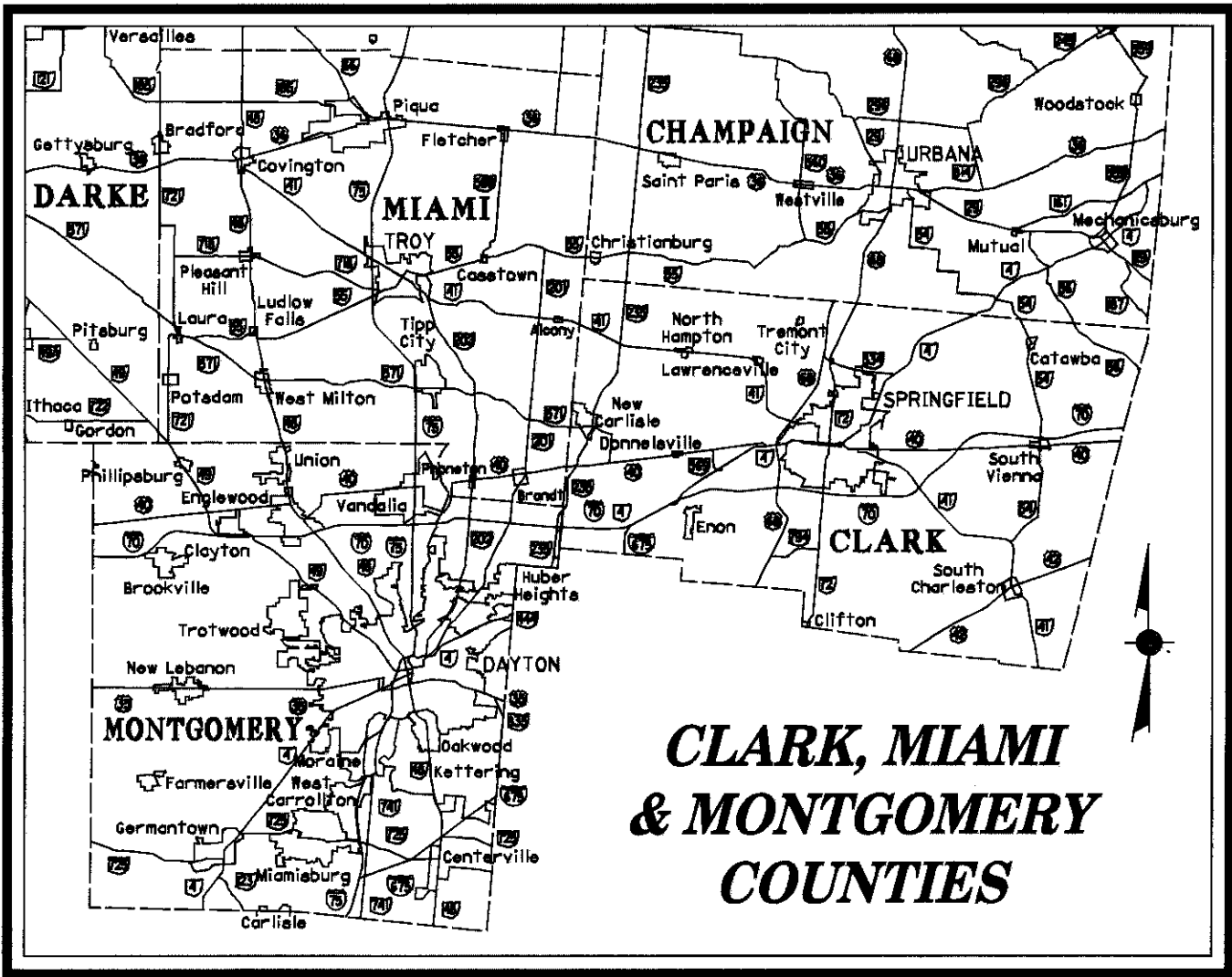


INDEX OF SHEETS

Title Sheet 1
Location Maps 2 thru 4
General Notes 5 thru 16
Inventory Sheets . . . 17 thru 20
General Summary . . . 21 thru 25
Traffic Control 26

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS - DISTRICT SEVEN
CLARK, MIAMI & MONTGOMERY COUNTIES
2000 LIGHTING MAINTENANCE PLAN

CLA-70/75/75-3.43
000463 09-13-00
PID# 21446 DIST. 07



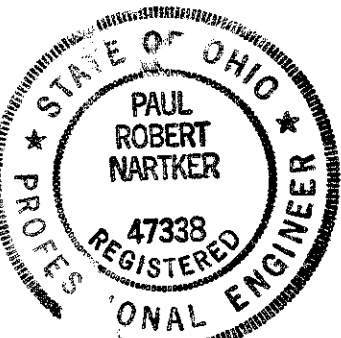
1997 SPECIFICATIONS

The Standard 1997 Specifications of the State of Ohio, Department of Transportation, including changes and Supplemental Specifications listed in the plans and proposal shall govern these improvements.

I hereby approve these plans and declare that no portion of these improvements will require the closing of the highways to traffic. Provisions for the maintenance and safety of traffic will be as indicated in the proposal.

05-11-00 Date Approved William L. Harrison District Deputy Director of Transportation
6-6-00 Date Approved Gordon Proctor Director, Department of Transportation

ENGINEER'S SEAL



Signed *Paul Robert Nartker*
Date 5-11-00

PLAN PREPARED BY:
D7
Production

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
CALL 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS MUST BE CALLED DIRECTLY

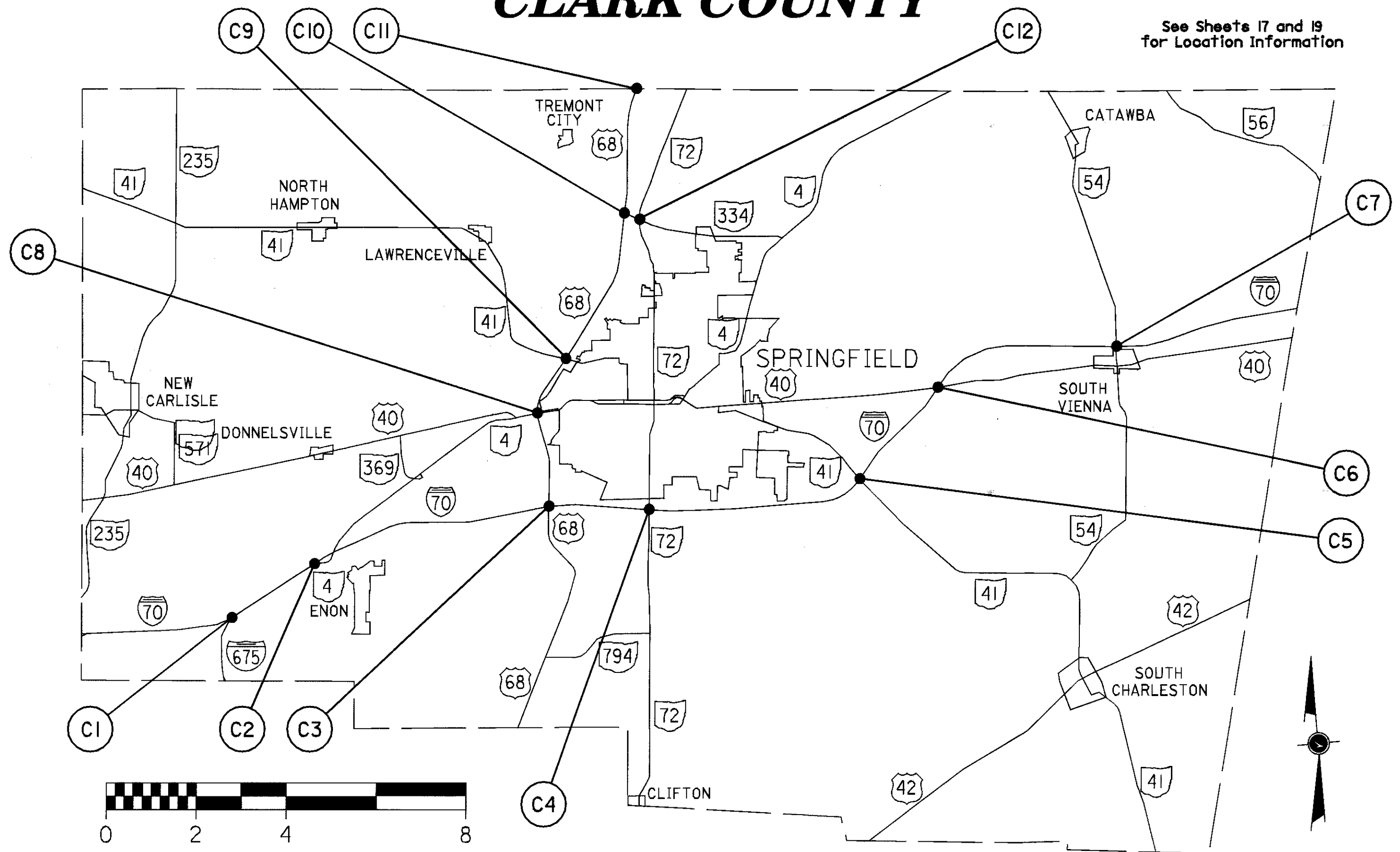
SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

HL-10.11M	5/1/95	HL-30.11M	3/31/95	HL-60.11M	5/1/95	MT-98.12M	6/24/93	TC-22.10M	2/1/94
HL-10.12M	5/1/95	HL-30.21M	5/1/95	HL-60.12M	3/31/95	MT-98.13M	6/24/93		
HL-10.13M	5/1/95	HL-30.22M	3/31/95	HL-60.21M	3/31/95	MT-98.14M	6/24/93	TC-31.20	3/1/79
HL-10.31M	3/31/95	HL-30.31M	5/1/95	HL-60.31M	3/31/95	MT-98.15M	6/24/93	TC-31.21M	3/31/94
		HL-30.32M	8/14/96			MT-98.16M	6/24/93		
HL-20.11M	3/31/95			MT-35.10M	1/30/95	MT-98.17M	4/25/94	TC-32.10M	3/31/94
HL-20.14M	5/1/95	HL-40.10M	3/31/95	MT-35.11M	1/30/95	MT-98.18M	4/25/94	TC-32.11M	3/31/94
HL-20.15M	3/31/95			MT-95.30M	4/25/94				
HL-20.21M	8/31/94	HL-50.11M	3/31/95	MT-95.31M	4/25/94	MT-105.10M	4/25/94		
		HL-50.21M	8/31/94	MT-97.10M	4/25/94	MT-105.11M	4/25/94		

