SP-236007
(New)

SPECIAL PROVISIONS
FOR
ROADWAY LIGHTING

Linn County
STBG-SWAP-1187(829)--SG-57

Effective Date
December 19, 2023

THE STANDARD SPECIFICATIONS, SERIES 2023, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

236007.01 GENERAL.

A. Section Includes

1. Underground Components
2. Poles and Fixtures

B. DESCRIPTION OF WORK

This part of the specifications includes the furnishing of all materials and equipment necessary to complete, in place and operational, roadway lighting and control as described in the project plans.

C. SUBMITTALS

1. Schedule of Unit Prices: Within 30 days after awarding of the contract for the project submit a completed schedule of unit prices. Estimates of the work performed on the project will be made by the Contracting Authority and the unit costs will be used to prepare progress payments to the Contractor.

2. Material and Equipment List: Within 30 days after awarding of the contract for the project, submit a completed list of materials and equipment. Submit two copies to the Engineer for written approval before any equipment or materials are ordered.

3. Contractor Certification: Submit the name and contact information of the licensed electrician and /or certified tech that will be working on the project.

4. Shop Drawings: Submit three copies of shop drawings for light signal poles and structures to be furnished on the project. Submit three copies of catalog cuts and manufacturer’s specifications for all items in the equipment list.

D. DELIVERY, STORAGE, AND HANDLING

1. Deliver only materials that fully conform to these Specifications, or for which substitution has been approved.

    a. The Contractor shall complete the equipment list by writing in the name of the equipment manufacturer and catalog number of each item listed which he proposes to install. Before beginning work on the project, the Contractor shall submit three copies of the equipment list, and three copies of catalog cuts for all materials supplied by the Contractor.

    b. Prior to ordering any materials the Contractor shall provide certification from the manufacturers of all electrical equipment, conduit, and cable stating said material complies with the Specifications.

2. Store material in accordance with the manufacturers' recommendations and in locations which will minimize the interference with operations, minimize environmental damage, and protect adjacent areas.

3. Remove and dispose of unacceptable materials in accordance with the contract documents.

E. SCHEDULING AND CONFLICTS

1. Schedule work to minimize disruption of public streets and facilities.

2. Discontinue work which will be affected by any conflicts discovered or any changes needed to accommodate unknown or changed conditions and notify the Engineer.

3. Contractor shall coordinate routing and installation of conduit system with existing and proposed utilities, structures and equipment. Contractor shall be responsible to obtain locates on all underground utilities and verify clearances before boring, trenching or excavation.

F. SPECIAL REQUIREMENTS

1. Installation shall be in accordance with:

    a. National Electrical Code
    b. State and local ordinances / code
    c. National Fire Protection Association
    d. Uniform Building Code
    e. Occupational Safety and Health Act
    f. Iowa Administrative Code
    g. Utility Company Requirements

2. Furnish upon request from the Engineer, a sample of any item or material proposed for use on for this project.

3. Any modifications of the installation are subject to the approval of the Engineer.

4. The painted surface of any equipment damaged in shipping or installation shall be retouched or repainted in a manner satisfactory to the Engineer.

5. All contractors shall familiarize themselves with all codes and standards applicable to their work. No extra compensation will be allowed for corrections or changes in the work required due to the contractor's failure to comply with the applicable codes and standards. Where two or more codes or standards are in conflict, that requiring the highest order of workmanship shall take precedence, but

such questions shall be referred to the Engineer for final decision.

G. Electrical Drawings

1. Drawings for the electrical work are in part diagrammatic, and are intended to convey the scope of the work and to indicate the actual location of some equipment.

2. Contractor shall layout his own work and shall be responsible for determining the exact location for equipment and rough-ins and the exact routing of conduits and raceway so as to best fit the layout of the work.

3. Contractor shall take his own field measurements for verifying locations and dimensions; scaling of the drawings will not be sufficient for laying out the work.

4. Because of the scale of the drawings certain basic items such as couplings, pull or splice boxes may not be shown, but where such items are required by code or by other sections of the specifications or where they are required for proper installation of the work, such items shall be furnished and installed.

236007.02 MATERIALS AND CONSTRUCTION.

A. General.

1. Fabrication or assembly process materials shall comply with the applicable parts of Section 2523 of the Standard Specifications.

2. Equipment and materials shall be of new stock unless the plans provide for the relocation of or the use of fixtures furnished by others. New equipment and materials shall be the product of reputable manufacturers of electrical equipment, and shall meet Engineer approval.

