMATION AND
SHOULD BE CONSIDERED AS “THAT BRAND OR
EQUIVALENT” EXCEPT WHERE NOTED.**

Authorized Bidder Certification

Bidders for this equipment must be the Manufacturer, the Manufacturer’s Authorized Mississippi Representative, or the Manufacturer’s Authorized Mississippi Utility Distributor.

Bidder hereby certifies that he or she is (Check One):

_____ Manufacturer

_____ Manufacturer’s Authorized Mississippi Representative

_____ Manufacturer’s Authorized Mississippi Utility Distributor

Printed Name of Firm

Printed Name of Firm’s Authorized Representative

Signature of Firm’s Authorized Representative

Date

**YEAR 2023 SOURCES OF SUPPLY
THE CITY OF STARKVILLE, MISSISSIPPI
STARKVILLE UTILITIES ELECTRIC DIVISION**

GENERAL BID REQUIREMENTS

SPECIAL NOTE: Please read the following information carefully. Failure to conform to the General Bid Requirements may result in rejection of a Bid.

1. All bids must be submitted on the standard bid form provided. Further, the firm supplying the quotation should include the name of their firm on:
 - a. Each page of the bid form utilized in the quotation.
(It is not necessary to return the unused portion of this packet.)
 - b. On any literature (i.e., manufacturer specifications, brochures, etc.) that may be included with the bid.
2. The notation, “Source of Supply Bid,” must appear on the outside of the envelope or container in which the bid is submitted.
3. Bids shall be submitted by **2:00 P.M., on the date specified in the enclosed packet mailer** in order to be considered. No bid shall be withdrawn after the scheduled date and time of the opening of bids without the written consent of the **CITY OF STARKVILLE**.
4. **Prices submitted must be firm and all bid quotations shall be valid for the 2023 Period Beginning July 1, 2023, through December 31, 2023, or shall state the Period of Validity of the bid quotation.**
5. The City reserves the right to extend this contract, or any portion thereof, into the next source of supply period if prices quoted by that vendor remain the same for the extended period. This provision will only be exercised if circumstances beyond the control of the CITY inhibit total contract renewal.
6. The bidder is responsible for the verifying receipt by this office of the bids; however, verification is not a requirement for inclusion in the process.
7. All bids shall be net, F.O.B. Starkville, Mississippi, with transportation charges Pre- Paid by the vendor.
8. Manufacturer’s brand names or part numbers are shown only to describe the item and to determine a level of acceptable quality except where an item is specified as a particular manufacturer and item only. The CITY will accept bids for items, which are equal or superior to those named, in triplicate for **Vendors shall provide**

complete data any equivalent items. The data is to include descriptions, technical specifications, dimensional drawings and manufacturer's cut sheets.

9. The CITY reserves the right to total subdivisions of a numbered category to determine the lowest and best bid.
10. The CITY does not guarantee the purchase of any specific quantities of the items listed. Purchases will be made to cover requirements as they arise during the contract period.
11. Where specifications are not spelled out, the industry standard for that type and size of item will prevail.
12. The CITY will tabulate bids, select successful vendors, and mail bid tabulation to all participating vendors as soon as practicable.
13. The CITY reserves the right to reject any or all bids when such rejection is deemed in the best interest of the CITY.
14. The CITY is unable to furnish copies of the bid tabulations from previous years.
15. Minor deviations from exact sizes, dimensions, measurements, etc. may be accepted on items bid, at the discretion of the Department Head. Any such deviation must be noted on the bid form by the vendor.
16. If a contractor intends to apply a noted exception to a particular project, the CITY must be notified prior to the commencement of the project.
17. All contractors are required to submit proof of liability and workman's compensation coverage for their employees with their bid.
18. The CITY reserves the right, based on its own discretion, to purchase from the next low bidder if the low bidder is unable to deliver the goods within a reasonable amount of time as determined by the CITY based on its immediate needs or customary circumstances.
19. The CITY will pay invoices within 45 days of receipt of the invoice. Items purchased must have been received PRIOR to payment of invoice. Late fees will NOT be paid by the CITY OF STARKVILLE.
20. An authorized signature MUST be included on the bid form.

**STARKVILLE UTILITIES ELECTRIC DIVISION
SOURCE OF SUPPLY**

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I. CROSS ARMS AND EQUIPMENT BRACKETS

A. FIBERGLASS 15° VERTICAL SINGLE PHASE PIN INSULATOR BRACKET. 2" HEAVY DUTY ROD DIAMETER, 18" LENGTH, 8"- 10" MOUNTING CENTERS. MACLEAN PART #G1HDA118DV1, HUGHES PART #CF830A-18, CHANCE PART #1SBH18V1 OR EQ.

25 more or less _____

B. FIBERGLASS 15° VERTICAL TWO PHASE PIN INSULATOR BRACKET. 2" HEAVY DUTY ROD DIAMETER, 48" WIDTH. MACLEAN PART #G2HDA248DV1, CHANCE PART #2SBH48VV1, HUGHES PART #CF861A-48 OR EQ.

25 more or less _____

C. WOODEN CROSS ARMS

1. 3 3/4" X 4 3/4" X 8 FT. 25 more or less _____

2. 3 3/4" X 4 3/4" X 10 FT. 25 more or less _____

D. BRACELESS DEADEND CROSSARM ASSEMBLIES

1. 5 FT. FIBERGLASS DEADEND ASSEMBLY, 12 INCH POLE SPACE, DOUBLE GUY ATTACHMENT, 2000 SERIES BEAM, EYE NUTS FRONT AND BACK SIDE, 2 DEADEND DRILLED POSITIONS, GRAY COLOR. PUPI PART # DA2000-060-E2-SPX2 OR EQ.

12 more or less _____

2. 8 FT. FIBERGLASS DEADEND ASSEMBLY, 12 INCH POLE SPACE, DOUBLE GUY ATTACHMENT, 2500 SERIES BEAM, EYE NUTS FRONT AND BACK SIDE, 3 DEADEND DRILLED POSITIONS, GRAY COLOR. PUPI DA2500-096-E3-B7X2 OR EQ.

24 more or less _____

3. 10 FT. FIBERGLASS DEADEND ASSEMBLY, 12 INCH POLE SPACE, DOUBLE GUY ATTACHMENT, 3000 SERIES BEAM, EYE NUTS FRONT AND BACK SIDE, 4 DEADEND DRILLED POSITIONS, GRAY COLOR. PUPI DA3000-120E4-B9X2 OR EQ.

12 more or less _____

E. BRACELESS TANGENT ARMS

1. 5 FT. BRACELESS TANGENT CROSSARM, 8-10-12 INCH POLE SPACE, 3000 BEAM SERIES, REA04 DRILL SPEC, GRAY.
PUPI TB2000-060-SPX2 OR EQ.

12 more or less _____

2. 8 FT. BRAVELESS TANGENT CROSSARM, 8-10-12 INCH POLE SPACE, 3000 BEAM SERIES, REA04 DRILL SPEC. GRAY.
PUPI TB3000-096-04X2 OR EQ.

35 more or less _____

3. 10 FT. BRACELESS TANGENT CROSSARM, 8-10-12 INCH POLE SPACE, 3000 BEAM SERIES, REA05 DRILL SPEC. GRAY.
PUPI TB3000-120-05X2 OR EQ.

12 more or less _____

- F. FIBERGLASS 0° THREE PHASE CUTOUT / ARRESTOR BRACKET. 1.5” MEDIUM DUTY ROD DIAMETER, 48” BETWEEN OUTSIDE MOUNTING POSITIONS(WIDTH), AND 18” STANDOFF LENGTH FOR CENTER MOUNTING POSITION. MACLEAN PART #G3MA024818DCB, HUGHES PART #CF670-48-18, HUBBELL PART #3SBM4818CTB, OR EQ.

40 more or less _____

- G. FIBERGLASS 0° SINGLE PHASE CUTOUT / ARRESTOR BRACKET. 1.5” MEDIUM DUTY ROD DIAMETER, 18” STANDOFF LENGTH. MACLEAN PART #G1MA0118DCB, HUGHES PART #CF667B-18, ALUMNA-FORM PART #F1CA-MV-H18-S1-H, HUBBELL PART #1SBM18CTB, OR EQ.

50 more or less _____

- H. CROSS STRAP FOR CUTOUT/ARRESTOR BRACKET

A.B. CHANCE PART #C2060190, HUGHES PART #CF759, OR EQ.

50 more or less _____

II. PRIMARY / SECONDARY HARDWARE

A. ALUMINUM STRAIGHT LINE SPRING-LOADED DEAD END CLAMP, TYPE ADEZ, ANDERSON OR EQ. (ALUMINUM D.E. SHOE)

- 1. ADEZ-70-N (4 TO 4/0 ACSR) 100 _____
- 2. ADEZ-116-N (336.4 TO 954 ACSR) 25 _____

B. ALUMINUM ANGLE SUSPENSION CLAMP, ANDERSON OR EQ. (ANGLE SHOES)

- 1. AAC – 301 (0.198 - .732) 25 _____
- 2. HAS – 118 – C (0.70 - 1.18) 25 _____

C. ALUMINUM MECHANICAL STIRRUP, ANDERSON, RICHARDS OR MACLEAN. (HOT LINE STRIRRUP)

- 1. AHLS – 024019 – E or HLAS-4/0 (4 – 4/0 ACSR) 50 _____
- 2. AHLS–954022–E or ASC-1000 (336.4 – 954 ACSR) 25 _____

D. BRONZE HOT LINE CLAMP, ANDERSON PART #BC-2/0 OR RICHARDS BHLC-100 OR EQ.

50 _____

E. ALUMINUM HOT LINE CLAMP, ANDERSON, RICHARDS OR EQ.

- 1. S1530AGP or AHLC300TN (0.157 - 0.905) 50 _____
- 2. S1545AGP (0.939 – 1.490) 50 _____

F. CLEVIS TYPE SUSPENSION INSULATORS. ANSI CLASS 52-9A. LAPP 6815-70E OR RUS APPROVED EQ.

96 _____

G. DISTRIBUTION DEADEND INSULATOR. SILICONE HOUSING WITH FIBERGLASS CORE. 35 KV. ANSI 52-4 CLEVIS AND TONGUE END FITTINGS. MACLEAN POWER SYSTEMS DS-35M, OR ALUMA-FORM DEI-35, OR RUS APPROVED EQUIVALENT. HOUSING MUST BE SILICONE RUBBER – NO EPDM.

18 more or less _____

H. PIN INSULATORS, F NECK, 1” THREAD, 15KV. ANSI CLASS 55-4. NGK-LOCKE CAT #HRAP-175, PORCELAIN PRODUCTS PART #366-S OR RUS APPROVED EQ.

96 _____

I. TRANSFORMER MOUNTING BRACKET. CHANCE OR EQUIVALENT.

- 1. CHANCE CAT # DT6C1 3 more or less _____
- 2. CHANCE CAT # DT7C1 3 more or less _____

J. CONDUIT STANDOFF BRACKETS. MUST BE BANDABLE.

- 1. PELCO CAT. # SP-6060-12-PNC 12 _____
- 2. PELCO CAT. # SP-6060-24-PNC 12 _____
- 3. ALUMNA-FORM CAT. # 9-CSO-12 12 _____
- 4. ALUMNA-FORM CAT. #9-CSO-24 12 _____

K. CONDUIT STRAP KITS; CHANCE BRAND OR EQ.

- 1. CATALOG # CSTK-2; 2 INCH STRAP 50 _____
- 2. CATALOG # CSTK-3; 3 INCH STRAP 100 _____
- 3. CATALOG # CSTK-4; 4 INCH STRAP 20 _____
- 4. CATALOG # CSTK-6; 6 INCH STRAP 20 _____

L. GENERAL USE BRONZE CONNECTORS

- 1. ANDERSON/FARGO VISE TYPE GROUND CLAMP,
CAT # GC-207. 25 more or less _____
- 2. ANDERSON/FARGO BRONZE PARALLEL GROOVE CLAMP,
CAT # LC-1602 OR DOSSERT CU40-17. 25 more or less _____
- 3. ANDERSON/FARGO BRONZE TERMINAL, 2-HOLE FLAT TO CABLE.
1/0 – 500 MCM RANGE. CAT # SWL-050-B2 OR DOSSERT TCV50-2N. 25 more or less _____
- 4. ANDERSON/FARGO BRONZE TERMINAL WITH 90 DEGREE ANGLE,
2-HOLE FLAT TO CABLE. 1/0 – 500 MCM RANGE.
CAT # SWL-050-B2-Y90 OR DOSSERT TCVA50-2N-90. 12 more or less _____

M. ALUMINUM OVERHEAD LINE AUTOMATIC SPLICE, FULL TENSION, MACLEAN VIP OR HUBBELL SUREFIT ONLY.

1. 4 – 2 ACSR - MACLEAN #7652AP-VIP OR HPS GLSF4042A
25 _____
2. 1/0 ACSR - MACLEAN #7653-VIP OR HPS GLSF4076A
25 _____
3. 3/0 – 4/0 ACSR - MACLEAN #7656AP-VIP OR HPS GLSF4098
25 _____
4. 336.4 KCMIL ACSR - MACLEAN #7658AP-VIP OR HPS GLSF411
25 _____
5. 477 KCMIL ACSR - MACLEAN #7659-VIP OR HPS GLSF413
25 _____

N. AMPACT ALUMINUM TAPS FOR ACSR; AMPACT BRAND ONLY.

1. 795-795 #602121
25 _____
2. 795 – 336.4 #602121-6
25 _____
3. 477 – 477 #1-602031-3
25 _____
4. 477 – 336.4 #1-602031-4
25 _____
5. 477 – 4/0 #1-602031-6
25 _____
6. 477 – 1/0 #1-602031-9
25 _____
7. 336.4 – 336.4 #602007
25 _____
8. 336.4 – 4/0 #602004
25 _____
9. 336.4 – 1/0 #602001
25 _____
10. 336.4 – 2/0 #602002
25 _____
11. 336.4 – 1/0 COPPER #602001
25 _____
12. 4/0 – 4/0 #600466
25 _____
13. 4/0 – 1/0 #600458
25 _____

- 14. 1/0 – 1/0 # 600403 25 _____
- 15. 4/0 – #2 #600411 25 _____
- 16. SHELLS, YELLOW #69338-4 200 _____
- 17. SHELLS, BLUE #69338-1 200 _____

O. BURNDY DIELESS HYPRESS RANGE TAKING CONNECTORS AND ACCESSORIES

- 1. BURNDY HYLUG TYPE YA-A UNINSULATED COMPRESSION TERMINAL 2-HOLE RANGE TAKING CONNECTOR. BURNDY CATALOG # YA2CA9 ONLY.
25 more or less _____
- 2. BURNDY HYLUG TYPE YA-A UNINSULATED COMPRESSION TERMINAL 2-HOLE RANGE TAKING CONNECTOR. BURNDY CATALOG # YA28A5 ONLY.
25 more or less _____
- 3. BURNDY HYLUG TYPE YA-A UNINSULATED COMPRESSION TERMINAL 2-HOLE RANGE TAKING CONNECTOR. BURNDY CATALOG # YA34A3 ONLY.
25 more or less _____
- 4. BURNDY HYLUG TYPE YA-A UNINSULATED COMPRESSION TERMINAL 2-HOLE RANGE TAKING CONNECTOR. BURNDY CATALOG # YA39A5 ONLY.
25 more or less _____
- 5. BURNDY HYLUG TYPE YA-A UNINSULATED COMPRESSION TERMINAL 2-HOLE RANGE TAKING CONNECTOR. BURNDY CATALOG # YA44A3 ONLY.
25 more or less _____
- 6. BURNDY HYLINK UNINSULATED ALUMINUM COMPRESSION SPLICE RANGE TAKING CONNECTOR. BURNDY CATALOG # YS2CA1 ONLY.
25 more or less _____
- 7. BURNDY HYLINK UNINSULATED ALUMINUM COMPRESSION SPLICE RANGE TAKING CONNECTOR. BURNDY CATALOG # YS28A1 ONLY.
25 more or less _____