2000 LIGHTING MAINTENANCE LOCATION MAP

CLARK COUNTY

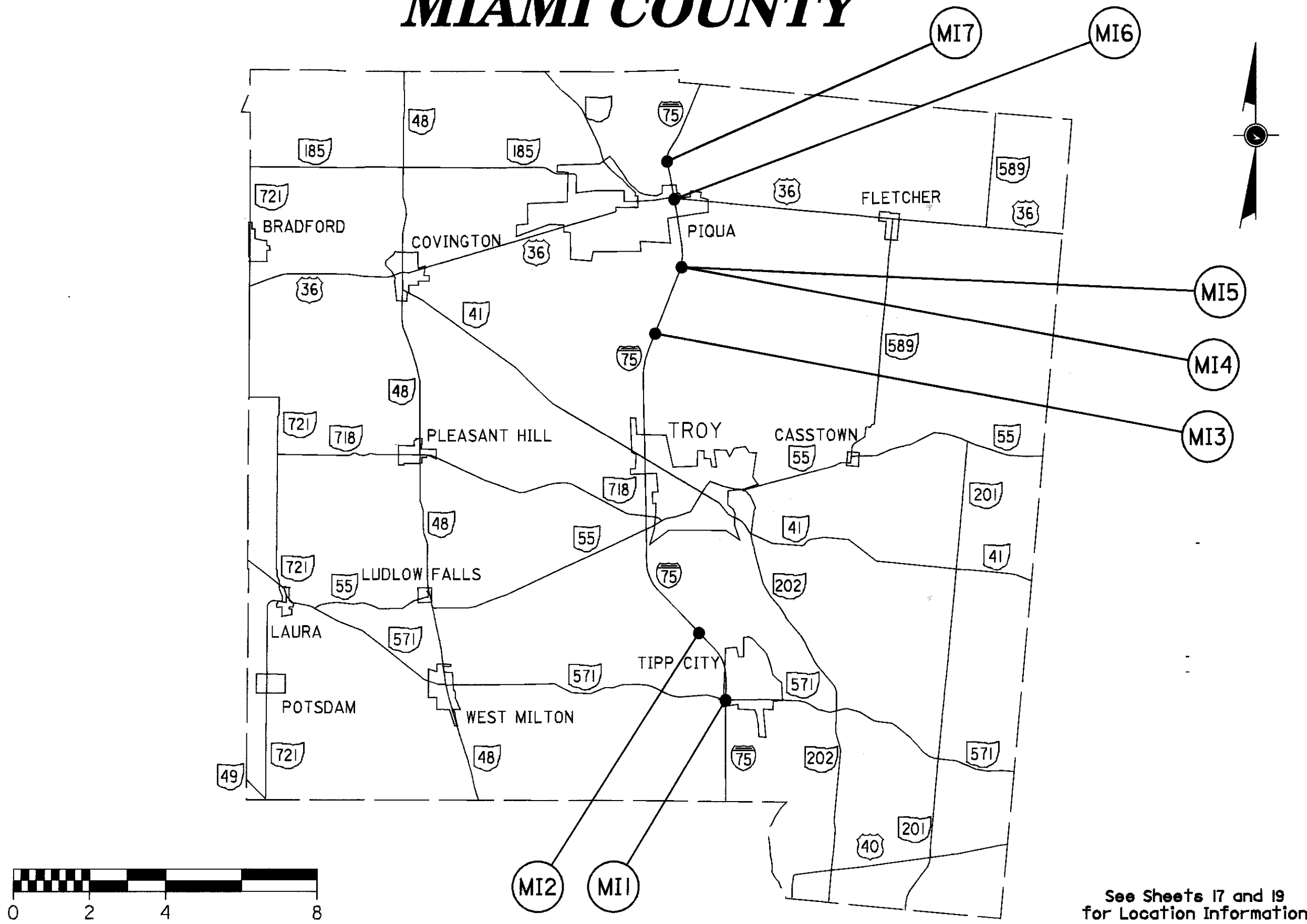
See Sheets 17 and 19
for Location Information



LOCATION MAP

CLA/MIA/MOT-70/75/75
3.43/Various/Various

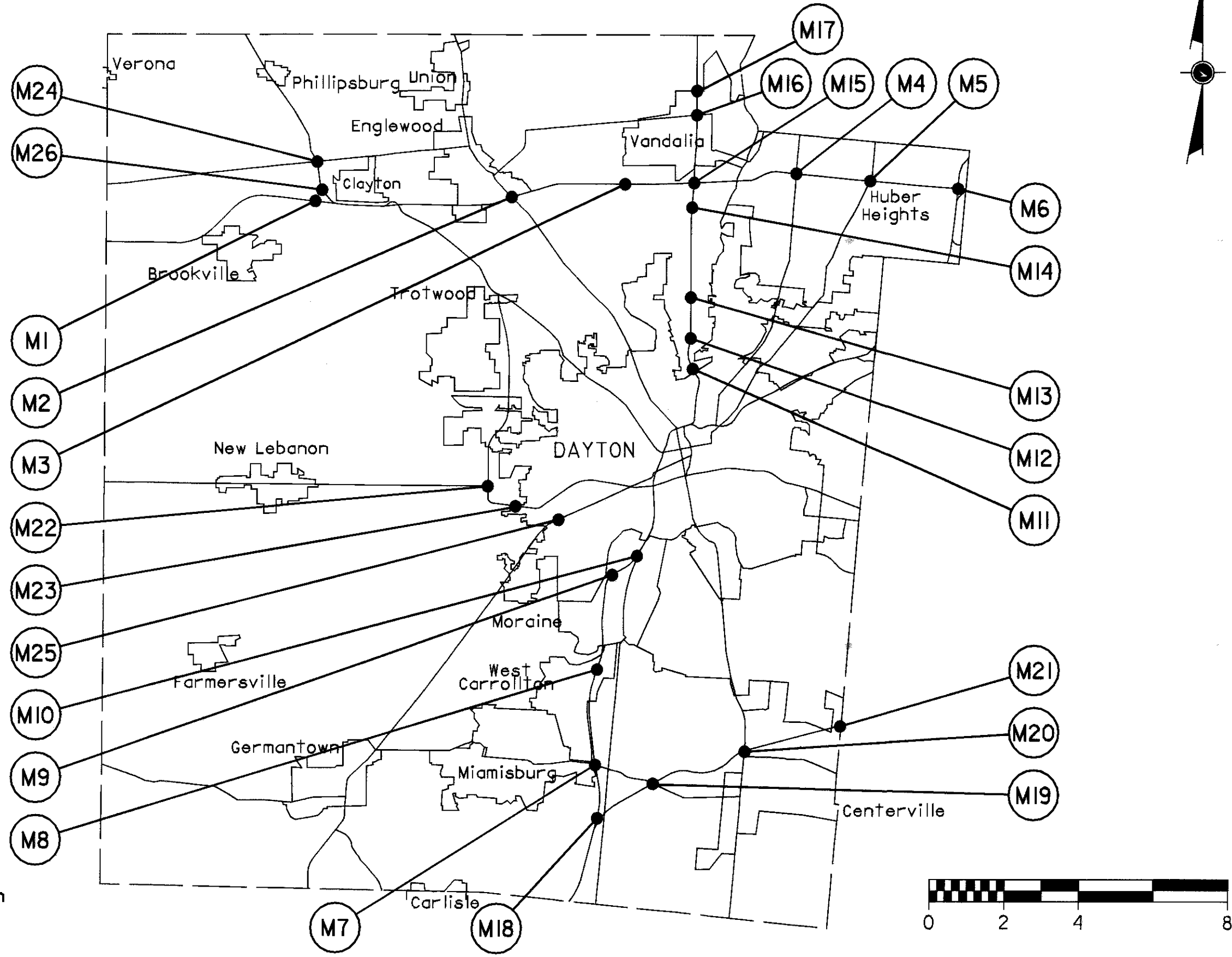
2000 LIGHTING MAINTENANCE LOCATION MAP
MIAMI COUNTY



See Sheets 17 and 19
for Location Information

2000 LIGHTING MAINTENANCE LOCATION MAP

MONTGOMERY COUNTY



See Sheets 18 and 20
for Location Information

SCOPE

The purpose of this contract is to have the Contractor maintain the highway lighting system for roadway and sign lighting on the State Highway System in the areas shown on the location maps of this plan, in an area known as the Ohio Department of Transportation, District 7, at a safe and reliable level. To maintain the lighting system properly and efficiently, the Contractor will have to provide both continuing Minimal Maintenance and complete Major Maintenance of the aforementioned lighting system. Such maintenance work includes acceptance of complete responsibility and liability for proper operation and maintenance of the lighting system.

It is the intent of this contract that Minimal Maintenance takes precedence over Major Maintenance unless otherwise directed by the Engineer. First priority is to be given to those tasks which keep the maximum number of lights in operation. The Contractor shall determine repair requirements, trouble-shoot defective underground circuits, and replace and repair defective or worn out parts, fixtures, cable and duct, poles, control cabinets and switches, and any other appurtenances in this contract at the direction of the Ohio Department of Transportation (ODOT) Engineer (hereinafter referred to as the Engineer).

The Contractor will give this work his constant attention and will maintain materials, equipment and labor to perform as needed from the first day of the contract to the last.

The Contractor will submit catalog cuts for all of the items of work within twenty-one (21) days after the award of the contract to the Engineer. Failure to comply with any of the above will be regarded as failure to execute the contract and shall be just cause for cancellation of the award per Section 103.07 of the Construction and Material Specifications.

In this contract, "Minimal Maintenance" will include routine preventative maintenance, such as individual lamp replacement, group cleaning of refractors and reflectors, group cleaning of frangible bases and replacing parts which are worn, defective or missing, (e.g., connector kit fuses, control box fuses, lamps, or any other incidentals necessary to comply with the minimal maintenance program).

The term "Major Maintenance" means any repair of the lighting system beyond Minimal Maintenance and is categorically listed by reference number in the pay items under "Major Maintenance". Any work not covered specifically under Major Maintenance, will be considered a part of Minimal Maintenance. Major Maintenance consists of the investigation and repair of reported outages of individual systems or circuits.

All Major and Minimal Maintenance will be performed under the direction of the Engineer, in accordance with pay items listed herein.

The Contractor will be required to furnish all labor, equipment, and materials and supplies necessary to perform this contract. Work under this contract will consist of, but not limited to: The furnishing, transporting and assembling of replacement materials and devices; the repair or replacement of devices; the removal of defective or damaged materials and devices; and the restoration and cleanup of the highway. All work performed under this contract shall be done in a workmanship-like manner, in accordance with the plans and specifications as set forth herein. The contract shall be performed in a manner which will provide continuous repair service of the subject lighting system.

TERM OF THE CONTRACT

The term of the contract shall be twenty-four (24) months from the date of the execution of the contract.

COOPERATION BETWEEN CONTRACTORS

This contract may be entirely or partially within the work limits of another contract.

The Contractor shall cooperate with the other Contractor(s) in accordance with 105.07 and arrange a mutually acceptable work schedule, subject to the approval of the Engineer. Any proposed changes to this schedule shall meet with the approval of the Engineer. Any conflicts between Contractors involving work schedules, work area, or cooperation will be resolved by the Engineer. The Contractor shall notify other Contractors any time a circuit must be energized. No two Contractors may work on energized circuits at the same time.

Compensation for the above cooperation will be incidental to the various pay items included within this project.

LAWS AND REGULATIONS

The Contractor shall follow strictly and accurately the specifications outlined in the contract, as well as any instructions regarding the general scope of work to be performed given by the Engineer. As to any part of the job not covered thereby, the Contractor shall perform all work in accordance with the laws of the State of Ohio, all municipal ordinances, all regulations and requirements of the Public Service Commission, the Standards of the National Electric Code, Bid Proposal, pertinent items of the Ohio Department of Transportation Construction and Material Specifications, Standard Construction Drawings, and the Ohio Manual of Uniform Traffic Control Devices for Streets and Highways.

The Contractor shall agree to replace and/or repair without any cost whatever to the Department of Transportation, all and every part of any job done by the Contractor, if within sixty (60) days after the completion of such job, it is found by the Department's Officials, to have been done defectively or to have been performed in any way at variance with the specifications and instructions furnished and given by the Engineer or in a manner contrary to law, the regulations and requirements of the Public Service Commission or the National Electric Code. The Engineer will give the Contractor written notice of any such defects or variances in the work performed.

INVENTORY UPDATE

The inventory will be updated to include new luminaires and other lighting equipment added during this period (if any), less any deletions representing equipment removed, (if any). The inventory shall be updated upon receipt of written notice to the Contractor from the Engineer.