3. Six copies of shop drawings shall be furnished for steel mast arm poles to be furnished on the Project. Six copies of catalog cuts and manufacturer's specifications shall be furnished for all standard "off-the-shelf" items. Engineer review of shop drawings and catalog cuts shall not relieve the Contractor of any responsibility under the contract documents.

4. All electrical equipment shall conform to the standards of the NEMA, and all material and work shall conform to the requirements of the NEC, ASTM, ASA, and local ordinances. Miscellaneous electrical equipment and materials shall be UL approved. Wherever reference is made in these specifications or in the standard provisions to the code, the safety orders, the general order, or the standards mentioned above, the reference shall be construed to mean the code, order, or standard that is in effect at the date of advertising of these specifications.

5. Certification from the manufacturers of all electrical equipment, signal supports, conduit and cable shall be supplied by the Contractor stating said material complies with these specifications.

B. Handholes/Vaults.

1. General.

a. Handholes/vaults shall be installed at the locations shown on the plans, and at such additional points as the Contractor, at no additional expense to the Contracting Authority, may desire to facilitate the work.

b. Furnish precast concrete handhole or fiber vault, or fiberglass handhole, each with cast iron ring and cover or heavy duty fiberglass cover as shown in plans.

2. Precast Composite Handhole.
Tubs shall be 12 inches by 18 inches outside or similar dimension polymer concrete stackable handholes as specified in the Contract Documents with the legend "Street Light" on the lid and having a two stainless steel bolt lids (or approved equal). Hand-holes shall be constructed with no base in box bottom. Each handhole shall be supplied with one lid tool for removing covers. Covers shall support an 8000 pound load over a 10 inch square with a minimum test load of 12,000 pounds. Covers subject to heavy loads shall support a 15,000 pound load over a 10 inch square with a minimum test load of 22,568 pounds. A coarse aggregate drain shall be provided.

3. 24 inch Round Handhole.
The 24 inch round handhole shall be 5 inch thick concrete by 24 inches in diameter by 36 inches deep with a cover as specified in the plan details with the legend “Traffic Signal” set flush to the ground. Each HH 24-36 handhole shall have a ground rod as specified driven into the center of the handhole (for later use). The body of the pre-cast handhole shall meet the requirements for Class 1500D concrete pipe insofar as applicable. Cast iron ring and cover may be rated light duty for non-traffic areas (145 pounds minimum); but shall be rated heavy duty for traffic areas (320 pounds minimum) where shown on the plans. Deviations in weights shall not exceed ± 5%. The cover shall have the words “TRAFFIC SIGNAL” cast on the top of the cover. Cable hooks - four cable hooks shall be provided in all handholes as detailed on the plans. Cable hooks shall be galvanized steel with a minimum diameter of 3/8 inch and a minimum length of 5 inch and anchored in the wall of the handhole utilizing appropriate anchoring devices.

4. Handholes/Vaults in the immediate intersection shall have a ground rod driven in the handhole as specified in the drawings.

5. Unless pre-approved by the Engineer, removal and replacement of any concrete sidewalk to aid in the installation of the handhole/vaults shall be incidental to the price of the vault. A full panel shall be removed and reinstalled.

6. Handholes/Vaults shall be installed in a neat and workmanlike manner. When the use of forms is required they shall be set level and of sufficient thickness to prevent warping or other deflections from the specified pattern. A means shall be provided for holding conduit runs rigidly in place while the concrete is placed. All conduits shall enter the handhole at a depth of 12 inches from the bottom of the handhole unless otherwise specified. Any deviations from this requirement shall be approved by the Engineer. The ends of all conduit leading into the handhole shall fit approximately 2 inches beyond the inside wall. A coarse aggregate drain conforming to the dimensions shown on the plan details shall be provided. Cast iron rings and covers for handholes shall be set flush with the sidewalk or pavement and 1 inch above the surface of the ground when installed in an earth shoulder away from the pavement edge.

Any backfilling necessary under a pavement or paved sidewalk or within 2 feet of the pavement edge shall be made with stone screening. Damaged handholes/vaults or covers will not be accepted. Damaged handholes/vaults will need to be replaced prior to acceptance. Handholes/vaults are not to be installed in the flow lines of a ditch.