8. BURNDY HYLINK UNINSULATED ALUMINUM COMPRESSION
SPLICE RANGE TAKING CONNECTOR.
BURNDY CATALOG # YS34A1 ONLY.
25 more or less _____
9. BURNDY HYLINK UNINSULATED ALUMINUM COMPRESSION
SPLICE RANGE TAKING CONNECTOR.
BURNDY CATALOG # YS39A1 ONLY.
25 more or less _____
10. BURNDY HYLINK UNINSULATED ALUMINUM COMPRESSION
SPLICE RANGE TAKING CONNECTOR.
BURNDY CATALOG # YS44A1 ONLY.
25 more or less _____
11. BURNDY HYSTACK TERMINAL STACKING ADAPTOR FOR
ALUMINUM AND COPPER TERMINALS.
BURNDY CATALOG # ASA250U ONLY.
25 more or less _____
12. BURNDY HYSTACK TERMINAL STACKING ADAPTOR FOR
ALUMINUM AND COPPER TERMINALS.
BURNDY CATALOG # ASA800U ONLY.
25 more or less _____
13. BURNDY HYSTACK TERMINAL STACKING ADAPTOR FOR
ALUMINUM AND COPPER TERMINALS.
BURNDY CATALOG # ASA1000U ONLY.
25 more or less _____
14. BURNDY HYPLUG PIN TERMINALS FOR ALUMINUM AND COPPER
CONDUCTOR. BURNDY CATALOG # AYP2 ONLY.
25 more or less _____
15. BURNDY HYPLUG PIN TERMINALS FOR ALUMINUM AND COPPER
CONDUCTOR. BURNDY CATALOG # AYPO4/0 ONLY.
25 more or less _____
16. BURNDY HYPLUG PIN TERMINALS FOR ALUMINUM AND COPPER
CONDUCTOR. BURNDY CATALOG # AYPO500 ONLY.
25 more or less _____
17. BURNDY HYPLUG PIN TERMINALS FOR ALUMINUM AND COPPER
CONDUCTOR. BURNDY CATALOG # AYP750 ONLY.
25 more or less _____

- P. UNIVERSAL STUD MOUNT DISCONNECTABLE SECONDARY CONNECTOR, ACCEPTS BOTH 5/8" AND 1" TRANSFORMER STUDS, #12-350MCM CONDUCTOR, HOMAC PART #ZVW4023EZSL. HOMAC ONLY.
25 _____
- Q. POLE TOP PIN, 20 INCH, 1 INCH INSULATOR NYLON THREADS. JOSLYN CAT #J740Z, HUBBELL CAT #2199P, OR EQ.
25 _____
- R. RIDGE PIN (POLE TOP PIN), FIBERGLASS SHANK, 1 INCH INSULATOR. CHANCE CAT #RPH211 OR JOSLYN CAT # 7781-621 or EQ.
25 _____
- S. POLE BANDING SYSTEMS
1. ALUMNA-FORM BOLT-A-BAND STANDARD LENGTH SINGLE BAND, 5/8" HARDWARE, 72" LENGTH PART #BAB-5872 ONLY.
24 more or less _____
 2. ALUMNA-FORM BOLT-A-BAND STANDARD LENGTH DOUBLE BAND, 5/8" HARDWARE, 72" LENGTH PART #BAB-5872-2 ONLY.
24 more or less _____
- T. ALUMNA-FORM ALL PURPOSE MOUNTING BRACKET FOR USE WITH POLE BANDING SYSTEM, HEAVY-DUTY MOUNT WITH GRADE 5, 5/8" x 3" BOLT, ALUMNA-FORM PART #HDBB-1511-H3H ONLY.
24 more or less _____

III. GUY WIRE AND RELATED EQUIPMENT

A. FIBERGLASS GUY STRAIN INSULATOR 15,000 LB OR GREATER.

1. MACLEAN CAT # GCTE-15-144, HUBBELL #GS16144CP, OR ALUMNA FORM FGS21-144CT 25 more or less _____
2. MACLEAN CAT # GCTE-15-12, HUBBELL #GS16012CP, OR ALUMNA FORM FGS21-12CT 25 more or less _____

B. ANCHOR HELIX ASSEMBLY

1. SINGLE HELIX 10 INCH DIAMETER FOR $\frac{3}{4}$ INCH ROD, 1-3/8 INCH CORE. CHANCE CAT # E1021633 OR MACLEAN CAT # MDS-D104-6. 12 more or less _____
2. TWIN HELIX 10 INCH DIAMETER FOR $\frac{3}{4}$ INCH ROD, 1-3/8 INCH CORE. CHANCE CAT # E102163 OR MACLEAN CAT # MSDD104-2-6. 12 more or less _____
3. CHANCE PISA or EQUIVALENT, $\frac{3}{4}$ INCH X 7 FOOT ROD & TWINEYE NUT. CHANCE CAT # E1020044 OR MACLEAN CAT # MDS D75D. 25 more or less _____

C. BUST EXPANDING ANCHOR

1. CHANCE BUST EXPANDING ANCHOR, GALVANIZED. CAT # 88135G 6 more or less _____
2. CHANCE GALVANIZED BUST ANCHOR ROD $\frac{3}{4}$ INCH X 8 FT WITH TWINEYE ADAPTER. CAT # 5358. 12 more or less _____

D. GUY WIRE, GALVANIZED STEEL

1. 3/8 SIEMENS MARTIN GRADE, COILS 2000 FT. more or less _____
2. 7/16 HIGH STRENGTH GRADE, COILS 2000 FT. more or less _____

E. ALUMNA-FORM HEAVY DUTY BANDED GUY ATTACHMENT WITH CLEVIS PART #BGA-S20 ONLY.

24 more or less _____

IV. CONDUCTOR & COMMUNICATION CABLE. OVERHEAD SECONDARY, OVERHEAD PRIMARY, UNDERGROUND SECONDARY, UNDERGROUND PRIMARY, MISCELLANEOUS COPPER, & FIBER OPTIC CABLE.

- A. # 6 DUPLEX, SHEPHERD. 600 VOLT. 90 DEGREE C. CONTINUOUS OPERATION. PACKAGED IN COILS. Price per Ft. _____
- B. # 4 TRIPLEX, PERIWINKLE. 600 VOLT. 90 DEGREE C. CONTINUOUS OPERATION. PACKAGED IN COILS. Price per Ft. _____
- C. # 1/0 TRIPLEX, JANTHINA. 600 VOLT. 90 DEGREE C. CONTINUOUS OPERATION. PACKAGED IN COILS. Price per Ft. _____
- D. # 4/0 TRIPLEX, ZUZARA. 600 VOLT. 90 DEGREE C. CONTINUOUS OPERATION. PACKAGED ON REELS. Price per Ft. _____
- E. # 1/0 QUADRUPLEX, COSTENA. 600 VOLT. 90 DEGREE C. CONTINUOUS OPERATION. PACKAGED ON REELS. Price per Ft. _____
- F. # 4/0 QUADRUPLEX, APPALOOSA. 600 VOLT. 90 DEGREE C. CONTINUOUS OPERATION. PACKAGED ON REELS. Price per Ft. _____
- G. # 336 KCMIL QUADRUPLEX, GELDING. 600 VOLT. 90 DEGREE C. CONTINUOUS OPERATION. PACKAGED ON REELS. Price per Ft. _____
- H. # 2 ACSR, SPARROW. PACKAGED ON REELS. Price per Ft. _____
- I. # 1/0 ACSR, RAVEN. PACKAGED ON REELS. Price per Ft. _____
- J. # 4/0 ACSR, PENGUIN. PACKAGED ON REELS. Price per Ft. _____
- K. # 336.4 ACSR, MERLIN. PACKAGED ON STEEL REELS. Price per Ft. _____
- L. # 477 ACSR, PELICAN. PACKAGED ON STEEL REELS. Price per Ft. _____
- M. 3-LAYER 15KV ACSR TREE WIRE. 1/0 AWG, 6/1 STRANDING. SOUTHWIRE OR HENDRIX. PACKAGED ON REELS. BIDDER SHALL SPECIFY STANDARD REEL LENGTH. Price per Ft. _____

- N. SOUTHWIRE 3-LAYER 15KV ACSR TREE WIRE. 477 KCMIL AWG, 18/1 STRANDING.SOUTHWIRE OR HENDRIX. PACKAGED ON REELS. BIDDER SHALL SPECIFY STANDARD REEL LENGTH.
Price per Ft. _____
- O. # 6 UNDERGROUND DUPLEX, CLAFLIN. RUGGEDIZED OR HIGH SCORE. 90 DEGREE C. CONTINUOUS OPERATION. PACKAGED ON REELS.
Price per Ft. _____
- P. # 4 UNDERGROUND TRIPLEX, VASSAR. RUGGEDIZED OR HIGH SCORE. 90 DEGREE C. CONTINUOUS OPERATION. PACKAGED ON REELS.
Price per Ft. _____
- Q. # 4/0 UNDERGROUND TRIPLEX, SWEETBRIAR. RUGGEDIZED OR HIGH SCORE. 90 DEGREE C. CONTINUOUS OPERATION. PACKAGED ON REELS.
Price per Ft. _____
- R. SWEETBRIAR POWERGLIDE 600V SECONDARY UNDERGROUND HIGH SCORE TRIPLEX. DESIGNED FOR PUSH-IN OR PULL-IN INSTALLATION. 90 DEGREE C. CONTINUOUS OPERATION. 4/0 AWG ALUMINUM PHASE CONDUCTORS WITH 2/0 AWG NEURTAL CONDUCTOR. PACKAGED ON REELS. SOUTHWIRE OR EQUIVALENT.
Price per Ft. _____
- S. # 350 UNDERGROUND TRIPLEX, WESLEYAN. RUGGEDIZED OR HIGH SCORE. 90 DEGREE C. CONTINUOUS OPERATION. PACKAGED ON REELS.
Price per Ft. _____
- T. WESLEYAN POWERGLIDE 600V SECONDARY UNDERGROUND HIGH SCORE TRIPLEX. DESIGNED FOR PUSH-IN OR PULL-IN INSTALLATION. 90 DEGREE C. CONTINUOUS OPERATION. 350 KCMIL ALUMINUM PHASE CONDUCTORS WITH 4/0 AWG NEURTAL CONDUCTOR. PACKAGED ON REELS. SOUTHWIRE OR EQUIVALENT.
Price per Ft. _____
- U. # 4/0 UNDERGROUND QUADRUPLEX, WAKE FOREST. RUGGEDIZED OR HIGH SCORE. 90 DEGREE C. CONTINUOUS OPERATION. PACKAGED ON REELS.
Price per Ft. _____
- V. WAKE FOREST POWERGLIDE 600V SECONDARY UNDERGROUND HIGH SCORE QUADRUPLEX. DESIGNED FOR PUSH-IN OR PULL-IN INSTALLATION. 90 DEGREE C. CONTINUOUS OPERATION. 4/0 AWG ALUMINUM PHASE CONDUCTORS WITH 2/0 AWG NEURTAL CONDUCTOR. PACKAGED ON REELS. SOUTHWIRE OR EQUIVALENT.
Price per Ft. _____

- W. # 350 UNDERGROUND QUADUPLEX, SLIPPERY ROCK. RUGGEDIZED OR HIGH SCORE. 90 DEGREE C. CONTINUOUS OPERATION. PACKAGED ON REELS. Price per Ft. _____
- X. SLIPPERY ROCK POWERGLIDE 600V SECONDARY UNDERGROUND HIGH SCORE QUADRUPLEX. DESIGNED FOR PUSH-IN OR PULL-IN INSTALLATION. 90 DEGREE C. CONTINUOUS OPERATION. 350 KCMIL ALUMINUM PHASE CONDUCTORS WITH 4/0 AWG NEURTAL CONDUCTOR. PACKAGED ON REELS. SOUTHWIRE OR EQUIVALENT. Price per Ft. _____
- Y. UNDERGROUND RESIDENTIAL DISTRIBUTION CABLE (URD), CONCENTRIC NEUTRAL JACKETED 15 KV CLASS CABLE, 1/0 ALUMINUM CONDUCTOR, CLASS B FILLED STRAND, 220 MIL EPR INSULATION – ALL CABLE INSULATION MUST BE EPR INCLUDING THE INNER CONDUCTOR STRAND SCREEN AND THE OUTER INSULATION SCREEN, COPPER FULL NEUTRAL CONSISTING OF 16 #14 STRANDS, WITH INSULATING JACKET OVER CONCENTRIC WIRES. CABLE SHALL BE ALL EPR CONSTRUCTION. OKONITE OR KERITE ONLY. Price per Ft. _____
- Z. UNDERGROUND RESIDENTIAL DISTRIBUTION CABLE (URD), CONCENTRIC NEUTRAL JACKETED 15 KV CLASS CABLE, 750 KCMIL ALUMINUM CONDUCTOR, CLASS B FILLED STRAND, 220 MIL EPR INSULATION – ALL CABLE INSULATION MUST BE EPR INCLUDING THE INNER CONDUCTOR STRAND SCREEN AND THE OUTER INSULATION SCREEN, COPPER 1/3 NEUTRAL, WITH INSULATING JACKET OVER CONCENTRIC WIRES. CABLE SHALL BE ALL EPR CONSTRUCTION. OKONITE OR KERITE ONLY. Price per Ft. _____
- AA. UNDERGROUND RESIDENTIAL DISTRIBUTION CABLE (URD), CONCENTRIC NEUTRAL JACKETED 15 KV CLASS CABLE, 750 KCMIL ALUMINUM CONDUCTOR, CLASS B FILLED STRAND, 220 MIL EPR INSULATION, COPPER 1/3 NEUTRAL, WITH INSULATING JACKET OVER CONCENTRIC WIRES. CABLE SHALL BE ALL EPR CONSTRUCTION – ALL CABLE INSULATION MUST BE EPR INCLUDING THE INNER CONDUCTOR STRAND SCREEN AND THE OUTER INSULATION SCREEN. CABLE SHALL BE SHIPPED ON STEEL REELS. PRICE OF REEL SHALL BE INCLUDED IN WIRE PRICE. OKONITE, OR KERITE ONLY. Price per Ft. _____
- BB. # 6 SOFT DRAWN RISER WIRE, SOLID COPPER WIRE. PACKAGED ON SMALL SPOOLS. Price per Ft. _____

CC. # 4 BARE SOFT DRAWN, SOLID COPPER WIRE.

Price per Ft. _____

DD. # 6 BARE SOFT DRAWN, SOLID COPPER WIRE.