SUBMITTALS

The following items shall be submitted to the Engineer for approval at the preconstruction meeting:

- 1. A complete set of all forms, schedules, and procedures to be used by the Contractor in the performance of this contract.
- 2. A complete inventory list of the materials the Contractor intends to keep on hand at all times for the duration of the contract.

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GENERAL NOTES

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5
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REPORTS

The contractor shall furnish the Engineer with two copies of the reports detailing all work performed in connection with this project. Reports shall be submitted within 2 weeks of the performance of the work. Reports shall specify:

- 1. Date/Time notified
- 2. Notified by
- 3. Arrival time
- 4. Nature of reported problem
- 5. Problem found
- 6. Date/Time repairs performed
- 7. Personnel making repairs
- 8. Location/Pole number
- 9. Material used

BASIS OF BILLING

On or about the twenty-third day of each month, the Contractor will present an invoice, in duplicate, to the Engineer for all work done during the previous month. The Engineer will sign one (1) copy and return this copy to the Contractor. This signed copy is only proof that the Engineer received the invoice, but it is not an agreement to pay.

Payment will be made for all authorized work performed at the contract unit price for each item.

FACILITIES

The Contractor shall provide a storage facility area for stocking all lamps, poles and spare parts. This facility shall be located within the project area.

PERSONNEL

The Contractor shall assign a full time supervisor for this project, who shall comply at all times to the plan requirements and specifications as interpreted and instructed by the Engineer. The Contractor shall employ journeymen electricians who have completed a program registered with the Department of Industrial Relations and had four (4) years of on-the-job training in the electrical trade. This training shall have included twenty (20) weeks of classroom training. If apprentices are employed under this contract, they shall be registered in a bonafide apprenticeship program recognized by the Bureau of Apprenticeship and Training of the State or U.S. Department of Labor.

The Contractor shall have a foreman assigned to each crew. The foreman shall be a qualified journeyman electrician and shall be present when any work is performed. The Contractor shall not change the foreman assigned to the crew without written notice to the Engineer. Groundmen and Equipment Operators may be used, at the approval of the Engineer, when non-electrical work is performed.

In addition to 108.05, it is required that the Contractor have the capability to provide a minimum of two (2) fully equipped four (4) person crews. This does not preclude the use of smaller crews on items requiring fewer people with prior approval of the Engineer.

Certification papers for the journeymen electricians that will be working on the project shall be presented at the preconstruction meeting.

EQUIPMENT

The Contractor shall provide all vehicles and equipment needed to perform the work as described herein. An example of equipment the Contractor should provide is as follows:

- 1. Enough vehicles to transport all materials, equipment, and crews for both Minimal and Major Maintenance.
- 2. A boom to set poles up to 50 feet.
- 3. At least a one (1) personnel bucket, which should be able to reach luminaires on 55 foot poles.
- 4. An Auger
- 5. A Trencher
- 6. A Flashing Arrow Panel, Type "A" (SCD TC-35.10M)

All equipment shall meet the requirements of Section 108.05 of the CMS.

All vehicles which are used in the performance of any work under this contract shall be identified with the Contractor's name at all times such vehicles are on the project. This shall also apply to self-propelled vehicles leased by the Contractor.

The Contractor shall also have a test instrument capable of pinpointing troubles in underground circuits so that only a small amount of cable would have to be uncovered.

MATERIAL

All materials utilized shall be equal to or better than the original equipment and meet construction and material specifications 713 and 731, unless an alternate is approved by the Engineer.

All material utilized shall be stored within the project limits.

The Contractor must furnish all necessary labor, tools, materials, cleaning solutions, and equipment required, including the necessary vehicles and facilities for the transportation of lamps, glassware, and all other pertinent material necessary to repair and maintain the system.

The Contractor must maintain a ninety (90) day supply of all material up to the last ninety (90) days of the contract at which time he shall maintain enough stock to finish the contract. The quantities on hand depend on the quantities required to maintain the system. Inventory is subject to inspection by the Engineer.

Roadway Lighting Lamps and Luminaires are High Pressure Sodium (HPS). Supplementing 625.07 and 713.11, 13, 14 of the Specification, HPS Lamps shall be of the type indicated in these plans and shall be General Electric "Lucalox", Phillips "Ceramalux", Sylvania "Lumalux" or equal, approved by the Engineer. All HPS Lamps shall be of the 100 Volt Design in those sizes where different arc voltages are available.

Type B Luminaires shall have single rated 480 or 240 Volt, 150, 200, 250 or 310 Watt Integral Ballasts for use with High Pressure Sodium Lamps and shall be General Electric M400, Cooper Lighting OVD, American Electric 125/126 or equal, as approved by the Engineer.

Type C Luminaires shall have single rated 480 or 240 Volt, 310 or 400 Watt Integral Regulator Ballasts and shall be American Electric 327/328 or equal, as approved by the Engineer.

Underpass Luminaires shall be Holophane "Underpass Wallpack", General Electric or equal, approved by the Engineer, and shall be furnished with an integral fuse holder and 10 ampere fuse. The Integral HPS Ballast shall be of a regulator type for 480 Volts, 100 Watts.

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GENERAL NOTES

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400 Watt Luminaires for Tower Lighting shall have single rated 480 Volt Regulator Type Ballasts designed for use with 400 Watt HPS Lamps, and shall conform to the photometric requirements for asymmetric or symmetric distribution as required.

1000 Watt Luminaires for Tower Lighting shall have single rated 480 or 240 Volt Regulator Type 1000 Watt Ballasts designed for use with 1000 Watt HPS Lamps, and shall conform to the photometric requirements for asymmetric or symmetric distribution as required.

All material in stock at the end of the contract will be the property of the Contractor and will not be purchased by the State.

HAZARDOUS MATERIALS

No material furnished under this contract shall contain Polychlorinated Biphenyls (PCB's). Transformers, Ballasts and Capacitors shall be marked "No PCB's in accordance with the Federal Environmental Protection Agency Regulation 40 CFR 761.

COMMUNICATION

The Contractor shall furnish the Engineer with a single telephone number that is answered twenty-four hours a day, seven days a week by a person authorized to dispatch repair crews (pagers, answering machines, voice mail, etc. are not acceptable). In addition, the Contractor shall provide and maintain a pager for the Contractor's crew foreman. The pager shall be worn during regular working hours and the contact number shall be listed with the Engineer.

RESTORATION AND CLEAN UP

The Contractor shall restore all disturbed areas to a condition equal to that existing before the work was started per CMS 104.06.

Broken glassware from lighting units in the work area shall be cleaned up by the Contractor. The area shall be cleaned by sweeping so that it is free of broken glass. The glass which is swept up shall be disposed of in regular rubbish disposal units. All broken concrete shall be disposed of by the Contractor off of the Right-of-Way. Payment for restoration work shall be included in the unit price bid for the various items.

UTILITIES NOTIFICATION

The locations of existing underground utilities are not shown on the plans, but can be obtained from the owners of the utilities.

A list of utilities and owners will be available to the Contractor at the preconstructing meeting. These utility companies may have underground installations along the various routes affected by this project. This is not to be construed as a complete list, but rather a directory of the most frequently encountered companies.

DAMAGE DUE TO TRAFFIC ACCIDENTS

Knockdowns caused by roadway traffic will be repaired by the Contractor as authorized by the Engineer and billed to the Department under Major Maintenance. The Contractor shall, on the Daily Report, make out a summary of the actual cost of repairs by location, so that the State can claim damages from the third party. Reimbursement from the third party for repairs or damages to State property shall not be made directly to the Contractor.

NOTIFICATION OF ACCIDENTS AND PROPERTY DAMAGE

The Contractor shall immediately report to the Department any fatalities or serious injuries to either employees of the Contractor or members of the public, and any extensive damage to property resulting from the performance of work in this contract.

GENERAL NOTES

These notes outline the requirements and specifications which shall be met when performing continual Minimal Maintenance and complete Major Maintenance service.

The Contractor shall furnish detailed report forms covering all work performed for the Department. Reporting procedures must follow specifications as listed under Report and Tag Procedures.

CONVERSION OF METRIC STANDARD DRAWINGS

The metric standard drawings referenced in this plan shall be converted to English units using SI (Metric) to English Conversion Factors provided in section 109.011 of the 1997 Construction and Materials Specifications. The appendix of ASTM E 380 shall be utilized for any additional conversion factors required. Conversions shall be appropriately precise and shall reflect standard industry English values where suitable.

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GENERAL NOTES

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MINIMAL MAINTENANCE BY CATEGORY

GENERAL

Minimal Maintenance is of a routine preventive nature, which consists of an initial inspection, furnishing data, cleaning and replacing minor worn parts which have expended their useful life, replacing parts which are defective or missing, and removing and disposing of these materials off the project limits.

The Contractor shall accept full responsibility for repairing and maintaining continuously, the street and sign lighting system from the line taps of the utilities' distribution system. This includes overhead wiring back to where the circuit goes underground. (For underground repair, see Major Maintenance.) This service is to include all electrical and mechanical repair against a monthly charge per fixture, as bid in the contract. An individual charge is to be placed against each type of fixture in such a manner that it may be added or deleted from the contract as changes are made.

The Contractor shall replace every burnt-out lamp on the project within 120 days of the contract startup date and continue to replace lamps as failures occur for the duration of the contract. Failure to provide evidence that initial replacement of burnt-out lamps has been performed may result in loss of fixture payment for each month that the work is not completed.

All work included in Minimal Maintenance to restore component parts of the lighting system to normal operation shall be performed within seventy-two (72) hours after receiving notification of their malfunction.

The Contractor shall respond within two (2) hours to notification of a pole knockdown during normal working hours (7:30 a.m. to 4:00 p.m. Monday thru Friday) to restore the area to safe condition for the traveling public. This shall include, but not limited to, the moving of the pole to a safe location, securing electrical circuits, etc. This will be considered Minimal Maintenance.

REPORT AND TAG PROCEDURE

The Contractor must, on a daily basis, document all Minimal Maintenance performed by filling out a Minimal Maintenance Report. All work under Major Maintenance will be documented by filling out a Major Maintenance Report. Any malfunction unable to be corrected by the investigating crew will be documented by using the appropriate report form.

The required report forms will be provided by the Contractor at the preconstruction meeting for approval. All forms will be filled out by the Contractor in duplicate. The original is to be given to the Engineer and a copy is to be retained by the Contractor. These completed report forms must reach the Engineer's Representative no later than Monday of each week for the previous week's work.

Failure to provide evidence that Minimal Maintenance is being performed for any given period may result in the loss of payment for the affected fixture for that particular period.

CLEANING AND MINIMAL MAINTENANCE OF FIXTURES

All fixtures will be included in a Minimal Maintenance program. Cleaning the fixtures and individual lamp replacement shall be done simultaneously. The following Minimal Maintenance shall be performed routinely, as required, to maintain the lighting system in a safe and efficient manner for the traveling public.

I. Luminaires - Any damaged or missing luminaire shall be replaced under Major Maintenance.

II Lamps

- A. The Contractor shall replace any High Pressure Sodium or Mercury Vapor lamp if defective or damaged. Only new lamps shall be used.
- B. Lamp Sockets which are defective due to high heat or other causes shall be replaced, including their apparatus.