C. Conduit System.

1. The number, type, and size of conduit shall be as shown on the plans. Conduit shall meet the requirements of Articles 2523.03, N, and 4185.10 of the Standard Specifications.

a. Conduit shown on the plans as PVC conduit shall meet the requirements of NEMA TC-2, Type 2, and applicable UL Standards. HDPE conduit with an SDR of 13.5 will be allowed to be used in place of PVC conduit.

b. Conduit for interconnect runs shall be Inner duct as shown on the plans. Inner duct conduit shall be schedule SDR 13.5 high density polyethylene. Conduit shall provide nominal

duct size as indicated on the plans, shall be orange in color unless otherwise specified, and be longitudinally ribbed on the inside wall.

c. Conduit attached to structures shall be nonmetallic, similar in color to the structure, and rigid enough not to sag under its own weight plus the weight of its contents between brackets.

2. Conduit shall be placed as shown on the plans. All locations subject to minor changes pending City of Cedar Rapids Engineering. Change in direction of conduit shall be accomplished by bending such that the conduit will not be injured or its internal diameter changed. Bends shall be of uniform curvature and the inside radius of curvature of any bend shall not be less than six times the internal diameter of the conduit.

3. When it is necessary to cut and thread steel conduit, no exposed threads will be permitted. All couplings shall be tightened until the ends of conduits are brought together so that an electrical connection will be made throughout the entire length of the conduit run. All conduit and fittings shall be free from burrs and rough places and all conduit runs shall be cleaned, swabbed and reamed before cables are installed. Nipples shall be used to eliminate cutting and threading where short lengths of conduit are required. Damaged galvanized finish on conduit shall be painted with zinc rich paint. All fittings used with rigid steel conduit shall be galvanized steel only.

4. Approved conduit bushings shall be installed on the exposed ends of rigid steel conduit. Bell end fittings shall be installed on the exposed ends of PVC conduit. In all bases, conduit shall extend minimum of 4 inches above the finished surface.

5. Whenever converting from PE to PVC or PE to PE or PVC to PVC conduits splicing shall be accomplished as follows:

a. If splicing from PE to PE a fusion splice is required. Fusion splicing shall not cause significant interior deformation or ridges. If deformation or ridges are present the conduit needs to be cut and refused.

b. If splicing from PE to PVC the approved coupling is a Shurlock II system as manufactured by AD Technologies or approved equal for the appropriate size conduit.

c. If splicing from PVC to PVC, an approved PVC primer must be applied along with an approved PVC glue to seal the connection.

d. If existing splices are in place and need to be repaired, or coupling is needed for conduits with existing infrastructure, the approved coupling is the MOR Clamp or approved equal. The MOR Clamp is manufactured by AD Technologies. The MOR Clamp shall only be used with the approval of the engineer.

6. Conduit buried in open trenches shall be placed a minimum of 24 inches deep unless otherwise directed by the Engineer. Open trench methods of placing conduit will be permitted except where the conduit is to be placed under existing pavement. If conduit is installed in an open trench, the conduit must be placed on backfill for support. Conduit in pavement areas shall be placed to a minimum depth of 24 inches below the finished pavement surface or as directed by the engineer.

7. Tracer wire will be tied together at all locations. The tracer wire shall be pulled alongside of the bored or trenched conduit. Tracer wire for open-trench installation shall be a No. 10 AWG solid, PRO-TRACE® HF-CCS PE30 with orange insulation color. Conductor shall be soft- drawn, 21% IACS, copper clad steel, utilizing a AISI 1006 low carbon steel core (required to meet break load and flexibility), with break load of 448 pounds (55,000 psi). Conductor shall be extruded with a 30 mil, high density polyethylene, and meet the APWA color code of the buried utility line. Tracer wire shall be rated for direct burial use at 30 volts and RoHS compliant. Tracer wire shall be PRO-TRACE ® HF-CCS PE30 as manufactured by Pro-Line Safety Products

8. The backfill material in open trenches shall be deposited in layers not to exceed 6 inches in depth and each layer shall be thoroughly compacted before the next layer is placed. Backfill material shall be free of cinders, broken concrete, or other hard or abrasive materials. All surplus material shall be removed from the public right-of-way.

9. Whenever excavation is made across parkways, driveways or sodded areas, the sod, topsoil, crushed stone or gravel shall be replaced or restored as nearly as possible to its original condition and the whole area involved shall be left in a neat and presentable condition. Concrete sidewalks, pavements, base courses and bituminous surfaces shall be replaced with new materials. Surface restoration in grass areas shall be considered incidental to the bid items of the project and will not be paid for separately unless a bid item has been provided for the surface replacement.