Price per Ft. _____

V. UNDERGROUND EQUIPMENT

- A. S&C VISTA UNDERGROUND SWITCHGEAR, MODEL 422, PAD MOUNTED STYLE, WITH TWO 3-PHASE LOAD-INTERRUPTER SWITCHES FOR SWITCHING TWO 600-AMP MAIN FEEDERS, ONE 600-AMP 3-PHASE FAULT INTERRUPTER FOR SWITCHING AND PROTECTION OF ONE 600-AMP 3-PHASE TAP AND ONE 200-AMP 3-PHASE FAULT INTERRUPTER FOR SWITCHING AND PROTECTION OF ONE 200-AMP 3-PHASE TAP. ALL COMPONENTS OF THE SWITCHGEAR UNIT SHALL BE ELBOW CONNECTED AND SHALL BE ENCLOSED IN A WELDED STEEL TANK AND WEATHER RESISTANT PAD MOUNTED STYLE STEEL ENCLOSURE. S&C CATALOG NUMBER 934222R1-P4T2-S313. S&C ONLY. 1 more or less _____

- B. S&C VISTA UNDERGROUND SWITCHGEAR, MODEL 523, PAD MOUNTED STYLE, WITH TWO 3-PHASE LOAD-INTERRUPTER SWITCHES FOR SWITCHING TWO 600-AMP MAIN FEEDERS, ONE 600-AMP 3-PHASE FAULT INTERRUPTER FOR SWITCHING AND PROTECTION OF ONE 600-AMP 3-PHASE TAP AND TWO 200-AMP 3-PHASE FAULT INTERRUPTER FOR SWITCHING AND PROTECTION OF TWO 200-AMP 3-PHASE TAPS. ALL COMPONENTS OF THE SWITCHGEAR UNIT SHALL BE ELBOW CONNECTED AND SHALL BE ENCLOSED IN A WELDED STEEL TANK AND WEATHER RESISTANT PAD MOUNTED STYLE STEEL ENCLOSURE. S&C CATALOG NUMBER 935232R1-P6T3-S192. S&C ONLY. 1 more or less _____

- C. LOAD BREAK BUSHING INSERT, 200 AMP, 15 KV CLASS, COOPER LBI 215 OR ELASTIMOLD 1601A4. 15 more or less _____

- D. LOADBREAK ELBOW CONNECTOR WITH JACKET SEAL, 200 AMP, 15 KV CLASS, WITH CAPACITIVE TEST POINT, 1/0 STRANDED CONDUCTOR. COOPER LEJ215CC06T. ONLY. 25 more or less _____

- E. HORIZONTAL LOAD BREAK PORTABLE FEEDTHRU, 200 AMP, 15 KV CLASS. COOPER LPF215H OR ELASTIMOLD 164FT. 25 more or less _____

- F. ROTATABLE LOADBREAK FEEDTHRU INSERT, 200 AMP, 15 KV CLASS. COOPER LFI215 or ELASTIMOLD 1602A3R. 12 more or less _____

- G. INSULATED PROTECTIVE CAP, 15 KV CLASS. COOPER LPC215 OR ELASTIMOLD 160DRG. 50 more or less _____

- H. 900 AMP BOL-T DEADBREAK CONNECTOR, 25 KV CLASS, 750 KCMIL ALUMINUM CONDUCTOR, WITH COPPERTOP COMPRESSION CONNECTORS. PART NUMBER COOPER BT625FF25C1 OR ELASTIMOLD K675LR-M5380. 6 more or less _____
- I. 600 AMP LOADBREAK REDUCING TAP PLUG FOR USE WITH BOL-T, 25 KV CLASS, WITH COPPER STUD IN INDIVIDUAL BOX. PART NUMBER BLRTP625C. or K675RTP. 6 more or less _____
- J. POLYWATER TYPE HP MULTIPURPOSE CLEANER/DEGREASER, 16 OZ. AEROSOL CAN. CAT # HPY-12. 24 more or less _____
- K. POLYWATER CABLE LUBRICANT J640 OR EQ. IN 5 GALLON PAILS. 6 more or less _____
- L. POLYWATER CABLE LUBRICANT J. ONE QUART FRONT END PACK PACKAGED 12 PER CASE. CATALOG # J-27. 6 cases more or less _____
- M. URD CABLE TERMINATION, COLD APPLIED, JACKETED CONCENTRIC NEUTRAL CABLE, RAYCHEM ONLY.
1. RAYCHEM 841360 – 000 TFT-151E – 1/0 25 more or less _____
 2. RAYCHEM 050920 – 000 TFT-153E 25 more or less _____
- N. URD CABLE SPLICE, JACKETED CONCENTRIC NEUTRAL CABLE, RAYCHEM ONLY.
1. 1/0 URD PRIMARY HEAT SHRINK SPLICE WITHOUT CONNECTOR. PART # HVSC-1511S-J. 25 more or less _____
 2. 750 KCMIL PRIMARY HEAT SHRINK SPLICE WITHOUT CONNECTOR. PART # HVSC-1514S-J. 25 more or less _____
- O. LOADBREAK JUNCTION, 200 AMP, 15 KV CLASS, COOPER CAT# LJ215C4U OR ELASTIMOLD 164J4-5. 6 more or less _____
- P. FIBERGLASS SECONDARY PEDESTAL WITH 350 KCMIL CONNECTORS; PENCELL ONLY. PENCELL CATALOG # AG18HDX-L35. 6 more or less _____

- Q. FIBERGLASS BOX PADS FOR SINGLE PHASE TRANSFORMERS;
NORDIC CATALOG # CBP-37-43-15A-MG-22X24
6 more or less _____
- R. FIBERCRETE BOX PAD 94 " x 80" FOR USE WITH S&C 4-WAY VISTA
SWITCHGEAR. CONCAST PART #FC-69-83-36-V. CONCAST ONLY.
1 more or less _____
- S. FIBERCRETE BOX PAD 117 " x 80" FOR USE WITH S&C 5-WAY VISTA
SWITCHGEAR. CONCAST PART #FC-69-106-36-V. CONCAST ONLY.
1 more or less _____
- T. FIBERCRETE BOX PAD WITH 6" X 53" OPENING FOR USE WITH 3
PHASE SECTIONALIZING CABINET. CONCAST PART #FC-18-65-20-0653.
CONCAST ONLY. 6 more or less _____
- U. FIBERCRETE BOX PAD WITH 18" X 80" OPENING FOR USE WITH 3
PHASE SECTIONALIZING CABINET. CONCAST PART #FC-23-85-32-1880.
CONCAST ONLY. 6 more or less _____
- V. SECTIONALIZING CABINET, 3-PHASE, 200 AMP, 15 KV CLASS, MILD
STEEL, WITH THREE 4-POSITION 200 AMP LOADBREAK JUNCTIONS
INSTALLED. HOWARD INDUSTRIES CAT# 4560-227470-200. HOWARD
INDUSTRIES ONLY. 6 more or less _____
- W. SECTIONALIZING CABINET, 3-PHASE, 200 AMP, 15 KV CLASS, MILD
STEEL, WITHOUT LOADBREAK JUNCTIONS INSTALLED. HOWARD
INDUSTRIES CAT#4584-227470-400. HOWARD INDUSTRIES ONLY.
6 more or less _____
- X. SECTIONALIZING CABINET, 1-PHASE, 200 AMP, 15 KV CLASS, MILD
STEEL, WITH ONE 4-POSITION 200 AMP LOADBREAK JUNCTION
INSTALLED. HOWARD INDUSTRIES CAT # 4530-227470-200. PRICE OF
CABINET TO INCLUDE MILD STEEL MOUNTING PLATE PART # 0062-
189904-001. HOWARD INDUSTRIES ONLY.
6 more or less _____
- Y. HIGH DENSITY POLYETHYLENE CONDUIT, 2 INCH NOMINAL SIZE,
2.375 INCH OUTSIDE DIAMETER WITH 13.5 SDR, BLACK WITH RED
TRISTRIPLE, 40 FOOT LENGTHS, SMOOTH WALL.
5, 000 FT. more or less _____

- Z. HIGH DENSITY POLYETHYLENE CONDUIT, 3 INCH NOMINAL SIZE, 3.5 INCH OUTSIDE DIAMETER WITH 13.5 SDR, BLACK WITH RED TRISTRIPLE, 40 FOOT LENGTHS, SMOOTH WALL.
5, 000 FT. more or less _____
- AA. SCHEDULE 40 PVC CONDUIT, 2 INCH, 20 FOOT SECTIONS.
500 FT. more or less _____
- BB. SCHEDULE 40 PVC CONDUIT, 3 INCH, 20 FOOT SECTIONS.
500 FT. more or less _____
- CC. CHAMPION FIBERGLASS, 90 DEGREE X 36 INCH ELBOW, 3 INCH NOMINAL, 3.5 INCH O.D., WITH DEEP SOCKET PVC COUPLINGS BONDED TO EACH END. CHAMPION FIBERGLASS PART #30A-SW-92-P-2D 100 more or less _____
- DD. CHAMPION FIBERGLASS, 90 DEGREE X 24 INCH ELBOW, 2 INCH NOMINAL, 2.375 INCH O.D., WITH DEEP SOCKET PVC COUPLINGS BONDED TO EACH ENC. CHAMPION FIBERGLASS PART #20A-SW-91-P-2D 100 more or less _____
- EE. BONDUIT CONDUIT ADHESIVE KIT WITH DISPENSING TOOL. KIT CONTAINS 2 ADHESIVE CARTRIDGES, 8 MIXING NOZZLES, 1 STRIP OF SANDING CLOTH, 8 TR-1 CLEANING WIPES, AND 1 DESPENSING TOOL. BONDUIT CATALOG # BT-KITG OR EQ.
4 more or less _____
- FF. READY-MIXED CONCRETE, CONSISTING OF PORTLAND CEMENT, FINE AND COARSE AGGREGATE, WATER, AND APPROVED ADMIXTURES, COMBINED, MIXED, TRANSPORTED AND PLACED AT THE OWNER'S JOB SITE, INCLUDING FURNISHING LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS AS REQUIRED TO PROVIDE CONCRETE TO THE SED JOB SITES INSIDE THE CITY LIMITS OF STARKVILLE. CONCRETE MIX SHALL HAVE A MINIMUM SPECIFIED 28-DAY COMPRESSIVE STRENGTH OF 3,500 PSI AND A WATER-CEMENT RATIO BY WEIGHT OF 0.50 TO 0.60. PROPORTION AND DESIGN MIXES TO RESULT IN CONCRETE SLUMP AT THE POINT OF PLACEMENT AS DIRECTED BY THE OWNER. SLUMP AT THE POINT OF PLACEMENT SHALL BE 4 INCHES TO 6 INCHES FOR CONCRETE THAT IS TO BE MECHANICALLY VIBRATED, AND 5 INCHES TO 7 INCHES FOR CONCRETE THAT IS TO BE PLACED WITHOUT CONSOLIDATION. SUPPLIER SHALL COMPLY WITH THE REQUIREMENTS OF ASTM C94 "STANDARD SPECIFICATION FOR READY-MIXED CONCRETE".
Price per cubic yard _____

- GG. 3M, TYPE MB-3 CROSS-ARM MOUNTING BRACKET FOR URD CABLE
RANGE 0.80-1.25 INCH. 10 more or less _____
- HH. 3M, TYPE MB-6 CROSS-ARM MOUNTING BRACKET FOR URD CABLE
RANGE 1.80-2.40 INCH. 10 more or less _____
- II. DITCH WITCH BORE GEL BENTONITE. 50 # BAGS.
192 bags more or less _____
- JJ. DITCH WITCH EZ MUD. 5 GALLON PAILS.
20 gallons more or less _____
- KK. DITCH WITCH CON DET WETTING AGENT. 5 GALLON PAILS.
50 gallons more or less _____

VI. PROTECTIVE EQUIPMENT AND CAPACITOR EQUIPMENT

A. S & C POSITROL UNIVERSAL STYLE FUSE LINKS “QR” SPEED

- 1. 1 AMP 100 more or less _____
- 2. 3 AMP 100 more or less _____
- 3. 5 AMP 100 more or less _____
- 4. 7 AMP 100 more or less _____
- 5. 10 AMP 100 more or less _____
- 6. 15 AMP 100 more or less _____
- 7. 20 AMP 100 more or less _____
- 8. 25 AMP 100 more or less _____
- 9. 30 AMP 100 more or less _____
- 10. 40 AMP 100 more or less _____
- 11. 50 AMP 100 more or less _____
- 12. 60 AMP 100 more or less _____
- 13. 75 AMP 100 more or less _____
- 14. 100 AMP 50 more or less _____
- 15. 125 AMP 50 more or less _____
- 16. 150 AMP 50 more or less _____

B. COOPER POWER SYSTEMS REMOVABLE BUTTONHEAD “D” LINK FUSE. CATALOG NUMBER IS FL3D_. THE FUSE AMP RATING IS INSERTED AT THE UNDERScore.

- 1. 1 AMP 100 more or less _____
- 2. 2 AMP 100 more or less _____
- 3. 3 AMP 100 more or less _____
- 4. 5 AMP 100 more or less _____
- 5. 7 AMP 100 more or less _____
- 6. 10 AMP 100 more or less _____
- 7. 15 AMP 100 more or less _____
- 8. 20 AMP 100 more or less _____

C. COOPER POWER SYSTEMS COMPANION II BACKUP CURRENT-LIMITING FUSE, 8.3 KV, 25k CURRENT RATING WITH SPLINE STUD AND EYEBOLT TERMINAL. COOPER CATALOG NUMBER FAH8KV25KBGR1. COOPER ONLY.

12 more or less _____

- D. LOADBUSTER DISCONNECT, 25 KV, 600 AMP CONTINUOUS.
S & C CATALOG NUMBER 4943R9ED2.
48 more or less _____
- E. FUSE CUTOUT, 15 KV, 100 AMP CONTINUOUS, 16,000 AMP
ASYMMETRICAL INTERRUPTING, PARALLEL-GROOVE CONNECTORS
AND EXTENDED MOUNTING BRACKET. BODY MUST BE SILICONE
RUBBER – NO EPDM. ALUMA-FORM CSG-15-100A-110-CX-16KA OR
ABB X1JCLNLM11 OR S&C EQ OR COOPER EQ.
48 more or less _____
- F. FUSE TUBE INCLUDING CAP AND ARC SHORTENING ROD, 14.4 KV, 100
AMP, S & C CATALOG NUMBER 89531R10 OR ABB 7194C60G02MP OR
COOPER EQ OR ALUMA-FORM CFH15-100-16KA.
2 more or less _____
- G. FUSE TUBE, 14.4 KV, 200 AMP, 16 KA INTERRUPTING.
S & C CATALOG NUMBER 89571R11 or ABB 7194C60G19 OR COOPER EQ
12 more or less _____
- H. SPARE DISCONNECT BLADE, 14.4 KV, 300 AMP,
S & C CATALOG NUMBER 89621R10 or ABB 7194C60G04 or
ALUMAFORM CSB15-300A. 12 more or less _____
- I. LOAD BREAK CUTOUT, 15/27 KV, 100 AMP CONTINUOUS, PORCELAIN,
ABB CATALOG NUMBER Y2NCBNQA12. ABB ONLY.
12 more or less _____
- J. LOAD BREAK CUTOUT, 15/27 KV, 100 AMP CONTINUOUS, SILICONE
RUBBER, EXTENDED BRACKET, ABB CATALOG NUMBER
Y2JCLNQA12. ABB ONLY. 12 more or less _____
- K. ELBOW SURGE ARRESTER, 10 KV, 8.4 KV MCOV, 36 IN. LEAD WIRE.
COOPER 3238018C10M OR OHIO BRASS 6115090036 OR ELASTIMOLD
215ELA10. 50 more or less _____
- L. PARKING STAND SURGE ARRESTER, 10 KV, 8.4 KV MCOV.
COOPER 3237686C10M or ELASTIMOLD 167PSA10.
10 more or less _____
- M. HEAVY DUTY DISTRIBUTION CLASS ARRESTER, 10 KV, 8.4 KV MCOV.
WITH ISOLATOR, WILDLIFE PROTECTOR AND NEMA XARM
BRACKET. COOPER UHS1005 – 0A1A – 1B1A OR OHIO BRASS 213709 –
7324 ONLY. 50 more or less _____

- N. HUBBELL PROTECTA LITE SUSPENSION DISTRIBUTION CLASS ARRESTER, 13.8 KV, 8.4 KV MCOV WITH FARGO HOT LINE CLAMP GH-202AD SUITABLE FOR 4/0-795 KCMIL AND 90.0 INCH #4 AWG TINNED COPPER ROPE LAY CONDUCTOR LEAD. HUBBELL CATALOG #602009-B0-X4-005 ONLY. 50 more or less _____
- O. 3-PHASE AIR-BREAK SWITCH, 25 KV, 600 AMP, INSULATED BASE, EPOXY INSULATORS, 2-HOLE NEMA PAD, UPRIGHT HOOKSTICK OPERATED WITH EXTRA MOUNTING POLE CLEARANCE AND LIGHTNING ARRESTER MOUNTING. S & C OMNI-RUPTER CAT # 147443R4-H-A2P1 2 more or less _____
- P. 3-PHASE AIR-BREAK SWITCH, 15 KV, 600 AMP, INSULATED BASE, EPOXY INSULATORS, 2-HOLE NEMA PAD, VERTICAL HOOKSTICK OPERATED. S & C OMNI-RUPTER CAT # 147532R4-H . 1 more or less _____
- Q. 3-PHASE AIR-BREAK SWITCH, 14.4 KV, 900 AMP, INSULATED BASE, EPOXY INSULATORS, 2-HOLE NEMA PAD, TIERED OUTBOARD HOOKSTICK OPERATED WITH POLE BANK AND J-BOLTS. S & C OMNI-RUPTER CAT # 147832R4-H2-P1. 1 more or less _____
- R. NEW THREE PHASE RECLOSER, 800 AMP CONTINUOUS, 12.5 KA INTERRUPTING, SOLID DIELECTRIC, 15KV CLASS VACUUM RECLOSER WITH SEL 651RA CONTROL. 14 PIN CONTROL CABLE, EQUIPPED WITH 3 LOW ENERGY ANALOG VOLTAGE SENSORS, RECLOSER OUTFITTED WITH 2 HOLE PADS, "L" SHAPED POLE MOUNT CENTER BRACKET, LIGHTNING ARRESTER BRACKETS AND 40 FT 14-PIN CONTROL CABLE, 40 FT 2-PIN AC CABLE AND 8-PIN LEA CABLE. G&W ELECTRIC VIP378ER-12S ONLY. SEL PART # 0651RA01XBAXAE1A3311BXXX 1 more or less _____
- S. SCHWEITZER ENGINEERING LABORATORIES, INC., SEL-651RA RECLOSER CONTROL FOR USE WITH G&W VIPER. PART NUMBER 0651RA01XBAXAE1A3311BXXX. SCHWEITZER ENGINEERING LABORATORIES, INC. ONLY. 1 more or less _____
- T. SCHWEITZER ENGINEERING LABORATORIES, INC., SEL-C510. 40 FT. RECLOSER 14 PIN CONTROL CABLE, 14-PIN MALE TO FEMALE AMPHENOL CONNECTOR. 1 more or less _____

U. SCHWEITZER ENGINEERING LABORATORIES, INC., OVERHEAD
AUTORANGER FAULTED CIRCUIT INDICATOR WITH 4 HOUR
PERMANANT FAULT RESET TIME AND 16 HOUR TEMPORARY FAULT
RESET TIME. SEL PART# AR360-4-16.