III. Glassware or Plastic

- A. Enclosed assemblies with hinged door and glassware shall have the glassware removed, washed, rinsed twice and dried. The inner surface of aluminum reflectors shall be wiped with a chamois and any glassware with felt on the holding ring shall be sponged and wiped dry with a dry cloth, keeping the felt dry. Any other process that the Contractor chooses must be presented to the Engineer in detail. The Engineer must approve any process before the Contractor begins to use the process. The Contractor cannot change the process for cleaning without prior written approval of the Engineer.
 - 1. While glassware or plastic is removed for cleaning, bugs and debris shall be brushed from that part of the fixture holding the glass (or plastic) in addition to the area surrounding the reflector.
 - 2. With a hinged-door fixture, the second portion of the fixture shall be unfastened and brushed to clean away bugs and debris that have collected along the ballast and transformer. Care shall be taken not to disturb the wires while removing the debris.
- B. Glassware which is in need of replacement shall be replaced with the same type and pattern as removed. Special attention shall be used to make certain that glassware with glare shields will be replaced with the same type (as needed).
- C. Glass Refractors may be replaced with plastic where it is shown to be necessary because of vandalism (as needed).
- D. Glare Shields shall be checked. All broken or unserviceable glare shields shall be replaced.

IV Reflectors

- A. The inner surface of reflectors shall be cleaned and/or polished with a removable polish rather than by the use of water.
- B. If a reflector is beyond restoring its reflective qualities, it shall be replaced.

V. Gaskets - All gaskets not in good condition or not functioning properly shall be replaced.

VI. Bird Guards

- A. Bird Guards shall be kept in working condition at all times.
- B. If Bird Guards are not available to fit the specifications of the present fixture, new bird guards shall be designed for that fixture and installed.

VII. Hinges and Latches - Hinges and Latches shall be repaired with parts that can be obtained from the manufacturer's supplier, or fabricated and applied without removing the fixture.

CHECKED

GENERAL NOTES

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CLEANING AND MINIMAL MAINTENANCE OF STRUCTURES

The following Minimal Maintenance shall be performed, as required, to maintain the lighting system. All structures will be included in a Minimal Maintenance Program. This program will include the group cleaning of all frangible bases, visual ground checks, and pull-apart fuse connector lubrication. The Contractor may perform this work within any consecutive ninety (90) day period within the term of the contract.

The following Minimal Maintenance, except the group cleaning and visual ground checks, shall be performed routinely, as required, to maintain the lighting system.

- I. Photo-Cells - All Photo-Cells, regardless of their location, shall be checked for proper functioning. If the Photo-Cell is not functioning properly, it shall be mechanically adjusted or replaced. Photo-Cell sockets which are defective shall be replaced.
- II. Bracket Arms - Any damaged or missing Bracket Arm shall be replaced under Major Maintenance.
- III. Poles

A. Any damaged or missing Poles shall be replaced under Major Maintenance.

B. Any damaged or missing handhole cover or pole cap shall be replaced. Handhole covers for certain style poles which are no longer available from the manufacturer shall be fabricated by the Contractor. The fabricated replacement handhole cover shall be of a similar style, material and construction as the original. If bolts are broken off, they shall be retapped, threaded, and placed in their proper position using stainless steel bolts (as needed).

C. If a pole is leaning, it shall be shimmed at the base in order to return it to its proper position.
- IV. Aluminum Frangible Base

A. Any broken or missing doors shall be replaced. Holes plugged by broken bolts shall be retapped. Only stainless steel or aluminum bolts shall be used. ABS or equivalent plastic doors are preferred to aluminum doors (as needed).

B. Group Base Cleaning shall be performed as follows:

1. The inside wall of the base and the surface of the concrete foundation shall be cleaned with a wire brush, then vacuumed or blown free of all dust and/or debris.

2. A visual check shall be made to see that a proper connection is made between the structure and the ground rod.

3. All pull-apart connectors located in bases shall be lubricated when the Group Base Cleaning is performed.
- V. Fuses - Blown Fuses located in control centers, disconnect switch enclosures and pull-apart connections shall be replaced with fuses of the proper type, voltage and ampere rating in their particular application.
- VI. Foundations

A. Voids around foundations caused by erosion shall be backfilled with dirt and seeded.

B. Conduit coming out of the foundation wall shall be sealed with electrical putty.

- VII. Wiring - All wiring shall be performed consistently with rules as established by the American National Standards Institute (A.N.S.I.). The following shall be performed under Minimal Maintenance as required.

A. All rewiring within the luminaire head.

B. All wiring needed to maintain a proper ground.

C. Replacing all defective pull-apart connectors (weatherproof connectors are required as replacements in all frangible bases).
- VIII. Control Center - The Control Center or Circuit Breaker Panel Board Enclosure which controls the lights in this contract, no matter where the box is located, shall be the responsible of the Contractor. Any work performed on or within the confines of a Control Center, unless specifically covered under a Major Maintenance item, will be considered Minimal Maintenance. This item is to include two (2) locks, one on the switch handle and the other on the door latch.
- IX. Pole Identification System - The existing Pole Identification System is to be maintained and completed where necessary with the markings to be furnished by the Contractor in compliance with CMS 625.23 and SCD HL-10.12, incorporating the circuit number and pole number (as needed).

Basis of Payment

Payment for Minimal Maintenance items of work will be made at the Contract Unit Price bid per Fixture per Month by Category. This includes furnishing all labor, equipment, material, and removing and disposing of material for maintaining and repairing the lighting system as described herein, for each component part of the Highway Lighting System, and the Maintenance of Traffic as required. The Engineer will inspect all lighting twice monthly. The Engineer will deduct ½ of the Minimal Maintenance fee by Category for every fixture that is not operating at the time of the Engineer's inspection.

A Fixture is defined as a single unit. If there is more than one (1) fixture on a support, payment will be made for each fixture maintained.

The payment will be made in equal monthly installments at the Contract Unit Price provided the fixture is maintained in operating condition, as specified herein.

CHECKED

GENERAL NOTES

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MAJOR MAINTENANCE

GENERAL

Major Maintenance consists of work needed to rehabilitate or reconstruct the lighting system to the level of illumination as specified by the original construction plan note requirements and/or by the contract notes listed herein under Major Maintenance. The Contractor must be authorized by the Engineer to perform this work. This authorization will constitute approval to do the work.

Removing and disposing of damaged items and restoration to a functional condition shall be incidental to all pay items. All material removed shall become the property of the Contractor and shall be stored off of the project limits.

All work included in Major Maintenance to restore parts of the lighting system to normal operation shall be performed within seven calendar days after receiving notification of their malfunction, except as indicated in Item 614 Maintenance of Traffic, One Lane Closure on a Four-lane or Greater Divided Highway.

All drawings and diagrams shall be kept current with new installations, thereby showing the location of trench and cable duct and denoting any guardrail, posts, etc., in relation to the new installation. These drawings shall be furnished to the Engineer.

201 CLEARING AND GRUBBING, AS PER PLAN

This item shall be as described in 201.01 except that the area cleared shall be a path from the roadway to the highway lighting apparatus.

Payment will be made at the contract lump sum.

625 REMOVE AND REERECT EXISTING LIGHT POLE, AS PER PLAN, ON A NEW BASE

This item shall consist of removing an undamaged pole (vertical support) from a defective or nonexistent base, and re erecting the undamaged pole on a new base. Payment for a new aluminum transformer base is not included in this item, but will be paid for under its respective pay item.

Payment will be made at the contract unit price per each.

625 ERECTING REUSABLE DOWNED LIGHT POLE, AS PER PLAN

This item shall consist of erecting a reusable downed pole (vertical support), including the removal of broken bolts, retapping holes, replacing pole caps, furnishing connector kits, wiring, testing and other incidentals necessary to return the unit to normal operation.

Payment will be made at the contract unit price per each.

625 LIGHT POLE MISC.: BY HEIGHT, AS PER PLAN

This item shall consist of removing and disposing of a damaged or defective light pole and furnishing and erecting a new pole. Also, included shall be any new connector kits, wiring, testing and other incidentals necessary to return the unit to normal operation.

Light Pole is defined herein as the vertical support and its incidental attachments, excluding bracket arm and frangible base.

Poles which are not reusable, as determined by the Engineer, shall become the property of the Contractor for removal and disposal, as necessary.

Removal of all non-reusable poles will be performed as an incidental to this item.

Payment will be made at the contract unit price per each.

625 LIGHTING MISC.: ADAPTER PLATE FOR TRANSFORMER BASE, AS PER PLAN

This item shall consist of furnishing and installing an adapter plate for a frangible base of an approved design. The removal and disposal of an existing adapter plate is incidental to this item.

Payment will be made at the contract unit price per each.

625 LIGHT TOWER MISC.: PLUG FOR TOWER LIGHTING, AS PER PLAN

This item shall consist of removing and disposing of a defective plug for Tower Lighting, and furnishing and installing a new plug equivalent to the one being replaced. Also included shall be any connections, testing and incidentals required to restore the lighting unit to normal operation. A plug is considered both the female and male ends.

Payment will be made at the contract unit price per each.

625 LIGHT TOWER MISC.: PLUG ON TOWER RING FOR TOWER LIGHTING, AS PER PLAN

This item shall consist of removing and disposing of a defective plug on the tower ring and furnishing and installing a new plug equivalent to the one being replaced. Also included shall be any connections, testing and incidentals required to restore the lighting unit to normal operation.

Payment will be made at the contract unit price per each.

625 REMOVE AND REERECT BRACKET ARM, AS PER PLAN

This item shall consist of removing an undamaged bracket arm and re erecting the undamaged bracket arm on a new or existing light pole or storing it for later use. Also included shall be any connections and incidentals required to restore the unit to normal operation.

Tower light arms shall not be considered part of this item.

Payment will be made at the contract unit price per each.

CHECKED

GENERAL NOTES

CLA/ MIA/MOT-70/75/75
3.43/VAR/VAR

10
26

625 BRACKET ARM, AS PER PLAN

This item shall consist of furnishing and installing a new bracket arm equivalent in size and shape to the one being replaced. Also included shall be the removal and disposal of the defective bracket arm and any connections and incidentals required to restore the unit to normal operation.

Payment will be made at the contract unit price per each.

625 REPAIR INTEGRAL LUMINAIRE LOWERING MECHANISM OF TOWER LIGHTING FIXTURE

This item consists of the repair of a luminaire ring assembly, a head frame assembly, and the winch assembly.

If power cable replacement is necessary, it will be paid for under its respective pay item.

Payment will be made at the contract unit price per each lowering mechanism repaired.

625 TRANSFORMER BASE, MISC.: ALUMINUM TRANSFORMER BASE, AS PER PLAN

This item shall consist of furnishing and replacing a new Aluminum Transformer Base, of an approved design. Also included shall be the extension of any cables, connector or splice kits, and incidentals required to restore the unit to normal operation.

The Contractor shall submit certified test data from the manufacturer that the base meets the AASHTO criteria. The certification shall be accompanied by report tests performed by the manufacturer or other agencies. If the results have been evaluated and found acceptable by FHWA, a copy of the approval letter from FHWA shall accompany the certification. Transformer Bases shall be permanently marked or labeled to identify that they meet the requirements.

Payment will be made at the contract unit price per each.

625 CIRCUIT BREAKER, TOWER LIGHTING, BY TYPE, AND ENCLOSURE, AS PER PLAN

This item shall consist of removing and disposing of a defective circuit breaker and enclosure, and furnishing and installing a new circuit breaker of appropriate ampere, watt and voltage ratings and a new enclosure of equivalent size and shape to the one being replaced. All wiring, connections, testing and incidentals required to return the unit to normal operation shall be included in this item.

Payment will be made at the contract unit price per each.

625 CIRCUIT BREAKER, TOWER LIGHTING, BY TYPE

This item shall consist of removing and disposing of a defective circuit breaker, furnishing and installing a new circuit breaker of appropriate ampere, watt and voltage ratings. All wiring, connections, testing and incidentals required to return the unit to normal operation shall be included in this item.

Payment will be made at the contract unit price per each.