10. "Pushed" conduit shall be placed by jacking, pushing, boring or any other means necessary to place the conduit without cutting, removing, or disturbing existing pavement. The size of a bored hole shall not exceed the outside diameter of the conduit that is to be placed. Tunneling under the pavement or water jetting will not be permitted. Pits for boring shall not be closer than 2 feet to the back of curb unless otherwise directed by the Engineer.

11. All conduit openings in the controller cabinet, handholes, and bases shall be sealed with an approved polyurethane expansion joint sealing compound such as BASF Sonolastic NP1, Bostik Chem-Calk 915, Tremco Vulkem 116 or approved equal. This compound shall be readily workable soft plastic. It shall be workable at temperatures as low as 30°F, and shall not melt or run at temperatures as high as 300°F.

12. All empty conduits to have flat polyester pull-tape (1250 pounds tensile) with footing markings, when connecting to existing conduit. This pull-tape is to be attached to the expandable plug and sealed within conduit with a minimum of 48inches of slack in the pull- tape on each end (96 inches total).

13. Conduits entering handholes or vaults shall enter with no more than 4inches or less than 1inch of exposed conduit inside of the handhole. All conduits shall contain an orange No. 10 AWG tracer wire and be plugged with an expandable rubber plug.

14. Trenches need to be excavated straight and true with bottom uniformly sloped to low points. Excavate trenches to a depth of 3 inches below invert of pipe, unless otherwise indicated. Backfill with porous backfill 2 feet over water lines and conduit followed by native material (no organic material or rocks larger than 1 inch or debris) in all areas where no pavement would be placed. Course sand backfill material with hydraulic compaction can be used in trenches that are too narrow to be compacted by mechanical compactors. Trenches under all paved surfaces will be backfilled with compacted limestone to sub-grade elevation. In lawn areas, any settling that occurs shall be repaired and re-graded before seeding is done.

15. The length measured for payment shall be the plan distance along a straight line measured between changes in direction and the center of terminal structures.

16. General Guidelines (unless otherwise specified)

    a. Street lighting conduit will be installed from the service pedestal into the hand-hole located next to the traffic controller.

    b. All empty and used conduits at foundation locations shall be plugged. Empty conduits shall be plugged with appropriate sized duct plugs. Conduits with conductors shall be plugged with duct seal.

D. Wiring.

1. Where practical, color codes shall be followed so that the red insulated conductor connects to the red indication terminal, yellow to yellow, and green to green. Circuits shall be properly labeled at the controller by durable labels, or other appropriate methods, attached to the cables.

2. All cable runs shall be continuous from connections made in the handhole compartment of street light bases to the terminal compartment in the controller cabinet. Splicing will not be allowed in underground handholes unless specifically called for on the plans.

3. Power lead-in cable runs shall be continuous from the Power Company service point to the service pedestal and from the service pedestal to the controller cabinet.

4. Slack for each cable shall be provided by a 4 foot length in each handhole and a 2 foot length in each street light pole, pedestal and controller base (measured from the handhole compartment in the pole to the end of the cable). No coils for grounding and bonding wire will be permitted in the handholes.

5. Cables shall be pulled through conduit by means of a cable grip designed to provide a firm hold upon the exterior covering of the cable or cables, with a minimum of dragging on the ground or pavement. This shall be accomplished by means of reels mounted on jacks, frame mounted pulleys, or other suitable devices. Only vegetable lubricants may be used to facilitate the pulling of cable.

6. Conductor dimensions on construction plans are plan length between bases, contractor must adjust for any vertical runs.

E. Electrical Cable.

1. General.

a. Electrical cable for intersection signalization shall be rated 600 volts minimum.

b. The number of conductors and size of all electrical cable shall be as shown on the plans.

c. All wire shall be plainly marked on the outside of the sheath with the manufacturer's name and identification of the type of the cable.

2. Street Light Cable.

Street light cable for underground lighting circuits shall be single conductor, Class B stranded, annealed copper, 600 volt, 90°C Type XHHW. Street light cable shall be of the size shown on the plans. All underground cable shall be in conduit of the type and size shown on the plans and shall conform to the National Electric Code currently in effect. Unless otherwise specified, use a three conductor No. 6 AWG XHHW (Black, White, Green) to feed between the luminaires and the meter pedestal.