3 more or less _____

V. SCHWEITZER ENGINEERING LABORATORIES, INC., UNDERGROUND
AUTORANGER FAULTED CIRCUIT INDICATOR WITH 4 HOUR
PERMANANT FAULT RESET TIME. NO BATTERY WITH INTEGRAL
DISPLAY. SEL PART# 1ARUI4Y2.

3 more or less _____

W. SCHWEITZER ENGINEERING LABORATORIES, INC., UNDERGROUND
AUTORANGER FAULTED CIRCUIT INDICATOR WITH 4 HOUR
PERMANANT FAULT RESET TIME. WITH BATTERY AND 10 FT
REMOTE FIBER OPTIC DISPLAY. SEL PART# 1BARUZR4LEY2.

3 more or less _____

X. NEW G&W VIPER-SP SOLID DIELECTRIC, SINGLE PHASE RECLOSER,
15.5 KV CLASS, POLEMOUNT "L" CONFIGURATION, ALUMINUM
BRACKET WITH ARRESTER PROVISIONS ON THE LOAD AND SOURCE
SIDE. UNIT SHALL BE SUPPLIED WITH NEMA 2-HOLE AERIAL LUGS
AND HIGH IMPACT, UV STABLE WILDLIFE PROTECTORS FOR SOURCE
AND LOAD INSULATORS. UNIT SHALL BE SUPPLIED WITH
SCHWEITZER SEL-351RS KESTREL CONTROL AND 40 FT CONTROL
CABLE. G&W VIP178ER-12-SP WITH SEL PART
#0351RS022XB1E11X1XXX ONLY.

1 more or less _____

Y. CHANCE LOADBREAK ELECTRONIC RESETTABLE SECTIONALIZER,
15 KV, 50 AMP CONTINUOUS, 2-COUNT, PARALLEL GROOVE CLAMPS,
NEMA BRACKET. CHANCE ONLY.

CHANCE CAT# C750-152PB. 6 more or less _____

Z. CHANCE LOADBREAK ELECTRONIC RESETTABLE SECTIONALIZER,
15 KV, 70 AMP CONTINUOUS, 2-COUNT, PARALLEL GROOVE CLAMPS,
NEMA BRACKET. CHANCE ONLY.

CHANCE CAT # C750-162PB. 6 more or less _____

AA. CAPACITOR, 50 KVAR, 7620V, SINGLE PHASE, 2-BUSHING, 60 HZ, 95
KV BIL.

6 more or less _____

BB. CAPACITOR, 100 KVAR, 7620V, SINGLE PHASE, 2-BUSHING, 60 HZ, 95
KV BIL.

6 more or less _____

CC. CAPACITOR, 200 KVAR, 7620V, SINGLE PHASE, 2-BUSHING, 60 HZ, 95
KV BIL.

6 more or less _____

- DD. CAPACITOR, 300 KVAR, 7620V, SINGLE PHASE, 2-BUSHING, 60 HZ, 95 KV BIL
6 more or less _____
- EE. VACUUM CAPACITOR SWITCH, TYPE VCS-1, 95 KV BIL, 200 AMP CONTINUOUS, 120 VAC OPERATING VOLTAGE, STANDARD 5-PIN RECEPTACLE FOR 3-WIRE CONTROL, WITH MATCHING PLUG PREWIRED WITH PIGTAIL, WITH BIRDCUARDS. ABB OR COOPER(EDISON). ABB PS15-1AMBC-2121S OR EDISON ECSA111BA1.
3 more or less _____
- FF. SCHWEITZER ENGINEERING LABORATORIES, INC., 3530 RTAC AUTOMATION CONTROLLER, HORIZONTAL RACK MOUNT, 125/250 VAC, TWO 10/100BASE-T REAR ETHERNET PORTS, BASIC HMI RUN-TIME LICENSE, SEL PROTOCOLS. SEL MODEL 35304BA0X1211X0XXXXXX. SEL ONLY.
1 unit _____
- GG. SCHWEITZER ENGINEERING LABORATORIES, INC., 3530 RTAC AUTOMATION CONTROLLER, 3U HORIZONTAL RACK, 125/250 VDC, TWO 10/100BASE-T REAR ETHERNET PORTS, NOI/O BOARD, WEB HUMAN MACHINE INTERFACE (HMI), SEL PROTOCOLS, 33 EIA 232/EIA-485 SERIAL PORTS. SEL MODEL 3530HA0X1211A0XXXXXX. SEL ONLY.
1 unit _____
- HH. SCHWEITZER ENGINEERING LABORATORIES, INC., SEL-734B DISTRIBUTION CAPACITOR BANK CONTROLLER FOR 6 JAW METER BASE. 1 LOAD PROFILE RECORDER, 12" X 10" OUTDOOR COMPACT ENCLOSURE, FOUR WIRE WYE, 125 VAC POWER SUPPLY, 125 VAC CONTROL VOLTAGE, 57-120 VOLT METERING INPUT, 10VAC CURRENT CLASS, CONFORMAL COATED BOARDS, 60 HZ, TWO EIA-232 PORTS AND ONE 10/100 BASE-T ETHERNET PORT, 2 ELECTROMECHANICAL 30 AMP CONTACT OUTPUTS, 4 DIGITAL INPUTS, 125 VAC CONTROL INPUT VOLTAGE FOR EXPANSION SLOT 2, DNP3 LEVEL 2 SLAVE SERIAL AND LAN/WAN COMMUNICATIONS PROTOCOL, 6-JAW SOCKET BASE, FRONT ACCESS TO SERIAL AND ETHERNET PORTS. SEL MODEL 07340T9F1D1626EXXAD3AA000 WITH SPECIAL SPEC. SEL ONLY.
1-5 unit _____

II. BECKWITH ELECTRIC COMPANY A-6280A-STRK1 CAPACITOR CONTROL CONSISTING OF THE FOLLOWING: MODEL M-6280A-6EL220BC0 CAPACITOR CONTROL (60 HZ, ENGLISH, VAR/CURR W/VO 0-10V LPD, NEUTRAL INPUT 200 MA SECONDARY, RS-232, BLUETOOTH, RJ45 COPPER ETHERNET) AND MODEL M-2980A-MM05B60YX CABINET ASSEMBLY (NEMA 4X MOLDED LEXAN, M05 POLE MOUNT WITH 5 FT CABLED METER PLUG, BOTTOM INTERFACE HOLE, OPTION 61 WIRING, NO RADIO OPTIONS, HOLE AND CORD CLAMP FOR ETHERNET CABLE, B-1311 3 PIN CANNON CONNECTOR WHICH MATES WITH B1312-45 AND B-1399 EXTERNAL TEMPERATURE SENSOR).

6 more or less _____

JJ. BECKWITH ELECTRIC COMPANY A-6280A-STRK1 CAPACITOR CONTROL CONSISTING OF THE FOLLOWING: MODEL M-6280A-6EL220BF0 CAPACITOR CONTROL (60 HZ, ENGLISH, VAR/CURR W/VO 0-10V LPD, NEUTRAL INPUT 200 MA SECONDARY, RS-232, BLUETOOTH, FIBER ETHERNET WITH ST CONNECTOR) AND MODEL M-2980A-MM05B60YX CABINET ASSEMBLY (NEMA 4X MOLDED LEXAN, M05 POLE MOUNT WITH 5 FT CABLED METER PLUG, BOTTOM INTERFACE HOLE, OPTION 61 WIRING, NO RADIO OPTIONS, HOLE AND CORD CLAMP FOR ETHERNET CABLE, B-1311 3 PIN CANNON CONNECTOR WHICH MATES WITH B1312-45 AND B-1399 EXTERNAL TEMPERATURE SENSOR).

6 more or less _____

KK. BECKWITH ELECTRIC COMPANY MODEL B-1312-45 NEUTRAL CURRENT CT 5:0.2 AMP WITH 45 FT CABLE AND 3 PIN CANNON CONNECTOR.

6 more or less _____

LL. S&C CS LINE POST CURRENT SENSOR. 14.4 kV. S&C ONLY. CAT # 904-001124-00

4 more or less _____

MM. S&C SENSOR CABLE, JUNCTION BOX TO CURRENT SENSOR, 20 FT, END ONE CONNECTOR = NONE, END TWO CONNECTOR = 2-PIN. S&C ONLY. CAT # 007-000767-03

4 more or less _____

NN. FUSING TAPE. MIDSUN GROUP ONLY.

1. E/FTP-100G 10 more or less _____

2. E/FTP-250G 10 more or less _____

OO. SILICON RUBBER SPLIT LINE HOSE. MIDSUN GROUP ONLY.

- 1. E/INS-025 50 FT _____
- 2. E/INS-050 50 FT _____
- 3. E/INS-075 50 FT _____
- 4. E/INS-100 50 FT _____

PP. MOLDED BUSHING PRODUCTS. MIDSUN GROUP ONLY.

- 1. E/BUSH CV-LGE 10 more or less _____
- 2. E/BUSH CV-FULL 10 more or less _____
- 3. E/BUSH CV-SMALL 10 more or less _____

QQ. ENERGIZED BARRIER. MIDSUN E/FLEX BARRIER, 20" WIDE, GRAY.
MIDSUN GROUP ONLY. PART #E/FLEX BAR-EN-20" GRAY.
100 more or less _____

RR. DISTRIBUTION WILDLIFE COVERS. MIDSUN ONLY.

- 1. E/CAPACITOR COVER 25 more or less _____
- 2. E/DL-LA-RECLOSER COVER 25 more or less _____
- 3. E/POLE TOP LIGHTING ARRESTOR CAP
25 more or less _____

VII. METERING EQUIPMENT

A. METERS – HONEYWELL-ELSTER REXU, SOLID-STATE, ELECTRONIC WATTHOUR METERS, WITH “SED” NUMBERS IN SEQUENCE WITH METERS ALREADY SUPPLIED TO STARKVILLE AND “STARKVILLE ELECTRIC DEPT” ON NAMEPLATE FOR USE WITH STARKVILLE’S ELSTER AMI SYSTEM. ELSTER ONLY.

1. HONEYWELL-ELSTER ENERGYAXIS REXU, FORM 1S, CLASS 200, 120 VOLT, WITH SERVICE DISCONNECT, WITH YELLOW NAMEPLATE, CATALOG NUMBER: ZHA33A00004.
8 ± _____
2. HONEYWELL-ELSTER ENERGYAXIS REXU, FORM 2S, CLASS 200, 240 VOLT, WITH SERVICE DISCONNECT, WITH NO TEST LINKS AND WHITE NAMEPLATE, CATALOG NUMBER: ZHCW4A00004.
32 ± _____
3. HONEYWELL-ELSTER ENERGYAXIS REXU, FORM 2S, CLASS 320, 240 VOLT, NO TEST LINKS, WITH YELLOW NAMEPLATE, CATALOG NUMBER: ZHCY4000004.
16 ± _____
4. HONEYWELL-ELSTER ENERGYAXIS REXU PROGRAMMED FOR SED SOLAR PROGRAM, FORM 2S, CLASS 200, 240 VOLT, WITH SERVICE DISCONNECT, WITH NO TEST LINKS AND GREEN NAMEPLATE, CATALOG NUMBER: ZHCW4A00004.
4 ± _____
5. HONEYWELL-ELSTER ENERGYAXIS REXU, FORM 12S, CLASS 200, 120 VOLT, WITH SERVICE DISCONNECT, WITH NO TEST LINKS AND YELLOW NAMEPLATE, CATALOG NUMBER: ZH5W3A00004.
32 ± _____
6. HONEYWELL-ELSTER ENERGYAXIS REXU, FORM 12S, CLASS 320, 120V, NO TEST LINKS, WITH YELLOW NAMEPLATE, CATALOG NUMBER: ZH5Y3000004.
4 ± _____
7. HONEYWELL-ELSTER ENERGYAXIS REXU, FORM 4S, CLASS 20, 240V, WITH YELLOW NAMEPLATE, CATALOG NUMBER: ZHC24000004.
4 ± _____

B. METERS – ELSTER A3, SOLID-STATE, ELECTRONIC WATTHOUR METERS, WITH “SED” NUMBERS IN SEQUENCE WITH METERS ALREADY SUPPLIED TO STARKVILLE AND “STARKVILLE ELECTRIC DEPT” ON NAMEPLATE FOR USE WITH STARKVILLE’S ELSTER AMI SYSTEM. ELSTER ONLY.

1. ELSTER ENERGYAXIS ALPHA A3RALNQ, FORM 16S, CLASS 320, 128K MEMORY, 120 – 480 VOLT, WITH WHITE NAMEPLATE, CATALOG NUMBER: ZD3410P80LM. 12 ± _____
2. ELSTER ENERGYAXIS ALPHA A3RALNQ, FORM 9S, CLASS 20, 128K MEMORY, 120 – 480 VOLT, WITH WHITE NAMEPLATE, CATALOG NUMBER: ZD3210P80LM. 12 ± _____
3. ELSTER ENERGYAXIS ALPHA A3RALNQ, FORM 9S, CLASS 20, 128K MEMORY, 120 – 480 VOLT, 2 RELAYS TO CABLE (kyz) WITH YELLOW NAMEPLATE, CATALOG NUMBER: ZD3213P80LM. 4 ± _____
4. ELSTER ENERGYAXIS ALPHA A3RALNQ, FORM 9S, CLASS 20, 128K MEMORY, 120 – 480 VOLT, ANSI C12.21 PROTOCOL ETHERNET COMMUNICATIONS, WITH YELLOW NAMEPLATE, CATALOG NUMBER: ZD3210T60LM. 4 ± _____
5. ELSTER ENERGYAXIS ALPHA A3RALNQ, FORM 35S, CLASS 20, 128K MEMORY, 120 – 480 VOLT, WITH YELLOW NAMEPLATE, CATALOG NUMBER: ZD2210P80LM. 4 ± _____
6. ELSTER ENERGYAXIS ALPHA A3RALNQ, FORM 3S, SINGLE PHASE, CLASS 20, 128K MEMORY, 120 VOLT, WITH YELLOW NAMEPLATE, CATALOG NUMBER: ZDA210P80LM. 4 ± _____

C. METER BASE – “K” BASE. (SIEMENS ONLY)

1. K4UT, SINGLE-PHASE WITH LUGS
CATALOG NUMBER: 9810-9546 6 _____
2. K7T, THREE-PHASE WITH LUGS
CATALOG NUMBER: 9817-9506 6 _____