625 CONTROL CENTER MAINTENANCE ITEM, AS PER PLAN, CIRCUIT BREAKER, BY TYPE

This item shall consist of removing and disposing of a defective circuit breaker, furnishing and installing a new circuit breaker of appropriate ampere, watt and voltage ratings. All wiring, connections, testing and incidentals required to return the unit to normal operation shall be included in this item.

Payment will be made at the contract unit price per each.

625 SECONDARY SURGE PROTECTOR, AS PER PLAN, (LIGHTING ARRESTOR), HIGH MAST LIGHTING FIXTURE

This item shall consist of removing and disposing of a defective Secondary Surge Protector, furnishing and installing a new (or nonexistent) Secondary Surge Protector, Square D Type J9200-9A, or equivalent, for high mast (tower) fixtures. Also included shall be any connections, testing, and incidentals required to restore the unit to normal operation.

Payment will be made at the contract unit price per each.

625 LIGHT POLE FOUNDATION REPAIR, AS PER PLAN

The item shall consist of repairing a Light Standard Foundation when the anchor bolts have been sheared off or bent and where the damage extends to only within 1 foot of the top of the foundation.

The work involved shall include removal of the concrete foundation to 1 foot below the top of the foundation, cutting the damaged anchor bolts, installing a threaded compression sleeve on the remaining portion of the anchor bolts, inserting new threaded galvanized bolts of the same size, forming and pouring the new foundation, and repairing the wiring in the foundation, as required, including the required approved connector kits. Premix commercial concrete may be used in lieu of CMS 625.06.

Payment will be made at the contract unit price per each.

625 LIGHT POLE FOUNDATION, AS PER PLAN

This item shall consist of a new foundation, placed according to CMS 625.06 and SCD HL-20.11M. It shall also include reinforcing steel, anchor bolts, rerouting of cables, and approved connector kits.

Payment will be made at the contract unit price per each.

202 LIGHT POLE FOUNDATION REMOVED, AS PER PLAN

This item shall consist of removing the entire foundation, backfilling the resultant depression with suitable compacted soil and restoring the disturbed area to the level of the surrounding grade. Removal, disposal of materials, and restoration of the area shall be performed according to CMS 202.

Payment will be made at the contract unit price per each.

CHECKED

GENERAL NOTES

CLA/MIAMOT-7075/75
3.43/VAR/VAR

11
26

202 PORTION OF LIGHT POLE FOUNDATION REMOVED, AS PER PLAN

This item shall consist of removing the foundation to 1 foot below the existing ground line, backfilling the resultant depression with suitable compacted soil and restoring the disturbed area to the level of the surrounding grade. Removal, disposal of materials and restoration of the area shall be performed according to CMS 202.

Payment will be made at the contract unit price per each.

625 LUMINAIRE, MISC.: LUMINAIRE, BY TYPE, AS PER PLAN

This item shall consist of furnishing and installing a new complete luminaire and lamp. Also included shall be the removal and disposal, any connections, wiring, testing, and any other incidentals required to restore the unit to normal operation. Built-in level is not required.

Payment will be made at the contract unit price per each.

625 BALLAST FOR TOWER LIGHT FIXTURE, AS PER PLAN, BY TYPE

This item shall consist of removing and disposing of a defective ballast and furnishing and installing a new High Pressure Sodium Ballast for existing high mast (tower) fixtures. All wiring, connections, testing and incidentals required to return the unit to normal operation shall be included in this item.

Payment will be made at the contract unit price per each.

625 BALLAST FOR TOWER LIGHT FIXTURE, AS PER PLAN, YARD LIGHT, BY TYPE

This item shall consist of removing and disposing of a defective ballast and furnishing and installing a new High Pressure Sodium Ballast for existing yard light fixtures. All wiring, connections, testing and incidentals required to return the unit to normal operation shall be included in this item.

Payment will be made at the contract unit price per each.

625 GROUND ROD, AS PER PLAN

This item shall consist of furnishing and driving a 1 inch by 10 foot long Ground Rod 6 inch below grade into the ground adjacent to the foundation of the pole. Also included is the furnishing and running of a seven (7) strand #4 copper wire from the top of the ground rod through a hole in the transformer base (a hole shall be bored if none exists). The wire shall be wrapped around a bolt on the inside of the transformer base or pole base and connected with a ground lug. Ground Rod resistance shall be twenty-five (25) ohms maximum, except on towers, where it shall be ten (10) ohms maximum.

Payment will be made at the contract unit price per each.

625 TRENCH, AS PER PLAN

This item shall consist of excavating the trench to a depth of 24 inches, backfilling, and restoring the area. Identifying tape shall be used to mark where underground cable has been installed.

The identifying tape shall be inert material, approximately 6 inch wide, composed of polyethylene plastics highly resistant to alkalis, acid or other chemical compounds likely to be encountered in soils. The tape shall be bright yellow with identifying printing "Electric" in black letters, one side only. The tape shall be supplied in continuous rolls with the identifying lettering repeated continuously the full length of the tape. The tape shall be Allen System, Terra Tape, Tecta Tape, or equal, approved by the Engineer.

The tape shall be buried in the electric line trench with one strip placed no less than 2 inch or more than 12 inches below the final finished grade of the trench. The tape shall be placed with the printed side up and shall be essentially parallel with the final grade.

Payment will be made at the contract unit price per linear foot.

625 PULL BOX, BY TYPE, AS PER PLAN

This item shall consist of excavating, furnishing and installing a Pull Box of an approved design. Also included shall be the removal and disposal, any waterproof connector kits, testing, and restoration required to return the circuit to normal operation.

Payment will be made at the contract unit price per each.

625 LIGHTING, MISC.: PULL BOX DRAINAGE SYSTEM, AS PER PLAN

This item shall consist of trenching, furnishing materials and installing a pipe drain, 605.03, according to CMS 605, at existing or new pull boxes located on raised shoulders where the drain can be extended to the surface of the slope.

Payment will be made at the contract unit price per linear foot.

625 CONDUIT, MISC.: CONDUIT, WALL MOUNTED, 2 ", AS PER PLAN

This item shall consist of furnishing and installing 2 inch galvanized steel conduit, as per CMS 713.04, at a 6 foot mounting height on concrete walls. Also included shall be the removal and disposal of defective conduit, clamps and connector kits, testing, and incidentals necessary to return the system to normal operation.

Payment will be made at the contract unit price per linear foot.

625 CONDUIT JACKED OR DRILLED UNDER PAVEMENT, AS PER PLAN, SIZE 3 "

This item shall consist of furnishing and installing a 3 inch galvanized steel conduit, as per CMS 713.04, under existing pavement or paved shoulder by jacking or drilling. Also included shall be connections, testing, and other incidentals required to return the system to normal operation.

Payment will be made at the contract unit price per linear foot.

GENERAL NOTES

CLA/MIAMOT-70/75/75
3.43/VAR/VAR

12
26

625 DISTRIBUTION CABLE, BY TYPE, AS PER PLAN

This item shall consist of furnishing and installing Distribution Cable. Also included shall be any connector kits, splice kits, and testing required to return the circuit to normal operation. When new conductors are pulled into existing duct, care should be taken to keep from damaging the insulation. At all new installations, the cable insulation shall be tested with a 1000 Volt Megger to assure the cable and splices are acceptable.

Cable ends shall be secured below ground level in pull boxes to inhibit being pulled and damaged by mowers

Payment will be made at the contract unit price per linear foot.

625 LIGHTING MISC.: REMOVING CABLE IN EXISTING DUCT OR CONDUIT, AS PER PLAN

This item shall consist of removing damaged or deteriorated cable to be replaced. Cable as used here is defined as one or more conductors which would normally be pulled out of the duct or conduit at the same time.

Payment will be made at the contract unit price per linear foot of cable removed at one time.

625 NO. 10 AWG, POLE AND BRACKET CABLE, AS PER PLAN, 600 VOLT

This item shall consist of furnishing and installing new #10 AWG, 600 Volt Cable. Also included shall be all connections and any testing required to return the luminaire to normal operation.

Payment will be made at the contract unit price per linear foot.

625 LIGHTING, MISC.: ANNUAL OPERATION AND INSPECTION OF TOWER LIGHTING DEVICES, AS PER PLAN

This item of work shall consist of the operation and inspection of each tower lighting device included in this contract on an annual basis.

During April and May of each year, each tower lighting fixture support ring shall be lowered completely to determine if the lowering mechanism is functioning properly.

While lowered to the ground working level, the power cord shall be plugged into the inlet on the support ring and the luminaire shall be energized. All other appurtenances on the support ring shall be inspected, lubricated and repaired, as directed by the Engineer.

The luminaire support ring latching mechanisms shall be lubricated and the support ring leveled according to the manufacturer's instructions prior to final latching of the support ring to the top of the tower.

Any necessary repairs shall be paid for under their respective pay items listed in this contract. Payment will be made at the contract unit price per each.

One (1) year after award of the Contract, Group HPS Lamp Replacement shall be performed simultaneously with this item and be paid for under it's respective pay item.

625 POWER CABLE FOR LIGHT TOWER, AS PER PLAN

This item shall consist of furnishing and installing new cable of the proper size in an existing light tower. Also included shall be the removal and disposal of defective cable and any connections, testing, and other incidentals required to return the unit to normal operation

Payment will be at the contract unit price per linear foot.

625 DUCT CABLE, BY TYPE, AS PER PLAN

This item shall consist of furnishing and installing Duct Cable. Also included shall be any connector kits, splice kits, and testing required to return the circuit to normal operation. At all new installations the cable insulation shall be tested with a 1000 Volt Megger to assure the cable and splices are acceptable.

Payment will be at the contract unit price per linear foot.

625 CONTROL CENTER CABINET, COMPLETE, AS PER PLAN, BY TYPE

This item shall consist of removing the damaged cabinet and furnishing a complete Control Center Cabinet, by type, including disconnect switch, lighting contractor, H-O-A Switch, lightning arrestor, photo-cell transformer, mounting bracket and stainless steel cabinet, including all necessary wiring, testing, and other miscellaneous items required to return the system to normal operation.

Payment will be made at the contract unit price per each.

625 POWER SERVICE, AS PER PLAN

This item shall consist of removing an existing meter and furnishing and installing a new meter, meter socket, mounting bracket, wiring, connections, testing and other incidentals required to return the system to normal operation.

Payment will be made at the contract unit price per each.

625 TROUBLE-SHOOTING UNDERGROUND AND ABOVE GROUND CIRCUITRY PROBLEMS

This item shall consist of investigating, at the request of the Engineer, an Underground Circuit of highway lighting or sign lighting to determine the cause of failure or malfunction, reporting the fault, and recommending corrective action to the Engineer.

Fault Finders, Meggers, etc. should be used to accurately locate faults so that the Engineer can make sound decisions to give the Contractor approval to proceed with corrective action items. If more than one (1) fault exists between two (2) cable splice points, approval to repeat this item must be obtained from the Engineer prior to performing the work.

Payment will be made at the contract unit price for only one (1) circuit fault determination or component fault per request.

CHECKED

GENERAL NOTES

CLA/MIAMOT-70/75/75
3.43/VAR/VAR

13

26

625 REPAIRING UNDERGROUND BREAK OF CABLE IN DUCT OR CONDUIT

This item shall consist of excavating and uncovering a break or short in cable inside a conduit, repair the conduit, and backfilling and restoring the area. Pullbox, cable, etc. shall be paid for under their respective item.

Payment will be made at the contract unit price per each.

625 LIGHTING MISC.: REPAIRING UNDERGROUND BREAK OF DIRECT BURIAL CABLE

This item shall consist of excavating and uncovering a break or short in direct burial cable, splicing the break or short with approved waterproof splice kits, and backfilling and restoring the area. A 1000 Volt Megger test shall be performed to assure the splices are acceptable.