3. Cable Installation.

a. Cable.

1) All classes of cable shall be shipped on substantially constructed reels plainly marked as to size, type, and insulation identification. Only one length of cable will be shipped on each reel. All cable must be new. Damaged cable, or repairs to damaged cable, will not be permitted.

2) Prior to the installation of underground cable, the Contractor shall make sure that the conduit is open, continuous, free of water, and clear of debris. The cable shall be

installed in such a manner and by such methods as to ensure against harmful stretching of the conductor, injury to the insulation, or damage to the outer protective covering of the cable. No splices or joints will be permitted to be drawn inside the conduit. Where more than one cable is to be installed in the conduit, all shall be pulled at the same time. No splices or joints shall be made in any cable outside of pole bases or traffic signal heads. All splices or joints of cable in pole bases shall be made waterproof using high grade rubber splicing tape; and the finished splice or joints shall be waterproofed and covered with vinyl plastic tape to provide mechanical protection in accordance with these special provisions. An approved cable lubricant may be used to aid in pulling cables through conduit when necessary to avoid stretching the conductor or damaging the insulation.

3) The Contractor shall provide drip loops at all signal hangers, wire inlet and service entrance heads. All wire inlets on the poles and signal heads shall be sealed with duct seal.

b. Splices and Connectors.

1) All splices and connectors shall be covered with rubber type electrical insulation tape, applied 1 1/2 times the thickness of the cable insulation. All bolt type connectors shall be wrapped with one layer of paper tissue prior to the application of the electrical insulation tape. The insulation tape shall be covered with a 1/2 lapped layer of thermoplastic electrical insulating tape extended past the rubber insulation tape at each end of the splice. Splices shall be finished with an application of asphaltic

impregnated open mesh fabric tape or coated with a waterproof compound. A layer of conductive shielding tape shall be applied to any splice of two shielded cables to continue the shield through the splice. All splices shall be made in accordance with the cable manufacturer's recommendations.

2) Connectors shall be either a bronze, bolted type, soldered, or a compression sleeve type. Connectors of the proper size to fit the largest conductor in the connection shall be used to join wires in pullboxes and pole bases. All connectors shall be Underwriters Laboratory (UL) approved.

3) Wire ends must be thoroughly cleaned after the insulation is stripped off to insure complete contact with another wire, or the connector. If strands are damaged when the insulation is removed, the section of cable must be discarded. Nicked or damaged conductor strands will not be permitted inside of connectors. Loose wire ends shall not be used as "shims" to make a connection.

4) Covered connections must be arranged so that they will not be in contact with pullbox lids or metal pole bases.

5) All splices and connections shall be capable of satisfactory operation under continuous immersion of water.

6) Cable connections in controller cabinets shall be made at the terminal boards provided for this purpose. All stranded wires inserted under a binder head screw shall be equipped with a solderless pressure type space connector with a pre-insulated shank. All solid wire shall have an eye bend and shall not have a terminal connector.

F. Concrete Bases.

1. Concrete bases/foundation for light poles, pedestal poles, electrical services and battery backups

should be precast from a pre-approved vendor. The ends of the conduit stubs shall be capped.

2. Prior to setting poles, the anchor bolts shall be covered in such a manner as to protect them against damage and to protect the public from possible injury. The foundations must be given a minimum of seven days to cure before poles are erected.

G. Bonding and Grounding.

1. Ground rods must be UL listed, made of copper-clad steel with a nominal diameter of 5/8 inches. Ground rod sections must be a minimum of 8 feet in length and manufactured for the sole purpose of providing electrical grounding.

2. Ground rod assemblies: consisting of one or more ground rods coupled together, such that the total length of the assembly is a minimum of 20 feet, driven into the earth at a single

point, without disrupting the electrical continuity of the assembly. Ground rod assemblies shall be full length as shown on the plans and each rod length shall be the tapered end style, not threaded.

3. Ground Rod Array: is the inter-connection of the ground rods at each pole or structure at the site, consisting of two or more ground rod assemblies, bonded together in accordance with NEC Article 250 bonding.

4. Ground wires shall be connected to the ground rods with one piece non-ferrous clamps which employ set screws as tightening devices ILSCO clear tap cat no. PCT(4/10), often referred to as Acorn Nuts. Connections to ground rods need not be taped. Ground rods and assemblies shall be of the length specified on the plans.