D. CURRENT TRANSFORMERS – SECONDARY PADMOUNT
TRANSFORMER TYPE

1. 200:5 RATIO, RATING FACTOR 4.0 AT 85C, 0.3 ACCURACY CLASS
AT 0.1 OHMS BURDEN. ABB TYPE CMV HI-TEMP OR G.E. JAC-OCV.
ABB STYLE NO. 923A231G01 or G.E. CAT NO. 750X236202
6 more or less _____
2. 500:5 RATIO, RATING FACTOR 4.0 AT 85C, 0.3 ACCURACY CLASS
AT 0.5 OHMS BURDEN. G.E. ENCOMPASS CURRENT SENSOR
MODEL JAB-OW. G.E. CAT NO. 750X136464
6 more or less _____
3. 1000:5 RATIO, RATING FACTOR 2.0 AT 85C, 0.15 ACCURACY CLASS
AT 0.5 OHMS BURDEN, ABB CMV-S.
ABB STYLE NO. 923A498G02 3 more or less _____
4. 1500:5 RATIO, RATING FACTOR 2.0 AT 85C, 0.3 ACCURACY CLASS
AT 0.5 OHMS BURDEN. G.E. ENCOMPASS CURRENT SENSOR
MODEL JAB-OW
G.E. CAT NO. 750X136463 3 more or less _____

E. SECONDARY OUTDOOR CURRENT TRANSFORMER

1. 250:5 RATIO, RATING FACTOR 4.0 AT 30C, 0.3 ACCURACY CLASS
AT 0.2 OHMS BURDEN, NO BAR, LOW BASE, G.E. ENCOMPASS
CURRENT SENSOR MODEL JCR-OW OR EQ.
G.E. CAT#750X134609 6 more or less _____
2. 500:5 RATIO, RATING FACTOR 4.0 AT 30C, 0.3 ACCURACY CLASS
AT 0.5 OHMS BURDEN, NO BAR, LOW BASE, G.E. ENCOMPASS
CURRENT SENSOR MODEL JAK-OW
G.E. CAT #750X133629 6 more or less _____
3. 600:5 RATIO, RATING FACTOR 2.0 AT 30C, 0.15 ACCURACY CLASS
AT 0.5 OHMS BURDEN, NO BAR, LOW BASE, ABB CMF-S.
ABB STYLE NO. 923A497G01 6 more or less _____
4. 1000:5 RATIO, RATING FACTOR 4.0 AT 30C, 0.3 ACCURACY CLASS
AT 0.5 OHMS BURDEN, WINDOW TYPE, WITH MOUNTING BASE,
G.E. ENCOMPASS CURRENT SENSOR MODEL JAD-OW
G.E. CAT #750X120611 6 more or less _____

- F. CURRENT TRANSFORMERS - PRIMARY TYPE, 15KV, 110 KV BIL, 60 HZ, OUTDOOR. ACCURACY CLASS 0.15 AT B-0.1 THROUGH B-0.5. GE TYPE JKW-5A ONLY.
1. 50:5 RATIO. RATING FACTOR 1.5. CATALOG NUMBER: 755X053108
3 more or less _____
 2. 150:5 RATIO. RATING FACTOR 1.5. CATALOG NUMBER: 755X053111
3 more or less _____
- G. CURRENT TRANSFORMER – PRIMARY TYPE, 15KV, 110 KV BIL, 60 HZ, OUTDOOR. ACURACY CLASS 0.15 AT B-1.8. 200:5 RATIO. RATING FACTOR 1.5. ABB TYPE KON-11ER ONLY. CATALOG #E-923A427G01.
3 more or less _____
- H. POTENTIAL TRANSFORMERS – PRIMARY TYPE, 15KV, OUTDOOR, MOLDED, 60:1 TWO BUSHING, 7200/12470 WYE, IEEE METER ACCURACY 0.15 W, X, M, Y. G.E. TYPE JVW-5A OR ABB VOZ11E. G.E. CATALOG NUMBER: 765X032042
3 more or less _____
- I. SECONDARY CURRENT AND VOLTAGE TRANSFORMER RACKS. BARFIELD INSTRUMENT TRANSFORMER MOUNTING BRACKET FOR 3 CT'S OR 3 VT'S. CATALOG NUMBER: BA3CTVT-W
1 more or less _____
- J. PRIMARY CURRENT AND VOLTAGE TRANSFORMER RACKS
1. BARFIELD ONE CT AND ONE PT
CATALOG NUMBER: BAPMM2 Price each _____
 2. BARFIELD THREE CT AND THREE PT
CATALOG NUMBER: BAPMM6 Price each _____
- K. POWER MONITORS, INC., REVOLUTION POWER QUALITY RECORDER.
1 more or less _____
- L. P0WER MONITORS, INC., SET OF FOUR 24 INCH FLEX CURRENT TRANSFORMERS TO FIT REVOLUTION POWER QUALITY RECORDER. CATALOG NUMBER FCT 4/24. 1 more or less _____
- M. P0WER MONITORS, INC., SET OF FOUR 36 INCH FLEX CURRENT TRANSFORMERS TO FIT REVOLUTION POWER QUALITY RECORDER. CATALOG NUMBER FCT 3/36. 1 more or less _____

N. POWER MONITORS, INC. SET OF FOUR TRUE LOW AMP DUAL RANGE
20/200 AMP CURRENT TRANSFORMERS TO FIT REVOLUTION POWER
QUALITY RECORDER. CATALOG NUMBER TLAR +200/4.

1 more or less _____

VIII. LIGHTS AND LIGHTING EQUIPMENT

- A. EATON-COOPER LIGHTING NAVION, 480 VOLT, 1A DRIVE CURRENT, 5000K LED COLOR TEMPERATURE, AF LIGHTIN ENGINE, 333-WATT 6 SQUARE, NON-DIMMING, TYPE 5 DISTRIBUTION, 20K SURGE PROTECTION, 10 YEAR WARRANTY. EATON NVN-AF-06-E-8-5WQ-7050-20K-AP-U ONLY. 20 more or less _____

- B. LED ROADWAY TO REPLACE 100W HID. 120-277 VOLT, FIXTURE SHALL HAVE A LUMEN PER WATT (LPW) RATIO OF 100 OR GREATER. 4000K COLOR TEMP WITH 7-PIN PHOTOCELL RECEPTICAL. MANUFACTURER TO PROVIDE 10 YR WARRANTY WITH DATE PERMANENTLY STAMPED OR LABELED IN FIXTURE. AMERICAN ELECTRIC PART #ATBMic10BLEDE15MVOLTR2P7, HOWARD LIGHTING PART #LRS1DMV24KGY1P7N, GENERAL ELECTRIC ERL1008B140AGRAY, OR EATON ARCH-AF16-60-D-U-T2R-4N7-10K-AP-U ONLY. 20 more or less _____

- C. LED ROADWAY TO REPLACE 250W HID. 120-277 VOLT, FIXTURE SHALL HAVE A LUMEN PER WATT (LPW) RATIO OF 100 OR GREATER. 4000K LED COLOR TEMPERATURE WITH 7-PIN PHOTOCELL RECEPTICAL, GRAY IN COLOR. MANUFACTURER TO PROVIDE 10 YR WARRANTY WITH DATE PERMANENTLY STAMPED OR LABELED IN FIXTURE. GENERAL ELECTRIC PART #ERLH011B140AGRAY, HOWARD LIGHTING PART #LRM1GMV34KGT1P7N, AMERICAN ELECTRIC PART #ATBMP05MVOLTR3P7, OR EATON VERD-G-A02-D-U-T3-4N7-10K-AP ONLY. 20 more or less _____

- D. LED ROADWAY TO REPLACE 400W HID. 120-277 VOLT, FIXTURE SHALL HAVE A LUMEN PER WATT (LPW) RATIO OF 100 OR GREATER. 4000K LED COLOR TEMPERATURE WITH 7-PIN PHOTOCELL RECEPTICAL, GRAY IN COLOR. MANUFACTURER TO PROVIDE 10 YR WARRANTY WITH DATE PERMANENTLY STAMPED OR LABELED IN FIXTURE. EATON VERD-M-A04-D-U-T4-4N7-10K-AP-U ONLY. 20 more or less _____

E. LED FLOODLIGHT TO REPLACE 250W HID. 120-277 VOLT, FIXTURE SHALL HAVE A LUMEN PER WATT (LPW) RATIO OF 100 OR GREATER. 4000K COLOR TEMPERATURE WITH 7-PIN PHOTOCELL RECEPTICAL. MANUFACTURER TO PROVIDE 10 YR WARRANTY WITH DATE PERMANENTLY STAMPED OR LABELED IN FIXTURE. AMERICAN ELECTRIC 75LEDP50MVOLT664000KYKBZ0643TBTL7, GENERAL ELECTRIC EFNA0ES5405TDKBZ, EATON UFLD-A25-D-U-66-T-BZ-4N7-10K OR HOWARD UFBMD74YB2R7NA-1 ONLY.

20 more or less _____

F. LED FLOODLIGHT TO REPLACE 400W HID. 120-277 VOLT, FIXTURE SHALL HAVE A LUMEN PER WATT (LPW) RATIO OF 100 OR GREATER. 4000K COLOR TEMPERATURE WITH 7-PIN PHOTOCELL RECEPTICAL. MANUFACTURER TO PROVIDE 10 YR WARRANTY WITH DATE PERMANENTLY STAMPED OR LABELED IN FIXTURE. AMERICAN ELECTRIC 75LEDP70MVOLT664000KYKBZ0643TBTL7, GENERAL ELECTRIC PART EFH1010BB65740AAT1DKBZ, EATON UFLD-A40-D-U-66-T-BZ-4N7-10K OR HOWARD UFBMD74YB2R7NA-3 ONLY.

20 more or less _____

G. HOWARD LARGE UTILITY FLOODLIGHT, 120-277 VOLT, 196W 80 LED, 4700K LED COLOR TEMPERATURE, SLIP FITTER MOUNTING, CONCAVE GLASS, AND NEMA 5 OPTICS. HOWARD MODEL #ULF4HE550UBZ ONLY.

20 more or less _____

H. LED INTERSTATE LIGHT, 120-277 VOLT, FIXTURE SHALL HAVE A LUMEN PER WATT (LPW) RATIO OF 100 OR GREATER. 4000K COLOR TEMPERATURE WITH 7-PIN PHOTOCELL RECEPTICAL. MANUFACTURER TO PROVIDE 10 YR WARRANTY WITH DATE PERMANENTLY STAMPED OR LABELED IN FIXTURE. EATON NVN-AF-06-LED-U-T4W-10K-4N7-AP ONLY.

20 more or less _____

I. 400 WATT HPS INTERSTATE, 120 VOLT POLE MOUNT WITH PHOTO ELECTRIC CELL RECEPTACLE, AMERICAN ELECTRIC CATALOG# 285 40S CA MT1 R3 DA GY

12 more or less _____

J. STREET LIGHT ARMS (ACTION MANUFACTURING, INC. OR EQ.)

1. 6' POLE MOUNT 2" STEEL (AMI-105)
24 more or less _____
2. 10' POLE MOUNT 2" STEEL (AMI-113)
24 more or less _____

K. PHOTO ELECTRIC CONTROLS

1. 105-305 VAC, 50/60Hz, 1000W, 1800VA, DTL (DARK TO LIGHT)
PART #D124-1.5TJ50 OR EQ.
100 more or less _____
2. 105-305 VAC, 50/60 Hz, 1000W, 1800VA, LED LONG LIFE
PHOTOCONTROL PART DTL (DARK TO LIGHT) #DSS124N-1.5-TJJE
OR HOWARD HI-LL127-15-GN-12 ONLY.
20 more or less _____
3. 105-305 VAC, 50/60 Hz, 1000W, 1800VA, RIPLEY LED LONG LIFE
PHOTOCONTROL PART #6390L-BK ONLY.
20 more or less _____
4. 420-520 VAC, 50/60Hz, 1000W, 1800VA, DTL (DARK TO LIGHT)
PART #DX480-12A OR EQ.
100 more or less _____
5. 432-528 VAC, 50/60Hz, 1000W, 1800VA, LONG LIFE PHOTOCONTROL
PART RIPLEY LED #6394L OR HOWARD HI-LL-127-15-BK-12 ONLY.
20 more or less _____

IX. POLES

A. WOOD POLES WITH WOLMANIZED CCA-ET TREATMENT – WOOD POLES SHALL BE TREATED WITH CHROMATED COPPER ARSENATE (CCA) TO A RETENTION OF 0.60 LBS/CFT. POLES SHALL HAVE THE ENHANCED CLIMBING TREATMENT. THE ENHANCED CLIMBING TREATMENT SHALL INCLUDE PENTACHLOROPHENOL WOOD PRESERVATIVE IN ADDITION TO THE WOOD SOFTENING AGENT. POLES TREATED USING THE TOP OR SIMILAR PROCESS TO A MINIMUM OF 0.18 LBS/CFT IN THE OUTER 1 INCH OF THE POLE SHELL. ALL POLES SHALL COMPLY WITH THE MOST RECENT REVISION OF RUS BULLETIN 1728F – 700 FOR DESIGN, MANUFACTURING, INSPECTION, TESTING AND SHIPMENT. BIDDER SHALL CERTIFY THAT THE PRESERVATIVE SPECIFIED IS ADDED TO THE ET TREATMENT OR BIDS WILL NOT BE ACCEPTED. TRUCK LOAD QUANTITY WITH BOOM TRUCK; 60 FOOT OR LONGER WILL BE UNLOADED BY STARKVILLE ELECTRIC DEPARTMENT. REPRESENTATIVE ASSAY RESULTS FOR POLES MEETING THIS SPECIFICATION THAT WERE PROVIDED TO CUSTOMERS WITHIN THE LAST 12 MONTHS MUST BE SUPPLIED WITH THE BID. **ALL TRANSPORTATION COST SHALL BE INCLUDED IN THE PRICE. FOB 605 HWY 182 EAST, STARKVILLE, MS.**

- | | |
|-------------------|----------------------|
| 1. 30 FT CLASS 5 | PRICE PER POLE _____ |
| 2. 40 FT CLASS 2 | PRICE PER POLE _____ |
| 3. 40 FT CLASS 4 | PRICE PER POLE _____ |
| 4. 45 FT CLASS 2 | PRICE PER POLE _____ |
| 5. 50 FT CLASS 2 | PRICE PER POLE _____ |
| 6. 55 FT CLASS 2 | PRICE PER POLE _____ |
| 7. 60 FT CLASS 1 | PRICE PER POLE _____ |
| 8. 65 FT CLASS 1 | PRICE PER POLE _____ |
| 9. 70 FT CLASS 1 | PRICE PER POLE _____ |
| 10. 75 FT CLASS 1 | PRICE PER POLE _____ |
| 11. 80 FT CLASS 1 | PRICE PER POLE _____ |
| 12. 85 FT CLASS 1 | PRICE PER POLE _____ |

B. PRESTRESSED STATIC CAST CONCRETE POLES, OCTAGONAL ONLY—
 POLES SHALL COMPLY WITH THE MOST RECENT REVISION OF RUS
 BULLETIN 1724E-206 FOR DESIGN, MANUFACTURE, INSPECTION,
 TESTING, AND SHIPMENT OF SPUN, PRESTRESSED CONCRETE POLES.
 POLES SHALL BE DESIGNED TO MEET AASHTO & NESC
 REQUIREMENTS FOR MECHANICAL AND ENVIRONMENTAL
 LOADING. POLES SHALL BE TYPE I PORTLAND CEMENT. POLES
 SHALL BE RATED FOR A WOOD POLE EQUIVALENT CLASS BASED ON
 ANSI 05.1 AND HAVE GROUND CLIPS MOUNTED EVERY 4 FEET.
 POLES OVER 60 FEET IN LENGTH SHALL INCLUDE STEP BOLT
 INSERTS. **ALL TRANSPORTATION COST SHALL BE INCLUDED IN
 THE PRICE. FOB 605 HWY 182 EAST, STARKVILLE, MS.**

- | | |
|--------------------|----------------------|
| 1. 30 FT CLASS 5 | PRICE PER POLE _____ |
| 2. 30 FT CLASS 2 | PRICE PER POLE _____ |
| 3. 35 FT CLASS 5 | PRICE PER POLE _____ |
| 4. 35 FT CLASS 2 | PRICE PER POLE _____ |
| 5. 40 FT CLASS 2 | PRICE PER POLE _____ |
| 6. 40 FT CLASS H8 | PRICE PER POLE _____ |
| 7. 45 FT CLASS 2 | PRICE PER POLE _____ |
| 8. 45 FT CLASS H1 | PRICE PER POLE _____ |
| 9. 50 FT CLASS 2 | PRICE PER POLE _____ |
| 10. 50 FT CLASS H1 | PRICE PER POLE _____ |
| 11. 55 FT CLASS 2 | PRICE PER POLE _____ |
| 12. 55 FT CLASS H1 | PRICE PER POLE _____ |
| 13. 60 FT CLASS 2 | PRICE PER POLE _____ |
| 14. 60 FT CLASS H1 | PRICE PER POLE _____ |
| 15. 65 FT CLASS 2 | PRICE PER POLE _____ |
| 16. 65 FT CLASS H1 | PRICE PER POLE _____ |
| 17. 70 FT CLASS 1 | PRICE PER POLE _____ |

- 18. 70 FT CLASS H1 PRICE PER POLE _____
- 19. 70 FT CLASS H4 PRICE PER POLE _____
- 20. 75 FT CLASS 1 PRICE PER POLE _____
- 21. 75 FT CLASS H2 PRICE PER POLE _____
- 22. 75 FT CLASS H4 PRICE PER POLE _____
- 23. 80 FT CLASS 1 PRICE PER POLE _____
- 24. 80 FT CLASS H2 PRICE PER POLE _____
- 25. 80 FT CLASS H4 PRICE PER POLE _____

C. CONCRETE POLES FOR STREET LIGHTING – SQUARE TAPERED, SMOOTH GRAY, LONESTAR PRESTRESS MANUFACTURING INCORPORATED (LPMI) TYPE 1 POLE OR EQUIVALENT. **ALL TRANSPORTATION COST SHALL BE INCLUDED IN THE PRICE. FOB 605 HWY 182 EAST, STARKVILLE, MS.**

- 1. 30 FT (LPMI CAT. #301002 OR EQUIVALENT)
PRICE PER POLE _____
- 2. 35 FT (LPMI CAT. #351002 OR EQUIVALENT)
PRICE PER POLE _____

D. BRACKETS – 6 FT. ALUMINUM STREET LIGHT BRACKETS FOR CONCRETE POLES. LONESTAR PRESTRESS MANUFACTURING INCORPORATED (LPMI) OR EQUIVALENT.