If many faults or breaks are found, the Engineer will decide whether to splice the cable, replace the entire cable, or install new duct cable between two (2) terminal points.

Payment for replacement of cable or installation of new duct cable is not included in this item, but will be paid for under their respective pay items.

Payment will be made at the contract unit price per each splice made.

625 LIGHTING, MISC.: DISCONNECT SWITCH, BY TYPE, AS PER PLAN

This item shall consist of removing and disposing of a defective Disconnect Switch, furnishing and installing a new Disconnect Switch, by type, in an existing control center, including all necessary wiring, testing, and other miscellaneous items required to return the control center to normal operation.

Payment will be made at the contract unit price per each.

625 LIGHTING CONTACTOR, AS PER PLAN, BY TYPE

This item shall consist of removing and disposing of a defective Lighting Contactor, furnishing and installing a new Contactor, by type, in an existing control center, including all necessary wiring, testing, and other miscellaneous items required to return the control center to normal operation.

Payment will be made at the contract unit price per each.

625 LIGHTING MISC.: PHOTO-CELL TRANSFORMER, AS PER PLAN

This item shall consist of removing and disposing of a defective Photo-Cell, furnishing and installing a new Photo-Cell in an existing control center, including all necessary wiring, testing, and other miscellaneous items required to return the control center to normal operation.

Payment will be made at the contract unit price per each.

625 LIGHTING, MISC.: H-O-A SWITCH, AS PER PLAN

This item shall consist of removing and disposing of a defective H-O-A Switch, and furnishing and installing a new Switch in an existing control center. The switch shall be three (3) position, "Hand-Off-Automatic", with the required rating, and the terminals enclosed. Included shall be all necessary wiring, testing, and other miscellaneous items required to return the control center to normal operation.

Payment will be made at the contract unit price per each.

625 LIGHTING, MISC.: GROUP HPS LAMP REPLACEMENT, BY TYPE, AS PER PLAN

This item shall consist of Group Replacement of all HPS (towers, overhead, wall mounted, underdeck) Lamps. The cleaning of all fixtures shall also be included in this item. Group Lamp Replacement and Cleaning shall be done simultaneously. The method of cleaning shall be the same as described for Minimal Maintenance. It shall be performed within a 120 day period beginning one (1) year after the award of the Contract (except Towers).

For Towers, this item shall be performed simultaneously with the Annual Operation and Inspection for Tower Lighting Devices, which is performed during the months of April and May one (1) year after the award of the Contract.

Payment will be made at the contract unit price per each.

630 LUMINAIRE SUPPORT ASSEMBLY, MISC.: LUMINAIRE SUPPORT ASSEMBLY, BY TYPE, AS PER PLAN

This item shall consist of furnishing and installing a new sign light support assembly, including all necessary wiring and other incidentals necessary to return the unit to normal operation.

Payment will be made at the contract unit price per each.

631 SIGN LIGHTING MISC.: CONTROL CENTER CABINET, COMPLETE, BY TYPE, AS PER PLAN

This item shall consist of furnishing a complete Control Center Cabinet, by type, including disconnect switch, lighting contactor, H-O-A switch, lightning arrestor, photo-cell transformer, and stainless steel cabinet, including all necessary wiring, testing, and other miscellaneous items required to return the system to normal operation.

Payment will be made at the contract unit price per each.

631 SIGNWIRED, AS PER PLAN

This item shall consist of furnishing the necessary material to replace faulty sign wiring in kind. The portion of sign lighting covered under the Sign Wired work shall complete the electrical system from the disconnect switch to the luminaire or fixtures. The wire shall be rated at 600 volts and shall be RHW, RHW Type, THW, or XHHW. The wire shall be a single conductor, and shall be not smaller than #10 AWG, unless otherwise specified.

Payment will be made at the contract unit price per each.

CHECKED

GENERAL NOTES

CLA/MIAMOT-70/75/75
3.43VAR/VAR

14
26

631 BALLAST, MISC.: REMOTE MERCURY VAPOR BALLAST, BY TYPE, AS PER PLAN

This item shall consist of furnishing and installing a new Remote Mercury Vapor Ballast for existing mercury vapor sign light luminaires that do not contain an integral ballast. The existing ballast wiring enclosure and ballast wiring enclosure mounting bracket shall be used. Also included shall be the removal and disposal of the defective ballast and any connections, testing, and incidentals required to restore the unit to normal operation.

Payment will be made at the contract unit price per each.

631 MERCURY VAPOR LUMINAIRE, MISC.: MERCURY VAPOR LUMINAIRE, BY TYPE, AS PER PLAN

This item shall consist of furnishing and installing a new Mercury Vapor Sign Light Luminaire with integral ballast and lamp. Also included shall be the removal and disposal of the defective luminaire, replacement of the sealed tight flex, any connection, wiring, testing, and incidentals required to restore the unit to normal operation.

Payment will be made at the contract unit price per each.

631 SIGN CONTROL ENCLOSURE "X", "Y" OR "Z"

This item shall consist of removing and disposing of a damaged or defective Sign Control Enclosure, furnishing and installing a new Sign Control Enclosure of an approved and required type to an existing sign support. Also included shall be the disconnect switch, transformer, fuses, testing, and other incidentals required to return the unit to normal operation.

Payment will be made at the contract unit price per each.

631 SIGN LIGHTING MISC.: DISCONNECT SWITCH, BY TYPE, AS PER PLAN

This item shall consist of removing and disposing of the defective Disconnect Switch, furnishing and installing a new Disconnect Switch, including the connections, wiring, testing, and any other incidentals required to restore the unit to normal operation.

Payment will be made at the contract unit price per each.

631 SIGN LIGHTING MISC.: GROUP MERCURY VAPOR LAMP REPLACEMENT, BY TYPE, AS PER PLAN

This item shall consist of Group replacement of all Mercury Vapor (sign light) Lamps. The cleaning of all fixtures shall also be included in this item. Group Lamp Replacement and Cleaning shall be done simultaneously and shall be performed within a 120 day period after the award of the Contract. The method of cleaning shall be the same as described in Minimal Maintenance.

Payment will be made at the Contract unit price per each.

SPECIAL EMERGENCY RESPONSE - KNOCKDOWN, ROADWAY HAZARD AND/OR LIVE EXPOSED WIRE

This item shall consist of the Contractor responding to an emergency call-out, only by notification by the Engineer, and only when the emergency occurs after normal working hours. Some examples of hazardous conditions that would warrant an emergency call-out of the Contractor would be a knockdown that requires the removal of a pole or an accident that requires a maintenance crew to secure electrical circuits.

The Contractor's response time for an emergency call-out, from the time of notification until personnel arrive at the site, shall not exceed two (2) hours. The Contractor's response to notification of a hazardous condition during normal working hours will be considered a part of minimal maintenance.

Payment will be made at the contract unit price per hour.

614 MAINTAINING TRAFFIC

The Contractor shall provide a portable flashing arrow per SCD TC-35.10M. This apparatus shall be used for all work on multilane highways as a safety protection to workers, equipment, and the traveling public.

The intent is to perform the required work with the least inconvenience and maximum safety to the Contractor and the traveling public. Any variance from these Maintenance of Traffic Notes must be approved in advance in writing by the Engineer. Except as modified below, the requirements for Maintenance of Traffic as indicated in the Ohio Manual of Uniform Traffic Control Devices for Streets and Highways and pertinent items, specifications and proposal shall apply.

The Contractor shall arrange his operation as to prevent any interference to the traveling public. Traffic shall be maintained on the existing pavement without interruption, unless approved by the Engineer. All vehicles, equipment, men and their activities are restricted at all times to one (1) side of the pavement, unless otherwise approved by the Engineer.

Traffic shall be maintained in a uniform pattern throughout the entire length of the project and is not to be subjected to constant lane shifting. The Contractor shall arrange traffic control devices so that traffic to and from the freeway is maintained at all times.

The Contractor will be required to provide, erect, and maintain in proper position, clean legible devices in good working condition and subsequently remove all lights, signs, barricades, cones, drums and all other traffic control devices necessary for the maintenance of traffic. All signs shall be reflectorized with Type G Reflective Sheeting.

Placement of all traffic control devices shall start and proceed in the direction of the flow of traffic. Removal of traffic control devices shall start at the end of the construction area and proceed toward the oncoming traffic. The Contractor shall provide for installation of all necessary traffic control devices before beginning work and their immediate removal as soon as work is suspended or completed.

Unless otherwise noted in these plans, the standard channelizing device for closing any lanes to traffic shall be properly weighted and reflectorized plastic drums located and spaced according to applicable standard drawings.

The Contractor shall request permission from the Engineer to close a lane at least seven calendar days in advance of the proposed date. Most lane closures will be restricted to nighttime hours.

The Contractor shall not close any lanes or otherwise impede the flow of traffic during National Holidays, Mother's Day, Easter or holiday weekends. A "Weekend", for traffic control purposes, is to begin at noon on the last normal weekday proceeding the holiday weekend and is to end at noon on the first normal weekday following the weekend. A day between the holiday and Saturday or Sunday is considered part of the weekend (i.e., the Friday after Thanksgiving).

CHECKED

GENERAL NOTES

CLM/MIA/MOT-70/75/75
3.43/VAR/VAR

15
26

When performing work in the Center Lane, under no circumstances will the Center Lane be closed without closing one (1) of the adjacent lanes and berm.

On two (2) lane roadways, two-lane traffic shall be maintained at all times, except that one (1) lane closures will be permitted for minimum periods of time with the approval of the Engineer.

One lane closures will be prohibited between the hours of 6:00 a.m. and 9:00 a.m. and 3:00 p.m. and 6:00 p.m., Monday through Friday unless otherwise specified under "Special Provisions". One lane closures will be operated by the use of flaggers and will be required whenever traffic is restricted to less than the normal width of the two lane pavement, on two-lane highways.

Payment for all of the above, including providing, erecting, maintaining, and removing all lights, signs, barricades, drums, cones and all other traffic control devices, shall be included in the lump sum bid for this item.

614 MAINTENANCE OF TRAFFIC, ONE LANE CLOSURE ON A FOUR-LANE OR GREATER DIVIDED HIGHWAY

This item shall consist of the Contractor closing the high speed lanes on IR-75 for median lighting maintenance purposes. The Contractor shall provide, erect and maintain in proper position, clean, legible devices in good working condition and subsequently remove all lights, signs, cones, drums and all other traffic control devices necessary for this lane closure. The Contractor shall also provide a Law Enforcement Officer with Patrol Car which will be included in the bid price for item 614, Maintenance of Traffic, One Lane Closure on a Four-Lane or Greater Divided Highway.

Payment will be made at the contract unit price per each.

614 LAW ENFORCEMENT OFFICER WITH PATROL CAR

This item shall consist of the Contractor providing the service of a Law Enforcement Officer with Patrol Car to assist in Traffic Control in areas other than the high speed lanes of IR-75. Information regarding arrangement for Law Enforcement Officer service may be obtained by first contracting the State Highway Patrol Headquarters and then the appropriate County Sheriff's Office.

Payment will be made at the contract unit price per hour.

806 FIELD OFFICE, TYPE B, AS PER PLAN

In addition to Supplemental Specification 806 (providing, maintaining and removing a suitable Field Office for the exclusive use of the Department), the Contractor shall also provide a Field Office for the Contractor to house the Contractor's dispatcher service, Contractor's representatives, and records. The Field Office may be contained in the same building if not less than 300 square feet are provided. The Contractor shall provide and maintain telephone service in the Field Office, including two-way radio communication with the Contractor's maintenance crews. A cellular phone shall be supplied by the Contractor for State personnel to communicate with the Contractor's field crews and Contractor's Field Office.