5. Cabinet location shall use a 20-foot ground rod assembly as specified in G.2 with a No. 4 AWG, bare, tinned, solid annealed copper ground wire bonded back to the cabinet earth and electrical neutral bus at the cabinet and main service disconnect.

6. Ground rod assembly electrodes shall be provided in and accessible at the adjacent hand holes at each structure including but not limited to signal poles, pedestal poles and controllers as detailed on the plans. The entire intersection grounding array shall be a single ground array and bonded back to the cabinet ground along with the cabinet and main disconnect.

7. All metal structures and their associated grounds shall be bonded together to the cabinet main disconnect, (NEC Article 250 Bonding). Ground rods should extend to just below the top of the manhole or vault and be located between 3inches and 6inches of the side to allow measuring of ground array using a clamp- on tester and inspection of the connections as part of a preventative maintenance program.

8. All ground wires between metal structure and nearest ground rod shall be No. 4 AWG, bare, solid, annealed copper wire unless otherwise specified on the plans. Each steel pole or pedestal shall be firmly connected to the ground rod provided, by means of an internal grounding terminal or earth lug. Placing the ground wire under an anchor bolt nut, anchor bolt cover, or similar device will not be permitted.

9. All conduit, steel poles, pedestals, and hand holes in the immediate intersection shall be bonded between structures and cabinet to form a continuous effective ground array. Bonding ground wires shall be No. 6 AWG, XHHW insulated green, multi-strand copper wire or equal connected by appropriate sized split bolt or crimp connectors to the No. 4 AWG ground wires specified in section G.5.

10. The No. 6 AWG, XHHW insulated green multi-strand copper wire shall be installed in all PVC conduit that carries electrical conductors (including low voltage).

H. Replacing Damaged Improvements.

1. Improvements such as sidewalks, curbs, driveways, roadway pavement and any other improvements removed, broken, or damaged by the Contractor shall be replaced or reconstructed with the same kind of materials found on the work or with materials of equal quality. The new work shall be left in serviceable condition satisfactory to the Engineer. Whenever a part of a square or slab of existing concrete sidewalk, driveway, or pavement is broken or damaged, the entire square or slab shall be removed and the concrete reconstructed.

2. Surface restoration shall be considered incidental to the bid items of the project and will not be paid for separately unless specified to be replaced and a bid item is provided.

I. Roadway Street Lights (40-Foot-Tall Type P1 or P2).

1. City of Cedar Rapids architectural style lighting shall use a custom painted black manufactured by Valmont Structures from templates on file. Pole shall have a four anchor bolt style breakaway bolt base with 12inch bolt circle, 10-foot arm length.

2. LED luminaires shall be the following based on luminaire distribution requirements.

    a. Type (P1) Lumec / Philips brand RoadFocus RFL-241W112LED4K-G2-4-UNIV-Cobra head style multi-tap luminaires set for 240 volt operations with housing of single piece aluminum castings with integral slipfitter for two-inch bracket mounting.

    b. Type (P2) Lumec / Philips brand RoadFocus RFL-241W112LED4K-G2-R3M-UNIV-Cobra head style multi-tap luminaires set for 240 volt operations with housing of single piece aluminum castings with integral slipfitter for two-inch bracket mounting.

    c. Luminaires shall multi-tap luminaires set for 240 volt operations with housing of single piece aluminum castings with integral slipfitter for two-inch bracket mounting. The slipfitter shall be arranged to accommodate a 2 inch standard pipe bracket, shall consist of bracket clamps, and shall provide for vertical adjustment and horizontal leveling of the luminaire. A weatherproof, hinged access door shall be provided for quick access to the terminal block and mounting arrangement. All exposed metal parts shall be made from non- ferrous metal or stainless steel.

3. Luminaire distribution shall be either Type III or Type IV, and may vary depending on the width of the Roadway.

4. All lights should be controlled via metered lighting controller.

J. Electrical Service.

The service pedestal shall be installed as shown in the plans. 2 inch conduit connecting the service pedestal and the control cabinet shall be installed as shown in the plans. The meter shall be a Linn County REC approved meter. The contractor shall verify acceptability with Linn County REC and coordinate power connection to the meter from the power source.

236007.03 METHOD OF MEASUREMENT.

Lump sum item; no measurement will be made.

236007.04 BASIS OF PAYMENT.

Payment will be at the lump sum price for “LIGHTING”.