- 1. SINGLE ARM BRACKET (LPMI CAT. #966967 OR EQUIVALENT)
PRICE EACH _____
- 2. DOUBLE ARM BRACKET (LPMI CAT. #967906 OR EQUIVALENT)
PRICE EACH _____

E. STEEL POLES, **MULTI-FACETED (NOT ROUND)** ONLY – POLES SHALL BE FURNISHED IN ACCORDANCE WITH THE MOST RECENT APPLICABLE SECTIONS OF AISC (AMERICAN INSTITUTE OF STEEL CONSTRUCTION) SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS AND ANY APPLICABLE STANDARD FROM ASCE (AMERICAN SOCIETY OF CIVIL ENGINEERS). MATERIALS AND TESTING SHALL COMPLY WITH THE LATEST REVISIONS OF ALL APPLICABLE ASTM STANDARDS. ALL WELDS AND HARDWARE SHALL COMPLY WITH THE LATEST EDITION OF AWS (AMERICAN WELDING SOCIETY) STRUCTURAL WELDING CODE, D1.1. POLES SHALL BE DESIGNED TO MEET NESC REQUIREMENTS FOR MECHANICAL AND ENVIRONMENTAL LOADING. POLES SHALL BE RATED FOR A WOOD POLE EQUIVALENT CLASS BASED ON ANSI 0.51. ANY SURFACE PREPERATION SHALL HEED STRICTLY TO SSPC (STEEL STRUCTURE PAINTING COUNCIL) SURFACE PREPARATION SPECIFICATION, SPCC-SP6. **ALL TRANSPORTATION COST SHALL BE INCLUDED IN THE PRICE. FOB 605 HWY 182 EAST, STARKVILLE, MS.**

- | | |
|--------------------|----------------------|
| 1. 60 FT CLASS 1 | PRICE PER POLE _____ |
| 2. 65 FT CLASS 1 | PRICE PER POLE _____ |
| 3. 70 FT CLASS 1 | PRICE PER POLE _____ |
| 4. 75 FT CLASS 1 | PRICE PER POLE _____ |
| 5. 80 FT CLASS 1 | PRICE PER POLE _____ |
| 6. 85 FT CLASS H1 | PRICE PER POLE _____ |
| 7. 90 FT CLASS H1 | PRICE PER POLE _____ |
| 8. 95 FT CLASS H1 | PRICE PER POLE _____ |
| 9. 100 FT CLASS H1 | PRICE PER POLE _____ |

4. 15 KVA PRICE _____
 NO LOAD LOSS (WATTS) _____
 LOAD LOSS (WATTS) _____
5. 25 KVA PRICE _____
 NO LOAD LOSS (WATTS) _____
 LOAD LOSS (WATTS) _____
6. 37.5 KVA PRICE _____
 NO LOAD LOSS (WATTS) _____
 LOAD LOSS (WATTS) _____
7. 50 KVA PRICE _____
 NO LOAD LOSS (WATTS) _____
 LOAD LOSS (WATTS) _____
8. 75 KVA PRICE _____
 NO LOAD LOSS (WATTS) _____
 LOAD LOSS (WATTS) _____
9. 100 KVA PRICE _____
 NO LOAD LOSS (WATTS) _____
 LOAD LOSS (WATTS) _____
10. 167 KVA PRICE _____
 NO LOAD LOSS (WATTS) _____
 LOAD LOSS (WATTS) _____
11. 250 KVA PRICE _____
 NO LOAD LOSS (WATTS) _____
 LOAD LOSS (WATTS) _____

B. OVERHEAD SINGLE PHASE DISTRIBUTION POLE MOUNTED TRANSFORMERS. 12470 – 277 VOLTS.

1. 50 KVA PRICE _____
 NO LOAD LOSS (WATTS) _____
 LOAD LOSS (WATTS) _____

2. 75 KVA PRICE _____
 NO LOAD LOSS (WATTS) _____
 LOAD LOSS (WATTS) _____

3. 100 KVA PRICE _____
 NO LOAD LOSS (WATTS) _____
 LOAD LOSS (WATTS) _____

4. 167 KVA PRICE _____
 NO LOAD LOSS (WATTS) _____
 LOAD LOSS (WATTS) _____

5. 250 KVA PRICE _____
 NO LOAD LOSS (WATTS) _____
 LOAD LOSS (WATTS) _____

6. 333 KVA PRICE _____
 NO LOAD LOSS (WATTS) _____
 LOAD LOSS (WATTS) _____

7. 500 KVA PRICE _____
 NO LOAD LOSS (WATTS) _____
 LOAD LOSS (WATTS) _____

C. OVERHEAD SINGLE PHASE DISTRIBUTION POLE MOUNTED TRANSFORMERS. 7200 – 277 VOLTS

1. 250 KVA PRICE _____
 NO LOAD LOSS (WATTS) _____
 LOAD LOSS (WATTS) _____

2. 333 KVA PRICE _____
 NO LOAD LOSS (WATTS) _____
 LOAD LOSS (WATTS) _____

3. 500 KVA PRICE _____
 NO LOAD LOSS (WATTS) _____
 LOAD LOSS (WATTS) _____

D. PAD MOUNTED SINGLE PHASE DISTRIBUTION TRANSFORMERS.
12470G-Y/7200 – 240/120 VOLTS.

- | | |
|-------------|--|
| 1. 25 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |
| 2. 37.5 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |
| 3. 50 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |
| 4. 75 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |
| 5. 100 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |
| 6. 167 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |
| 7. 250 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |

E. PAD MOUNTED THREE PHASE DISTRIBUTION TRANSFORMERS.
12470Y/7200 – 208Y/120 VOLTS.

- | | |
|-------------|--|
| 1. 75 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |
| 2. 150 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |
| 3. 225 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |
| 4. 300 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |
| 5. 500 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |
| 6. 750 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |
| 7. 1000 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |

F. PAD MOUNTED THREE PHASE DISTRIBUTION TRANSFORMERS.
12470Y/7200 – 480Y/277 VOLTS.

- | | |
|-------------|--|
| 1. 150 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |
| 2. 300 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |
| 3. 500 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |
| 4. 750 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |
| 5. 1000 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |
| 6. 1500 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |
| 7. 2000 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |
| 8. 2500 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |

G. PAD MOUNTED DUPLEX CORE THREE PHASE DISTRIBUTION TRANSFORMERS. 12470Y/7200 – 120/240 SINGLE PHASE WITH 240 THREE PHASE VOLTS. TRANSFORMERS TO BE OPERATED OPEN-WYE --- OPEN-DELTA.

- | | |
|---------------|--|
| 1. 100-50 KVA | PRICE _____
NO LOAD LOSS (WATTS) _____
LOAD LOSS (WATTS) _____ |
|---------------|--|

**STARKVILLE ELECTRIC DEPARTMENT
SINGLE PHASE OVERHEAD TRANSFORMER SPECIFICATION**

1.0 SCOPE

This specification addresses the electrical and mechanical characteristics of single-phase, 60 Hz, two winding, liquid immersed, self-cooled, conventional, overhead distribution transformers for pole mounting.

2.0 STANDARDS

- 2.1** Transformers shall be designed, manufactured, and tested in accordance with all applicable ANSI and NEMA standards, latest revision thereof. If any conflicts arise, the order of precedence shall be the purchase order, this specification, ANSI standards, and the manufacturer's standard practices. All components shall meet applicable ANSI standards.
- 2.2** The transformers shall meet or exceed RUS (formerly REA) Telephone Influence Factor (TIF) requirements.

3.0 RATINGS

- 3.1** The kVA ratings of the units are continuous at 60 Hz and based on not exceeding either a 65 degree Centigrade average winding temperature rise or an 80 degree Centigrade hot spot conductor temperature rise. Standard ratings shall be 1, 3, 5, 10, 15, 25, 37.5, 50, 75, 100, 167, 250, 333, 500, and 833 kVA.
- 3.2** High voltage rating shall be 7200/12470Y or 12470 volts. All transformers 50 kVA and above shall have 2-2½ % taps above and below rating. Transformers equipped with taps shall have the tap changer set to the 100% voltage position.
- 3.3** Low voltage ratings shall be 120, 120/240, or 277 volts.
- 3.4** The final test value of the impedance of the transformer shall be a maximum value of 2.5% or shall be such a value as to limit the voltage drop at full load and unity power factor to 1% or less.
- 3.5** Basic Lightning Impulse Insulation Level (BIL) shall be 30 kV for the low voltage winding(s).

4.0 CONSTRUCTION

- 4.1** Transformer cores are to be of silicon steel, not amorphous metal.
- 4.2** All transformers shall have interlaced secondary windings, where practicable.
- 4.3** The transformer shall be filled with new Cooper FR3 insulating fluid or mineral oil containing less than 1 PPM PCBs.
- 4.4** A Fargo vise type connector, part number GC-207 or equivalent split connector, shall be installed in tank grounding lugs.
- 4.5** Where applicable, tap changer switches for de-energized operation shall be externally operable.

- 4.6 Transformers larger than 100 kVA shall be equipped with a non-resettable device which detects and provides external indication of internal transformer faults, and incorporates pressure relief functionality. The approved device is manufactured by IFD Corporation or approved equal.

5.0 BUSHINGS AND TERMINALS

- 5.1 High voltage bushings shall be cover mounted.
- 5.2 High voltage bushing terminals shall be equipped with hand-wheel bird guard covers or Midsun E/BUSH CV-SMALL covers.
- 5.3 Low voltage bushings shall be sidewall mounted.

6.0 SURGE ARRESTERS

- 6.1 7200 volt transformers shall have mounting provisions for arresters installed at each primary bushing with one arrester installed at the H1 bushing.
- 6.2 Approved arresters are Cooper Power Systems Ultrasil VariSTAR Arrester and Ohio Brass PDV-100 Optima Arrester. Heavy Duty Distribution Class Arrester, 10 kV, 8.4 kV MCOV, with isolator. Wildlife cover is required on all arresters.
- 6.3 Arrester is to be connected to the H1 terminal with insulated conductor and suitable ring terminals.

7.0 PAINTING AND COATING

The finish paint coating shall be Light Gray Number 70

8.0 NAMEPLATE

- 8.1 All units shall have an anodized aluminum laser etched nameplate.
- 8.2 The nameplate shall indicate that the type of insulating fluid and that it contained less than 1 PPM of PCB at the time of manufacture.
- 8.3 The date of manufacture shall be stated on the nameplate.
- 8.4 The design losses, both load and no-load shall be stated on the nameplate.

9.0 LOSSES

- 9.1 United States Department of Energy efficiency standards shall apply. Units less than 10 kVA are excluded.
- 9.2 Remanufactured transformers shall be evaluated with the following loss factors:
A Factor (Core Loss) = \$3.00/watt
B Factor (Copper Loss) = \$1.00/watt

10.0 DOCUMENTATION

- 10.1** The manufacturer shall furnish outline drawings and electrical details on each design. The manufacturer shall furnish at least two complete sets of drawings for each design or furnish a complete set of drawings in AutoCad 2007 format on CD or by e-mail. AutoCad drawings are preferred.
- 10.2** Transformer test records shall be sent to Jason Horner at Starkville Electric Department on monthly or quarterly intervals. (jhorner@starkvilleutilities.com). Test records shall be in IEEE format and delivered as a TXT or Microsoft Excel file.
- 10.3** Information furnished with proposals: 1) Exceptions to Specifications. 2) Average and guaranteed losses. 3) Percent Impedance. 4) Regulation at 80% and 100% power factor.

11.0 DELIVERY AND INVOICING

- 11.1** Delivery shall be made to Starkville Electric Department warehouse located at 605 Highway 182 East, Starkville, MS., between the hours of 8 A.M. and 3 P.M., Monday – Friday, with the exception of holidays.
- 11.2** Transformers delivered in enclosed trailer trucks shall not be double stacked.
- 11.3** Invoices for the transformer shall be submitted only after all items for the transformer have been received and accepted by Starkville Electric Department.

STARKVILLE ELECTRIC DEPARTMENT SINGLE PHASE PADMOUNT TRANSFORMER SPECIFICATION

1.0 SCOPE

This specification addresses the electrical and mechanical characteristics of single-phase, 60 Hz, two winding, liquid immersed, self-cooled, tamper resistant, compartmental, pad-mounted distribution transformers for outdoor locations.

2.0 STANDARDS

- 2.1 Transformers shall be designed, manufactured, and tested in accordance with all applicable ANSI and NEMA standards, latest revision thereof. If any conflicts arise, the order of precedence shall be the purchase order, this specification, ANSI standards, and the manufacturer's standard practices.
- 2.2 The transformers shall meet or exceed RUS (formerly REA) Telephone Influence Factor (TIF) requirements.

3.0 RATINGS

- 3.1 The kVA ratings of the units are continuous at 60 Hz and based on not exceeding either a 65 degree Centigrade average winding temperature rise or an 80 degree Centigrade hot spot conductor temperature rise. Standard ratings shall be 25, 37.5, 50, 75, 100, 167, and 250 kVA.
- 3.2 High voltage rating shall be 12470 Grd-Y/7200 volts.
- 3.3 Low voltage ratings shall be 240/120 volts.
- 3.4 The final test value of the impedance of the transformer shall be a maximum value of 2.5%.

4.0 CONSTRUCTION

- 4.1 The transformer shall be "dead front primary" and "loop feed" design.
- 4.2 Transformer cores are to be of silicon steel **OR** amorphous metal.
- 4.3 All hardware, door hinges, pins, nuts, bolts, etc. used to secure cabinet and doors shall be stainless steel. Silicon bronze nuts shall be used on stainless steel bolts.
- 4.4 The access doors shall be secured by a silicon bronze captive recessed pentahead bolt in addition to regular pad locking provisions.
- 4.5 The tank shall be welded steel construction.
- 4.6 Access to the compartment shall be provided by a hinged lift-up hood.
- 4.7 The transformer shall be filled with new Cooper FR3 insulating fluid or mineral oil containing less than 1 PPM PCBs.
- 4.8 A Fargo vise type connector, part number GC-207 or equivalent split connector, shall be installed in tank grounding lugs.

- 4.9 The single phase transformer shall be equipped with a raised locking mechanism located a minimum of 12 inches above ground on the transformer hood rather than on the base sill at ground level. The locking assembly shall include the security bolt and hasp and provide positive latching action. Padlocks shall be able to hang straight down inside the lock pocket to be better protected from the elements.