Payment will be made at the contract unit price per month.

CHECKED

GENERAL NOTES

CLAY MIA/MOT-70/75/75
3.43/VAR/VAR

16
26

Loc. No.	County	Route	SLM (mi)	Description	480 Volt															240 Volt		Total Units				
					100W 20MH	100W UD	100W Wall	150W 34MH	200W BM	200W 32.5MH	200W 34MH	200W 40MH	200W 41.7MH	310W 40MH	310W 41.7MH	310W 45MH	310W 50MH	310W 51.7MH	400W Tower	1000W Tower	200W 34MH			310W 41.7MH		
																								CHECKED		
																									INVENTORY - HIGH PRESSURE SODIUM LIGHTING	
C-1	Clark	IR-70	3.43	IR-675					4		82												86			CLAMIA/MOT-70/75/75 -3.43/VAR./VAR.
C-2	Clark	IR-70	6.07	SR-4							7												7			
C-3	Clark	IR-70	11.01	US-68					4	23	29												56			
C-4	Clark	IR-70	13.12	SR-72					1	38													39			
C-5	Clark	IR-70	18.13	SR-41						3	16												19			
C-6	Clark	IR-70	20.79	US-40					1		25												26			
C-7	Clark	IR-70	25.11	SR-54							18												18			
C-8	Clark	US-68	7.71	US-40/Upper Valley Pike		2			2		51									3			58			
C-9	Clark	US-68	8.88	SR-41							25												25			
C-10	Clark	US-68	12.38	SR-72		6			2	10	17				10								45			
C-11	Clark	US-68	15.19	County Line Road							10												10			
C-12	Clark	SR-72	13.18	SR-334		4			2	8	25				1								40			
				Total Clark County		12			16	82	305				11					3			429			
MI-1	Miami	IR-75	2.62	SR-571																2	16		18			
MI-2	Miami	IR-75	4.40	CR-25A Troy							4				17								21			
MI-3	Miami	IR-75	13.16	CR-25A Farrington																	17		17			
MI-4	Miami	IR-75	14.79	Northbound Rest Area	5						3		7								8		23			
MI-5	Miami	IR-75	14.98	Southbound Rest Area	5						1		7								8		21			
MI-6	Miami	IR-75	16.72	US-36															60				60			
MI-7	Miami	IR-75	17.77	CR-25A Piqua															98				98			
				Total Miami County	10						8		14		17				158	33	2	16	258			
														</												

Loc. No.	County	Route	SLM (mi)	Description	480 Volt																240 Volt		Total Units	
					100W 20MH	100W UD	100W Wall	150W 34MH	200W BM	200W 32.5MH	200W 34MH	200W 40MH	200W 41.7MH	310W 40MH	310W 41.7MH	310W 45MH	310W 50MH	310W 51.7MH	400W Tower	1000W Tower	200W 34MH	310W 41.7MH		
M-1	Montgomery	IR-70	6.03	Brookville-Salem																2		2	CHECKED	
M-2	Montgomery	IR-70	11.02	SR-48														16				16		
M-3	Montgomery	IR-70	14.2	Airport Access			2				21											23		
M-4	Montgomery	IR-70	19.00	SR-202															13			13		
M-5	Montgomery	IR-70	20.97	SR-201															12			12		
M-6	Montgomery	IR-70	23.34	SR-235															35			35		
M-7	Montgomery	IR-75	3.73	SR-725													11	60				71		
M-8	Montgomery	IR-75	6.39	Dixie Drive							33											33		
M-9	Montgomery	IR-75	9.32	Spingboro-Dryden Road			19			3					32				23			77		
M-10	Montgomery	IR-75	9.6	General Motors Ramp			4				30											34		
M-11	Montgomery	IR-75	15.54	Neva-Wagoner Ford			12				19				36							67		
M-12	Montgomery	IR-75	16.34	Keats							1	10	1	24		4						40		
M-13	Montgomery	IR-75	17.29	Needmore										20		6		24				50		
M-14	Montgomery	IR-75	19.78	Little York										84		4		24				112		
M-15	Montgomery	IR-75	19.87	IR-70															30			30		
M-16	Montgomery	IR-75	22.26	US-40			6												10			16		
M-17	Montgomery	IR-75	22.92	Northwoods Boulevard															10			10		
M-18	Montgomery	IR-675	0.00	IR-75				4			6				17							27		
M-19	Montgomery	IR-675	2.10	SR-725/Yankee			10				18				24							52		
M-20	Montgomery	IR-675	3.72	SR-48			2				14				38							54		
M-21	Montgomery	IR-675	6.55	Wilmington Pike							15				12							27		
M-22	Montgomery	US-35	10.32	SR-49										16								16		
M-23	Montgomery	US-35	11.08	Infirmary Road								2		30								32		
M-24	Montgomery	US-40	5.67	SR-49																2		2		
M-25	Montgomery	SR-4	12.57	Liberty																6		6		
M-26	Montgomery	SR-49	13.20	Brookville-Salem																2		2		
				Total for Montgomery County			55	4		3	157	10	3	128	46	159	14	11	108	149	12		859	
				Total for Clark County		12			16	82	305				11					3		429		
				Total for Miami County	10						8		14		17				158	33	2	16	258	
				Total for All Counties	10	12	55	4	16	85	470	10	17	128	74	159	14	11	266	182	17	16	1546	

INVENTORY - HIGH PRESSURE SODIUM LIGHTING

CLAMIA/MOT-70/75/75
-3.43/VAR. VAR.

18
26

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QUANTITY	UNITS	NO. OF MONTHS	ITEM	ITEM EXTENSION	TOTAL QUANTITY	UNITS	DESCRIPTION	See Sheet No.	
							MINIMAL MAINTENANCE		CHECKED
12	EACH	24	625	37201	288	FIX./MO.	LIGHTING, MINIMAL MAINTENANCE, AS PER PLAN, LUMINAIRE, UNDERDECK TYPE, 100 WATT, HIGH PRESSURE SODIUM, 480 VOLT AC	8&9	
55	EACH	24	625	37201	1320	FIX./MO.	LIGHTING, MINIMAL MAINTENANCE, AS PER PLAN, LUMINAIRE, WALL MOUNTED TYPE, 12' MOUNTING HEIGHT, 100 WATT, H.P.S., 480 VOLT AC	8&9	
10	EACH	24	625	37201	240	FIX./MO.	LIGHTING, MINIMAL MAINTENANCE, AS PER PLAN, LUMINAIRE, 20' MOUNTING HEIGHT, 100 WATT, H.P.S., 480 VOLT AC	8&9	
4	EACH	24	625	37201	96	FIX./MO.	LIGHTING, MINIMAL MAINTENANCE, AS PER PLAN, LUMINAIRE, 34' MOUNTING HEIGHT, 150 WATT, H.P.S., 480 VOLT AC	8&9	
16	EACH	24	625	37201	384	FIX./MO.	LIGHTING, MINIMAL MAINTENANCE, AS PER PLAN, LUMINAIRE, BRIDGE MOUNTED, 32.5' MOUNTING HEIGHT, 200 WATT, H.P.S., 480 VOLT AC	8&9	
85	EACH	24	625	37201	2040	FIX./MO.	LIGHTING, MINIMAL MAINTENANCE, AS PER PLAN, LUMINAIRE, 32.5' MOUNTING HEIGHT, 200 WATT, H.P.S., 480 VOLT AC	8&9	
507	EACH	24	625	37201	12168	FIX./MO.	LIGHTING, MINIMAL MAINTENANCE, AS PER PLAN, LUMINAIRE, 34' MOUNTING HEIGHT, 200 WATT, H.P.S., 240/480 VOLT AC	8&9	
10	EACH	24	625	37201	240	FIX./MO.	LIGHTING, MINIMAL MAINTENANCE, AS PER PLAN, LUMINAIRE, 40' MOUNTING HEIGHT, 200 WATT, H.P.S., 480 VOLT AC	8&9	
17	EACH	24	625	37201	408	FIX./MO.	LIGHTING, MINIMAL MAINTENANCE, AS PER PLAN, LUMINAIRE, 41.7' MOUNTING HEIGHT, 200 WATT, H.P.S., 480 VOLT AC	8&9	
128	EACH	24	625	37201	3072	FIX./MO.	LIGHTING, MINIMAL MAINTENANCE, AS PER PLAN, LUMINAIRE, 40' MOUNTING HEIGHT, 310 WATT, H.P.S., 480 VOLT AC	8&9	
90	EACH	24	625	37201	2160	FIX./MO.	LIGHTING, MINIMAL MAINTENANCE, AS PER PLAN, LUMINAIRE, 41.7' MOUNTING HEIGHT, 310 WATT, H.P.S., 240/480 VOLT AC	8&9	
159	EACH	24	625	37201	3816	FIX./MO.	LIGHTING, MINIMAL MAINTENANCE, AS PER PLAN, LUMINAIRE, 45' MOUNTING HEIGHT, 310 WATT, H.P.S., 480 VOLT AC	8&9	
14	EACH	24	625	37201	336	FIX./MO.	LIGHTING, MINIMAL MAINTENANCE, AS PER PLAN, LUMINAIRE, 50' MOUNTING HEIGHT, 310 WATT, H.P.S., 480 VOLT AC	8&9	
11	EACH	24	625	37201	264	FIX./MO.	LIGHTING, MINIMAL MAINTENANCE, AS PER PLAN, LUMINAIRE, 51.7' MOUNTING HEIGHT, 400 WATT, H.P.S., 480 VOLT AC	8&9	
294	EACH	24	625	37201	7056	FIX./MO.	LIGHTING, MINIMAL MAINTENANCE, AS PER PLAN, LUMINAIRE, TOWER LIGHTING, 400 WATT, H.P.S., 480 VOLT AC	8&9	
184	EACH	24	625	37201	4368	FIX./MO.	LIGHTING, MINIMAL MAINTENANCE, AS PER PLAN, LUMINAIRE, TOWER LIGHTING, 1000 WATT, H.P.S., 480 VOLT AC	8&9	
32	EACH	24	631	94601	768	FIX./MO.	MERCURY VAPOR FIXTURE SIGN LIGHT, AS PER PLAN 100 WATT	8&9	
542	EACH	24	631	94601	13008	FIX./MO.	MERCURY VAPOR FIXTURE SIGN LIGHT, AS PER PLAN 175 WATT	8&9	
47	EACH	24	631	94601	1128	FIX./MO.	MERCURY VAPOR FIXTURE SIGN LIGHT, AS PER PLAN 250 WATT	8&9	
							HIGHWAY LIGHTING MAJOR MAINTENANCE		
			201	11001	LUMP		CLEARING AND GRUBBING, AS PER PLAN	10	
			202	75501	2	EACH	LIGHT POLE FOUNDATION REMOVED, AS PER PLAN	11	
			202	75503	2	EACH	PORTION OF LIGHT POLE FOUNDATION REMOVED, AS PER PLAN	12	
			625	02803	75	EACH	TRANSFORMER BASE, MISC.: ALUMINUM TRANSFORMER BASE, AS PER PLAN	11	
			625	10500	10	EACH	LIGHT POLE MISC.: 29.5' HEIGHT (34.2' MOUNTING HEIGHT), AS PER PLAN	10	
			625	10500	10	EACH	LIGHT POLE MISC.: 33.5' HEIGHT (41.7' MOUNTING HEIGHT), AS PER PLAN	10	
			625	10500	3	EACH	LIGHT POLE MISC.: 43.5' HEIGHT (51.7' MOUNTING HEIGHT), AS PER PLAN	10	

GENERAL SUMMARY

CLAMIA/MOT-70/75/75
-3.43/VAR./VAR.