5.0 BUSHINGS AND TERMINALS

- 5.1 The location and arrangement of high-voltage bushings, low-voltage bushings, and parking stands shall be in accordance with Figure 2 of ANSI C57.25 for loop feed systems.
- 5.2 Universal high-voltage bushing wells shall be provided. Wells shall be externally clamped and removable to allow for field replacement of bushings without opening the tank.
- 5.3 Universal high-voltage, load-break bushing well inserts shall be provided and installed by the manufacturer.
- 5.4 Secondary terminations shall be stud type with a minimum stud length of 1.75 inches.
- 5.5 Six position secondary connectors shall be installed by the manufacturer. Approved connector is Homac ZVW 4023 EZSL or equivalent. This connector accepts both 5/8 and 1 inch studs, #12 – 350 MCM conductor, 6 outlets plus security light and has a clear lock-on PVC boot.
- 5.6 The low-voltage neutral shall be a fully insulated terminal and shall be grounded by an externally removable strap.

6.0 PAINTING AND COATING

- 6.1 The finish paint coating shall be Padmount Green, Munsell #7GY 3.29/1.5.
- 6.2 The bottom of the transformer assembly shall be undercoated with coal tar epoxy which shall extend up around the sides 2 to 3 inches and is to be followed by the finish coating.

7.0 FUSING

- 7.1 All transformers shall have “flapper” style bayonet holders and dual element bayonet links in series with a Cooper Power Systems partial range under-oil current-limiting fuse such that the maximum interrupting rating is 50 kA.
- 7.2 A drip shield shall be provided below the bayonet holders on the front panel of the unit.

8.0 NAMEPLATE

- 8.1 All units shall have an anodized aluminum laser etched nameplate and shall be located on the inside of the low voltage compartment door. Where the nameplate is mounted on a removable part, the manufacturer’s name and serial number shall be permanently affixed to a non-removable part.
- 8.2 The nameplate shall indicate that the insulating fluid is FR3 containing less than 1 PPM of PCB at the time of manufacture.
- 8.3 The date of manufacture shall be stated on the nameplate.
- 8.4 The design losses, both load and no-load shall be stated on the nameplate.

9.0 LOSS EVALUATION

- 9.1** United States Department of Energy efficiency standards shall apply.
- 9.2** Remanufactured transformers shall be evaluated with the following loss factors:
 - A Factor (Core Loss) = \$3.00/watt
 - B Factor (Copper Loss) = \$1.00/watt

10.0 DOCUMENTATION

- 10.1** The manufacturer shall furnish outline drawings and electrical details on each design. The manufacturer shall furnish at least two complete sets of drawings for each design or furnish a complete set of drawings in AutoCad 2007 format on CD or by e-mail. AutoCad drawings are preferred.
- 10.2** Transformer test records shall be sent to Jason Horner at Starkville Electric Department on monthly or quarterly intervals. (jhorner@starkvilleutilities.com). Test records shall be in IEEE format and delivered as a TXT or Microsoft Excel file.
- 10.3** Information furnished with proposals: 1) Exceptions to Specifications. 2) Average and guaranteed losses. 3) Percent Impedance. 4) Regulation at 80% and 100% power factor.

11.0 DELIVERY AND INVOICING

- 11.1** Delivery shall be made to Starkville Electric Department's warehouse located at 605 Highway 182 East., Starkville, MS., between the hours of 8 A.M. and 3 P.M., Monday – Friday, with the exception of holidays
- 11.2** Transformers shall be delivered on flat bed trucks in order to facilitate unloading with a forklift.
- 11.3** Invoices for the transformer shall be submitted only after all items for the transformer, including documentation, have been received and accepted by Starkville Electric Department.

**STARKVILLE ELECTRIC DEPARTMENT
THREE PHASE PADMOUNT TRANSFORMER SPECIFICATION**

1.0 SCOPE

This specification addresses the electrical and mechanical characteristics of three-phase, 60 Hz, two winding, liquid immersed, self-cooled, tamper resistant, compartmental, pad-mounted distribution transformers for outdoor locations.

2.0 STANDARDS

- 2.1** Transformers shall be designed, manufactured, and tested in accordance with all applicable ANSI and NEMA standards, latest revision thereof. If any conflicts arise, the order of precedence shall be the purchase order, this specification, ANSI standards, and the manufacturer's standard practices.
- 2.2** The transformers shall meet or exceed RUS (formerly REA) Telephone Influence Factor (TIF) requirements.

3.0 RATINGS

- 3.1** The kVA ratings of the units are continuous at 60 Hz and based on not exceeding either a 65 degree Centigrade average winding temperature rise or an 80 degree Centigrade hot spot conductor temperature rise. Standard ratings of triplex core designs shall be 45, 75, 112.5, 150, 225, 300, 500, 750, 1000, 1500, 2000, and 2500 kVA. Standard ratings of duplex core designs shall be 100 kVA for the center grounded (lighting) unit and 50 kVA for the power unit.
- 3.2** High voltage rating shall be 12470Y/7200 volts with full capacity taps split at 2-2.5% above and below rated voltage. (7560, 7380, 7200, 7020, and 6840 volts). All designs are intended for grounded wye operation of the primary windings.
- 3.3** Low voltage ratings for triplex core designs shall be 208Y/120 volts on units up to and including 1000 kVA, or 480Y/277 volts on any kVA size. Low voltage ratings for duplex core designs shall be 120/240 single phase with 240 volt three phase.
- 3.4** The triplex core design transformers are intended for grounded wye – grounded wye service and the angular displacement between the high and low voltage winding vectors shall be zero electrical degrees. The duplex core design transformers are intended for open wye – open delta service.

4.0 IMPEDANCE VOLTAGE

Manufacturer shall provide proposed impedances for duplex designs. The transformer impedance for triplex core designs shall be within the following ranges and are subject to standard ANSI tolerances:

KVA	Minimum Impedance	Maximum Impedance
45-225	1.50%	3.00%
300-500	1.90%	3.80%
750-2500	5.75%	5.75%

5.0 CONSTRUCTION

- 5.1** The transformer shall be “dead front primary” and “loop feed” design.
- 5.2** Transformer cores are to be of silicon steel **OR** amorphous metal.
- 5.3** Transformer cores shall be of the triplex or duplex design.
- 5.4** The transformer shall be compartmental type with a barrier to separate the high voltage compartment from the low voltage compartment.
- 5.5** All hardware, door hinges, pins, nuts, bolts, etc. used to secure cabinet and doors shall be stainless steel. Silicon bronze nuts shall be used on stainless steel bolts.
- 5.6** The access doors shall be secured by a silicon bronze captive recessed pentahead bolt in addition to regular pad locking provisions.
- 5.7** The tank shall be welded steel construction.
- 5.8** The transformer shall be filled with new Cooper FR3 insulating fluid or mineral oil containing less than 1 PPM PCBs.
- 5.9** A Fargo vise type connector, part number GC-207 or equivalent split connector, shall be installed in tank grounding lugs.
- 5.10** The transformer compartment dimensions shall be in accordance with ANSI C57.12.26.1992 Figure 6A for high voltage compartments and Figure 8A for low voltage compartments. The total cabinet width shall be a maximum of 76 inches except 1500 and 2500 kVA units which shall be a maximum width of 102 inches. The cabinet depth shall accommodate the secondary terminals specified in 6.5 of these specifications and not violate any applicable code clearance dimensions.
- 5.11** The transformer shall be equipped with a fliptop terminal cover which can be raised to facilitate operation of Bay-O-Net fuses and to provide clearance for pulling cables in to the terminal compartment. There shall be a strut to hold the cover in the open position. The cover shall only lift after the HV and LV doors have been opened.

6.0 BUSHINGS AND TERMINALS

- 6.1** The location and arrangement of high-voltage bushings and parking stands shall be in accordance with Figure 6 of ANSI C57.26 for loop feed systems. Duplex designs shall be similar or manufacturer shall propose designs for approval.
- 6.2** Universal high-voltage bushing wells shall be provided. Wells shall be externally clamped and removable to allow for field replacement of bushings without opening the tank.
- 6.3** Universal high-voltage, load-break bushing well inserts shall be provided and installed by the manufacturer.
- 6.4** The low-voltage terminal arrangement shall be a staggered arrangement in accordance with Figure 4a of ANSI C57.12.26. The voltage with 208 rated volts to ground on duplex transformers shall be located on the right side when viewed from the door side of the transformer.

- 6.5** Secondary terminations for triplex core designs shall be NEMA spade type in accordance with the following. Figure 9 (a), (b), and (c) of ANSI C57.12.26 and the table below. Duplex core designs shall have 6 spade holes.

KVA	Voltage	Number or Spade Holes
75-300	208Y/120	6
75-500	480Y/277	6
500	208Y/120	8
750-1500	480Y/277	8
750-1000	208Y/120	12
2000-2500	480Y/277	12

- 6.6** Low voltage terminal supports shall be installed by the manufacturer on 208Y/120 volt units 500 kVA and bigger and on 480Y/277 volt units 750 kVA and bigger. Terminal supports shall not interfere with the attachment of secondary connectors longer than the secondary terminals.
- 6.7** The low-voltage neutral shall be a fully insulated terminal and shall be grounded by an externally removable strap. The grounding strap shall not interfere with the attachment of connectors to the low-voltage neutral.
- 6.8** The high voltage neutral shall be connected to the low-voltage neutral internally with an accessible isolation link installed between the primary and secondary neutrals for testing purposes.

7.0 PAINTING AND COATING

The finish paint coating shall be Padmount Green, Munsell #7GY 3.29/1.5.

8.0 FUSING

8.1 All units through 500 kVA shall have “flapper” style bayonet holders and dual element bayonet links in series with a Cooper Power System ELSP under-oil partial-range current-limiting back-up fuse with an interrupting rating of 50 kA. 750 -- 2500 kVA units shall have Cooper Power Systems “flapper” style bayonet holders with silver plated contacts. 750 kVA units shall have Cooper Catalog # 4038361C03CB, 1000 & 1500 kVA units shall have Cooper Catalog #4038361C04CB and 2000 & 2500 kVA units shall have Catalog # 4038361C05CB high amperage overload bayonet links in series Cooper Power System ELSP under-oil partial-range current-limiting back-up fuse with an interrupting rating of 50 kA.

8.2 A drip shield shall be provided below the bayonet holders on the front panel of the unit.

9.0 ACCESSORIES

All units shall have a bottom drain valve installed.

10.0 NAMEPLATE

- 10.1** All units shall have an anodized aluminum laser etched nameplate and shall be located on the inside of the low voltage compartment door. Where the nameplate is mounted on a removable part, the manufacturer's name and serial number shall be permanently affixed to a non-removable part.
- 10.2** The nameplate shall indicate that the insulating fluid is FR3 or mineral oil containing less than 1 PPM of PCB at the time of manufacture.
- 10.3** The date of manufacture shall be stated on the nameplate.
- 10.4** The design losses, both load and no-load shall be stated on the nameplate.
- 10.5** Triplex core construction shall be so stated on the nameplate.

11.0 LOSS EVALUATION

- 11.1** United States Department of Energy efficiency standards shall apply.
- 11.2** Remanufactured transformers shall be evaluated with the following loss factors:
 - A Factor (Core Loss) = \$5.00/watt
 - B Factor (Copper Loss) = \$1.50/watt

12.0 DOCUMENTATION

- 12.0** The manufacturer shall furnish outline drawings and electrical details on each design. The manufacturer shall furnish at least two complete sets of drawings for each design or furnish a complete set of drawings in AutoCad 2007 format on CD or by e-mail. AutoCad drawings are preferred.
- 12.1** Transformer test records shall be sent to Jason Horner at Starkville Electric Department on monthly or quarterly intervals. (jhorner@starkvilleutilities.com). Test records shall be in IEEE format and delivered as a TXT or Microsoft Excel file.
- 12.2** Information furnished with proposals: 1) Exceptions to Specifications. 2) Average and guaranteed losses. 3) Percent Impedance. 4) Regulation at 80% and 100% power factor.

13.0 DELIVERY AND INVOICING

- 13.1** Delivery shall be made to Starkville Electric Department's warehouse located at 605 Highway 182 East., Starkville, MS., between the hours of 8 A.M. and 3 P.M., Monday – Friday, with the exception of holidays.
- 13.2** Transformers shall be delivered on flat bed trucks in order to facilitate unloading with a forklift.
- 13.3** Invoices for the transformer shall be submitted only after all items for the transformer, including documentation, have been received and accepted by Starkville Electric Department.

XI. TRAFFIC CONTROL PRODUCTS

A. FOUR PHASE TERMINAL FACILITY AND CABINET TO INCLUDE:
EPAC 3108M52 PHASE CONTROLLER. CONTROLLER SHALL BE
COMPATIBLE WITH MDOT’S TMC SOFTWARE.
TF 4014 8 POSITION TERMINAL FACILITY
LAPTOP TRAY, DUAL LED LIGHTING PANELS
TF 4001A DETECTOR PANEL
TYPE EL702-S1 POLE MOUNTED CABINET
FAN, THERMOSTAT, LED LIGHT, LAPTOP DRAWER
SWITCHES, DUPLEX, TWO UL26 POLE BANDS
NEMA PLUG – INS AND 5 POSITION CARD RACK AND POWER SUPPLY
EDI SSM12 – LEC MONITOR AND CABLE
ACP340 – ARRESTOR
Price each _____

B. EIGHT PHASE TERMINAL FACILITY AND CABINET TO INCLUDE:
EPAC 3108M52 PHASE CONTROLLER. CONTROLLER SHALL BE
COMPATIBLE WITH MDOT’S TMC SOFTWARE.
TF 4008 12 POSITION TERMINAL FACILITY
LAPTOP TRAY, DUAL LED LIGHTING PANELS
TF4001A DETECTOR PANEL
TYPE EL704-S1 POLE MOUNT CABINET
FAN, THERMOSTAT, LED LIGHT, LAPTOP DRAWER
SWITCHES, DUPLEX, TWO UL26 POLE BANDS
NEMA PLUG – INS AND SEVEN CARD RACK WITH POWER SUPPLY
SSM12 – LEC MONITOR AND CABLE
ACP340 – ARRESTOR
Price each _____

C. EIGHT PHASE TERMINAL FACILITY AND CABINET TO INCLUDE:
EPAC 3108M52 PHASE CONTROLLER. CONTROLLER SHALL BE
COMPATIBLE WITH MDOT’S TMC SOFTWARE.
TF416MT 16 POSITION TERMINAL FACILITY
LAPTOP TRAY, DUAL LED LIGHTING PANELS
TF4001A DETECTOR PANEL
TF4001B DETECTOR PANEL
TYPE EL712OH BASE MOUNTED CABINET WITH BACK DOOR
FAN, THERMOSTAT, LED LIGHT, LAPTOP DOOR
SWITCHES, DUPLEX, ANCHOR BOLTS
NEMA PLUG – INS AND (2) 5 POSITION CARD RACK
MMU16 – EIP MONITOR AND CABLE
ACP340 – ARRESTOR
Price each _____

D. PRIORITY CONTROL PRODUCTS

1. FOUR CHANNEL PHASE SELECTOR
Price each _____
2. TWO CHANNEL PHASE SELECTOR
Price each _____
3. PHASE SELECTOR RACK
Price each _____
4. SINGLE CHANNEL, SINGLE EYE, OPTICAL DETECTOR
Price each _____
5. SINGLE CHANNEL, DOUBLE EYE, OPTICAL DETECTOR
Price each _____
6. TWO CHANNEL, DOUBLE EYE, OPTICAL DETECTOR
Price each _____
7. OPTICAL DETECTOR MAST ARM BRACKET
Price each _____
8. SHELF MOUNTED PHASE SELECTOR CARD RACK
Price each _____
9. OPTICAL EMITTER SYSTEM
Price each _____
10. GLANCE PRIORITY CABINET CONTROL UNIT
Price each _____
11. GLANCE PRIORITY CONTROL VEHICLE UNIT
Price each _____

E. VEHICLE SIGNALS (SIEMENS EAGLE W/ DIALIGHT LEDS INCLUDED)
THESE LEDS SHALL HAVE A 15 YEAR WARRANTY. ALL 15 YEAR
LEDS SHALL BE A DIFFERENT PRODUCT FROM THE STANDARD
PRODUCT.

1. SA101A 12" ONE SECTION PLOY SIGNAL
(W/ RED OR YELLOW LED) Price each _____

2. SA102D 12" TWO SECTION PLOY SIGNAL
(W/ RED OR YELLOW LED) Price each _____

3. SA102E 12" TWO SECTION POLY SIGNAL WITH TURN ARROWS
(W/ RED AND YELLOW LED ARROWS)
Price each _____

4. SA103A 12" THREE SECTION POLY SIGNAL
Price each _____

5. SA103C 12" THREE SECTION POLY SIGNAL WITH TURN ARROWS
Price each _____

6. SIG104N 12" FOUR SECTION INVERTED "T" POLY SIGNAL
Price each _____

7. SIG104N 12" FOUR SECTION POLY SIGNAL
Price each _____

8. SIG105H 12" FIVE SECTION POLY SIGNAL CLUSTER
Price each _____

F. PEDESTRIAN SIGNAL HEAD (WITH DIALIGHT COUNTDOWN
PEDESTRIN SIGNALS INCLUDED) 16" X 18" POLYCARBONATE HEAD
Price each _____

G. TRAFFIC SIGNAL MOUNTING HARDWARE (PELCO OR EQUIVALENT)

1. SE5050 TETHER ASSEMBLY
Price each _____
2. SE5058-06 EXTENDED TETHER ASSEMBLY
Price each _____
3. TRI-STUD ONE WAY MOUNTING (SE5089)
Price each _____
4. TRI-STUD TWO WAY MOUNTING (SE5063 + SE5061)
Price each _____
5. TRI-STUD THREE WAY MOUNTING (SE5063 + SE5094)
Price each _____
6. TRI-STUD FOUR WAY MOUNTING (SE5063 + SE5097)
Price each _____
7. FR1JPY POLYCARBONATE SIDE OF POLE MOUNT
Price each _____
8. INVERTED "T" SPAN WIRE HARDWARE
Price each _____
9. FIVE SECTION SPAN WIRE CLUSTER HARDWARE ASSEMBLY
(SE-5165)
Price each _____

H. BACKPLATES AND MISCELLANEOUS

1. BK-1003 BACK PLATE FOR SA103A
Price each _____
2. BK-1004 BACK PLATE FOR SA104A
Price each _____
3. BK-1005 BACK PLATE FOR 5 SECTION CLUSTER
Price each _____
4. BK-2027 INVERTED "T" BACK PLATE
Price each _____
5. BULL DOG BDL-3 PEDESTRIAN PUSH BUTTON
Price each _____
6. PUSHBUTTON FRAME PBF2C 9X12-B
Price each _____
7. REVERSABLE SIGN 800-85 R10-3E 9X12
Price each _____
8. TWO-WIRE PUSHBUTTON STATION (9"X15" SIGN) WITH SPECIAL
MESSAGE PRE-RECORDED
Price each _____
9. TWO-WIRE PUSHBUTTON STATION CONTROL UNIT
Price each _____
10. R920 RRFB PEDESTIRAN ACTIVATED WARNING SYSTEM (SOLAR)
Price each _____
11. UNITERUPTABLE POWER SUPPLY WITH CABINET
Price each _____
12. AI-500-050 FIELD COMMUNICATIONS MONITORY CONTROLLER
SHELF MOUNT
Price each _____
13. AI-500-060 FIELD COMMUNICATIONS MONITORY CONTROLLER
RACK MOUNT
Price each _____

I. INTERNAL CABINET EQUIPMENT

1. SIEMENS EPAC 3108M52 EIGHT PHASE NEMA CONTROLLER
Price each _____
2. SIEMENS EPAC 3108M60 ATC EIGHT PHASE NEMA CONTROLLER
Price each _____
3. EDI SSM-6LEC SIX CHANNEL NEMA CONFLICT MONITOR
Price each _____
4. EDI SSM-12LEC TWELVE CHANNEL NEMA CONFLICT MONITOR
Price each _____
5. EDI MMU16-EIP SIXTEEN CHANNEL NEMA CONFLICT MONITOR
Price each _____
6. EDI PS-175 NEMA TS-1 RACK POWER SUPPLY
Price each _____
7. PDC SSS-86-3 NEMA LOAD SWITCH
Price each _____
8. EDI 810 NEMA TWO CIRCUIT FLASHER
Price each _____
9. EDI LMD-301 SINGLE CHANNEL SHELF MOUNT INDUCTIVE LOOP
MONITOR Price each _____
10. EDI LMD-302 TWO CHANNEL SHELF MOUNT INDUCTIVE LOOP
MONITOR Price each _____
11. EDI LMD-304 FOUR CHANNEL SHELF MOUNT INDUCTIVE LOOP
MONITOR Price each _____
12. EDI ORACLE-S1E SINGLE CHANNEL SHELF MOUNT INDUCTIVE
LOOP MONITOR Price each _____
13. EDI ORACLE-S2E TWO CHANNEL SHELF MOUNT INDUCTIVE LOOP
MONITOR Price each _____
14. EDI ORACLE 4H FOUR CHANNEL RACK MOUNT LCD INDUCTIVE
LOOP MONITOR, ½ WIDTH Price each _____

J. FLASH ASSEMBLIES

- 1. EP160 NEMA PANEL FLASHER ASSEMBLY WITH SPA100 ARRESTOR Price each _____
- 2. EP160 NEMA PANEL FLASHER ASSEMBLY WITH TIME CLOCK Price each _____
- 3. PAR 335 FLASH TRANSFER RELAY Price each _____

K. EDCO ARRESTER PRODUCTS

- 1. SRA16C LOOP ARRESTER Price each _____
- 2. SRA63 REMOTE INPUT ARRESTER Price each _____
- 3. SHP300-10 MAIN LINE ARRESTER Price each _____
- 4. SPA303 LOAD SWITCH ARRESTER Price each _____
- 5. AP340 ARRESTER Price each _____

L. PELCO ASTROBRAC PRODUCTS

- 1. AB105-30 ASTROBRAC FOR SIGNS Price each _____
- 2. AB105-36 ASTROBRAC FOR SIGNS Price each _____
- 3. AB116-3 ASTROBRAC Price each _____
- 4. AB109 ASTROBRAC FOR FIVE SECTION SIGNAL Price each _____
- 5. SP5116 ASTROBRAC FOR INVERTED "T" Price each _____
- 6. AB116-4 ASTROBRAC FOR FOUR SECTION SIGNAL Price each _____

M. PULL BOXES AND CABINET BASES

- 1. QUAZITE PC1212 CONCRETE JUNCTION BOX
Price each _____
- 2. TC4008 8"x8"x6" PULL BOX
Price each _____
- 3. QUAZITE PC1324HA CONCRETE PULL BOX
Price each _____
- 4. QUAZITE PB40581224B24 CABINET BASE
Price each _____

N. LED SIGNAL & PEDESTRAIN MODULES. MUST MEET OR EXCEED 2005 ITE. (DIALIGHT ITE COMPLIANT SIGNALS MODULES)

- 1. 8" RED BALL (433-1110-003XL) Price each _____
- 2. 8" YELLOW BALL (433-3130-901XL)
Price each _____
- 3. 8" GREEN BALL (433-2120-001XL)
Price each _____
- 4. 12" RED BALL (15-year warranty)
Price each _____
- 5. 12" RED BALL (5-year warranty)
Price each _____
- 6. 12" YELLOW BALL (15-year warranty)
Price each _____
- 7. 12" YELLOW BALL (5-year warranty)
Price each _____
- 8. 12" GREEN BALL (15-year warranty)
Price each _____
- 9. 12" GREEN BALL (5-year warranty)
Price each _____
- 10. 12" RED ARROW (15-year warranty)
Price each _____

- 11. 12" RED ARROW (5-year warranty)
Price each _____
- 12. 12" YELLOW ARROW (15-year warranty)
Price each _____
- 13. 12" YELLOW ARROW (5-year warranty)
Price each _____
- 14. 12" GREEN ARROW (15-year warranty)
Price each _____
- 15. 12" GREEN ARROW (5-year warranty)
Price each _____
- 16. 16" X 18" COUNTDOWN PEDESTRIAN SIGNAL (430-6479-001X)
Price each _____
- 17. 16" X 18" HAND AND PERSON PEDESTRAIN SIGNAL (430-6450-001X)
Price each _____
- 18. PED SIGNAL CLAMSHELL HARDWARE
Price each _____
- 19. PED SIGNAL 1-WAY POST TOP HARDWARE
Price each _____
- 20. PED SIGNAL 2-WAY POST TOP HARDWARE
Price each _____
- 21. PED SIGNAL SIDE OF POLE HARDWARE
Price each _____

O. CABLES

- 1. SEVEN CONDUCTOR, #14 CU. STD. SIGNAL CABLE
Price per Ft. _____
- 2. #138 OPTICAL DETECTOR CABLE
Price per Ft. _____
- 3. TYPE LMR240 – TC240NMC ¼" SUPERFLEX COAXIAL 3' JUMPER
Price each _____
- 4. TYPE LMR600 ½" COAX
Price per Ft. _____

P. TECHNICAL ASSISTANCE PER DAY FOR ONE IMSA CERTIFIED TECHNICIAN. (THE SUCCESSFUL BIDDER OF THE ITEMS AWARDED IN THIS BID MUST BE ABLE TO PROVIDE FIELD TECHNICAL ASSISTANCE UPON REQUEST, GIVEN ADEQUATE LEAD-TIME.)

1. PER DAY COST TO CITY Price _____

2. PER MILE COST TO CITY Price _____

Q. RADIO EQUIPMENT & SOFTWARE

1. ASTRON CORPORATION RS3A POWER SUPPLY
Price each _____

2. MDS9810 SPREAD SPECTRUM RADIO
Price each _____

3. KATHREIN SCALA TY-900 YAGI ANTENNA
Price each _____

4. POLY PHASOR IS50NX-C2 ARRESTER
Price each _____

5. CONTROLLER TO RADIO CABLE (CONNECTOR)
Price each _____

6. COMPLETE INTERSECTION RADIO SYSTEM
Price each _____

7. TACTICS-MARC SOFTWARE FOR USE WITH EAGLE CONTROLLERS
Price each _____

R. SOLAR POWERED FLASHING BEACONS

1. CARMANAH R247E SINGLE BEACON FLASHER
Price each _____

2. CARMANAH R247C DUAL BEACON FLASHER
Price each _____

3. CARMANAH R829 SINGLE BEACON SCHOOL ZONE FLASHER
Price each _____

4. CARMANAH R829 DUAL BEACON SCHOOL ZONE FLASHER
Price each _____

S. SENSYS WIRELESS DETECTOR EQUIPMENT

1. SENSYS NETWORKS A240-S, ACCESS POINT WITH MOUNTING BRACKETS Price each _____
2. SENSYS NETWORKS APCC-M, ACCESS POINT MODULE WITH TWO APCC-ACC-1 ISOLATORS AND TWO APCC-SPP RADIOS WITH MOUNTING BRACKETS Price each _____
3. SENSYS NETWORKS RP240-BH-LL, LONG LIFE REPEATER WITH MOUNTING BRAKET Price each _____
4. SENSYS NETWORKS CC240, 4 CHANNEL CONTACT CLOSURE MASTER CARD Price each _____
5. SENSYS NETWORKS EX240, 4 CHANNEL EXTENSION CARD Price each _____
6. SENSYS NETWORKS VSN240-F, FLUSH MOUNTED SENSOR WITH EPOXY Price each _____
7. SENSYS NETWORKS CC-ACC, ACCESSBOX FOR CONTACT CLOSURE MASTER CARD Price each _____
8. CAT5E ETHERNET PATCH CABLE, SNAGLESS, BLACK 4FT Price each _____
9. CAT5E ETHERNET PATCH CABLE, SNAGLESS, BLACK 2 FT Price each _____
10. FABICK 450 ML POUR-PAC EPOXY CAT #M-PP-450 WITH M-SM-750 LARGE POUR TUBE Price each _____

V. WAVETRONIX RADAR EQUIPMENT

1. SMARTSENSOR MATRIX (WX-SS-225)
Price each _____
2. SMARTSENSOR EXTENDED RANGE ADVANCE (WX-SS-200E)
Price each _____
3. CLICK 650 CABINET INTERFACE (102-0416)
Price each _____
4. SMARTSENSOR 6-CONDUCTOR 6 FT CABLE WITH MS
CONNECTORS (WX-SS-704-006) Price each _____
5. SMARTSENSOR 6-CONDUCTOR 1000 FT BULK SPOOL (WX-SS-705)
Price each _____
6. SMARTSENSOR MOUNT (WX-SS-611)
Price each _____
7. SMARTSENSOR 6-CONDUCTOR CABLE JUCTION BOX (WX-SS-710)
Price each _____
8. HENKE ENTERPRISES, INC. 4' CABLE PART SDLCCBLMM
Price each _____
9. HENKE ENTERPRISES, INC. 7-PORT SDLC HUB WITH LATCHING
CONNECTORS Price each _____
10. WAVETRONIX 1-SENSOR MATRIX PACKAGE W/CLICK 650 (WX-SS-
225-1AC-650) TO INCLUDE: 1 SMARTSENSOR MATRIX SENSOR, 1
SENSOR MOUNTING BRACKET, 1 J-BOX, 1 CLICK 650
Price each _____
11. WAVETRONIX 2-SENSOR MATRIX PACKAGE W/CLICK 650 (WX-SS-
225-2AC-650) TO INCLUDE: 2 SMARTSENSOR MATRIX SENSOR, 2
SENSOR MOUNTING BRACKET, 2 J-BOX, 1 CLICK 650
Price each _____
12. WAVETRONIX 3-SENSOR MATRIX PACKAGE W/CLICK 650 (WX-SS-
225-3AC-650) TO INCLUDE: 3 SMARTSENSOR MATRIX SENSOR, 3
SENSOR MOUNTING BRACKET, 3 J-BOX, 1 CLICK 650
Price each _____

13. WAVETRONIX 4-SENSOR MATRIX PACKAGE W/CLICK 650 (WX-SS-225-4AC-650) TO INCLUDE: 4 SMARTSENSOR MATRIX SENSOR, 4 SENSOR MOUNTING BRACKET, 4 J-BOX, 1 CLICK 650
Price each _____
14. WAVETRONIX 1-SENSOR MATRIX PACKAGE W/CLICK 656 (WX-SS-225-1AC-656) TO INCLUDE: 1 SMARTSENSOR MATRIX SENSOR, 1 SENSOR MOUNTING BRACKET, 1 J-BOX, 1 CLICK 656
Price each _____
15. WAVETRONIX 2-SENSOR MATRIX PACKAGE W/CLICK 656 (WX-SS-225-2AC-656) TO INCLUDE: 2 SMARTSENSOR MATRIX SENSOR, 2 SENSOR MOUNTING BRACKET, 2 J-BOX, 1 CLICK 656
Price each _____
16. WAVETRONIX 3-SENSOR MATRIX PACKAGE W/CLICK 656 (WX-SS-225-3AC-656) TO INCLUDE: 3 SMARTSENSOR MATRIX SENSOR, 3 SENSOR MOUNTING BRACKET, 3 J-BOX, 1 CLICK 656
Price each _____
17. WAVETRONIX 4-SENSOR MATRIX PACKAGE W/CLICK 656 (WX-SS-225-4AC-656) TO INCLUDE: 4 SMARTSENSOR MATRIX SENSOR, 4 SENSOR MOUNTING BRACKET, 4 J-BOX, 1 CLICK 656
Price each _____
18. WAVETRONIX 5-SENSOR MATRIX PACKAGE W/CLICK 656 (WX-SS-225-5AC-656) TO INCLUDE: 5 SMARTSENSOR MATRIX SENSOR, 5 SENSOR MOUNTING BRACKET, 5 J-BOX, 1 CLICK 656
Price each _____
19. WAVETRONIX 6-SENSOR MATRIX PACKAGE W/CLICK 656 (WX-SS-225-6AC-656) TO INCLUDE: 6 SMARTSENSOR MATRIX SENSOR, 6 SENSOR MOUNTING BRACKET, 6 J-BOX, 1 CLICK 656
Price each _____
20. CLICK 656 6-SENSOR CABINET INTERFACE (102-0451)
Price each _____