21
26

QUANTITY	UNITS	NO. OF MONTHS	ITEM	ITEM EXTENSION	TOTAL QUANTITY	UNITS	DESCRIPTION	See Sheet No.
			625	10505	40	EACH	ERECTING REUSABLE DOWNED LIGHT POLE, AS PER PLAN	10
			625	13500	20	EACH	LIGHT TOWER MISC.: PLUG FOR TOWER LIGHTING, AS PER PLAN	10
			625	13500	5	EACH	LIGHT TOWER MISC.: PLUG ON TOWER RING FOR TOWER LIGHTING, AS PER PLAN	10
			625	14401	5	EACH	LIGHT POLE FOUNDATION REPAIR, AS PER PLAN	11
			625	14501	2	EACH	LIGHT POLE FOUNDATION, AS PER PLAN	11
			625	17901	20	EACH	BACKET ARM, AS PER PLAN	11
			625	19101	10	EACH	BALLAST FOR TOWER LIGHT FIXTURE, AS PER PLAN, 400 WATT, HIGH PRESSURE SODIUM, 480 VOLT	12
			625	19101	10	EACH	BALLAST FOR TOWER LIGHT FIXTURE, AS PER PLAN, 1000 WATT, HIGH PRESSURE SODIUM, 480 VOLT	12
			625	19101	3	EACH	BALLAST FOR TOWER LIGHT FIXTURE, AS PER PLAN, YARD LIGHT, 100 WATT, HIGH PRESSURE SODIUM, 480 VOLT	12
			625	23201	13000	LIN FT	NO. 4 AWG. 5000 VOLT DISTRIBUTION CABLE, AS PER PLAN	13
			625	23301	2000	LIN FT	NO. 2 AWG, 5000 VOLT DISTRIBUTION CABLE, AS PER PLAN	13
			625	23401	10000	LIN FT	NO. 10 AWG. POLE AND BACKET CABLE, AS PER PLAN, 600 VOLT	13
			625	24101	2500	LIN FT	1 1/2" DUCT CABLE WITH TWO NO. 4 AWG, 5000 VOLT CABLES, AS PER PLAN	13
			625	24301	500	LIN FT	1 1/2" DUCT CABLE WITH TWO NO. 2 AWG, 5000 VOLT CABLES, AS PER PLAN	13
			625	24321	500	LIN FT	1 1/2" DUCT CABLE WITH THREE NO. 4 AWG, 5000 VOLT CABLES, AS PER PLAN	13
			625	24400	500	LIN FT	DUCT CABLE MISC.: 2" DUCT CABLE WITH 3 NO. 4 AWG, 5000 VOLT CABLES, AS PER PLAN	13
			625	25901	200	LIN FT	CONDUIT, JACKED OR DRILLED, AS PER PLAN, SIZE 3"	12
			625	25920	60	LIN FT	CONDUIT, MISC.: CONDUIT, WALL MOUNTED, 2", AS PER PLAN	12
			625	27600	3	EACH	LUMINAIRE, MISC.: LUMINAIRE, UNDERDECK TYPE, 100 WATT, HIGH PRESSURE SODIUM, 480 VOLT, AS PER PLAN	12
			625	27600	5	EACH	LUMINAIRE, MISC.: LUMINAIRE, WALL MOUNTED TYPE, 100 WATT, HIGH PRESSURE SODIUM, 480 VOLT, AS PER PLAN	12
			625	27600	3	EACH	LUMINAIRE, MISC.: LUMINAIRE, TYPE V, 100 WATT, HIGH PRESSURE SODIUM, 480 VOLT, AS PER PLAN	12
			625	27600	3	EACH	LUMINAIRE, MISC.: LUMINAIRE, 150 WATT, HIGH PRESSURE SODIUM, 480 VOLT, AS PER PLAN	12
			625	27600	3	EACH	LUMINAIRE, MISC.: LUMINAIRE, BRIDGE MOUNTED, 200 WATT, HIGH PRESSURE SODIUM, 480 VOLT, AS PER PLAN	12
			625	27600	3	EACH	LUMINAIRE, MISC.: LUMINAIRE, 200 WATT, HIGH PRESSURE SODIUM, 240 VOLT, AS PER PLAN	12
			625	27600	150	EACH	LUMINAIRE, MISC.: LUMINAIRE, 200 WATT, HIGH PRESSURE SODIUM, 480 VOLT, AS PER PLAN	12
			625	27600	3	EACH	LUMINAIRE, MISC.: LUMINAIRE, 310 WATT, HIGH PRESSURE SODIUM, 240 VOLT, AS PER PLAN	12
			625	27600	65	EACH	LUMINAIRE, MISC.: LUMINAIRE, 310 WATT, HIGH PRESSURE SODIUM, 480 VOLT, AS PER PLAN	12
			625	27600	7	EACH	LUMINAIRE, MISC.: LUMINAIRE, 400 WATT, HIGH PRESSURE SODIUM, 480 VOLT, AS PER PLAN	12
			625	27600	15	EACH	LUMINAIRE, MISC.: LUMINAIRE, TOWER LIGHTING, 400 WATT, HIGH PRESSURE SODIUM, 480 VOLT, AS PER PLAN	12
			625	27600	15	EACH	LUMINAIRE, MISC.: LUMINAIRE, TOWER LIGHTING, 1000 WATT, HIGH PRESSURE SODIUM, 480 VOLT, AS PER PLAN	12
			625	29001	2550	LIN FT	TRENCH, AS PER PLAN	12
			625	30701	20	EACH	PULLBOX, 713.08, 18", AS PER PLAN	12

GENERAL SUMMARY

CLAMIA/MOT-70/75/75
-3.43/VAR./VAR.

22
26

QUANTITY	UNITS	NO. OF MONTHS	ITEM	ITEM EXTENSION	TOTAL QUANTITY	UNITS	DESCRIPTION	See Sheet No.	
			625	32001	5	EACH	GROUND ROD AS PER PLAN	12	CHECKED
			625	33100	5	EACH	CIRCUIT BREAKER, TOWER LIGHTING, 15 AMP, 480 VOLTS, AND ENCLOSURE, AS PER PLAN	11	
			625	33100	5	EACH	CIRCUIT BREAKER, TOWER LIGHTING, 30 AMP, 480 VOLTS, AND ENCLOSURE, AS PER PLAN	11	GENERAL SUMMARY
			625	33100	10	EACH	CIRCUIT BREAKER, TOWER LIGHTING, 15 AMP, 480 VOLTS	11	
			625	33100	5	EACH	CIRCUIT BREAKER, TOWER LIGHTING, 30 AMP, 480 VOLTS	11	
			625	34001	3	EACH	POWER SERVICE, AS PER PLAN	13	
			625	34451	1	EACH	CONTROL CENTER CABINET, COMPLETE, AS PER PLAN, 30 AMP	13	
			625	34451	3	EACH	CONTROL CENTER CABINET, COMPLETE, AS PER PLAN, 60 AMP	13	
			625	34451	1	EACH	CONTROL CENTER CABINET, COMPLETE, AS PER PLAN, 100 AMP	13	
			625	34507	3	EACH	CONTROL CENTER MAINTENANCE ITEM, AS PER PLAN, CIRCUIT BREAKER, 30 AMP, 2 POLE, 240 VOLTS	11	
			625	34507	4	EACH	CONTROL CENTER MAINTENANCE ITEM, AS PER PLAN, CIRCUIT BREAKER, 60 AMP, 2 POLE, 240 VOLTS	11	
			625	35011	35	EACH	REMOVE AND REERECT EXISTING LIGHT POLE, AS PER PLAN, ON A NEW BASE	10	
			625	35521	20	EACH	REMOVE AND REERECT BRACKET ARM, AS PER PLAN	10	
			625	36201	250	LIN FT	POWER CABLE FOR LIGHT TOWER, AS PER PLAN	13	
			625	50000	15	EACH	REPAIRING UNDERGROUND BREAK OF CABLE IN DUCT OR CONDUIT	14	
			625	50100	100	EACH	TROUBLESHOOTING UNDERGROUND AND ABOVE GROUND CIRCUITRY PROBLEM	13	
			625	50400	10	EACH	REPAIR INTEGRAL LUMINAIRE LOWERING MECHANISM OF TOWER LIGHTING FIXTURE	11	
			625	50451	10	EACH	SECONDARY SURGE PROTECTOR, AS PER PLAN, (LIGHTING ARRESTOR), HIGH MAST LIGHTING FIXTURE	11	
			SPECIAL	62550510	75	HOUR	EMERGENCY RESPONSE - KNOCKDOWN, ROAD HAZARD AND/OR LIVE EXPOSED WIRE	15	
			625	70001	4	EACH	LIGHTING CONTACTOR, AS PER PLAN, 30 AMP	14	
			625	70001	2	EACH	LIGHTING CONTACTOR, AS PER PLAN, 60 AMP	14	
			625	70001	2	EACH	LIGHTING CONTACTOR, AS PER PLAN, 100 AMP	14	
			625	98000	300	EACH	LIGHTING MISC.: ANNUAL OPERATION AND INSPECTION OF TOWER LIGHTING DEVICES, AS PER PLAN	13	
			625	98000	10	EACH	LIGHTING MISC.: ADAPTER PLATE FOR TRANSFORMER BASE, AS PER PLAN	10	
			625	98000	5	EACH	LIGHTING MISC.: REPAIRING UNDERGROUND BREAK OF DIRECT BURIAL CABLE	14	
			625	98000	2	EACH	LIGHTING MISC.: DISCONNECT SWITCH, 30 AMP, AS PER PLAN	14	
			625	98000	2	EACH	LIGHTING MISC.: DISCONNECT SWITCH, 60 AMP, AS PER PLAN	14	
			625	98000	1	EACH	LIGHTING MISC.: DISCONNECT SWITCH, 100 AMP, AS PER PLAN	14	
			625	98000	15	EACH	LIGHTING MISC.: PHOTO-CELL TRANSFORMER, AS PER PLAN	14	
			625	98000	3	EACH	LIGHTING MISC.: H-O-A SWITCH, AS PER PLAN	14	
			625	98000	77	EACH	LIGHTING MISC.: GROUP HIGH PRESSURE SODIUM LAMP REPLACEMENT, 100 WATT, AS PER PLAN	14	
			625	98000	4	EACH	LIGHTING MISC.: GROUP HIGH PRESSURE SODIUM LAMP REPLACEMENT, 150 WATT, AS PER PLAN	14	

CLAMIA/MOT-7075/75
-3.43/VAR./VAR.

23
26

QUANTITY	UNITS	NO. OF MONTHS	ITEM	ITEM EXTENSION	TOTAL QUANTITY	UNITS	DESCRIPTION	See Sheet No.	
			625	98000	630	EACH	LIGHTING MISC.: GROUP HIGH PRESSURE SODIUM LAMP REPLACEMENT, 200 WATT, AS PER PLAN	14	CHECKED
			625	98000	345	EACH	LIGHTING MISC.: GROUP HIGH PRESSURE SODIUM LAMP REPLACEMENT, 310 WATT, AS PER PLAN	14	
			625	98000	11	EACH	LIGHTING MISC.: GROUP HIGH PRESSURE SODIUM LAMP REPLACEMENT, 400 WATT, AS PER PLAN	14	
			625	98000	264	EACH	LIGHTING MISC.: GROUP HIGH PRESSURE SODIUM LAMP REPLACEMENT, TOWER LIGHT, 400 WATT, 480 VOLT, AS PER PLAN	14	
			625	98000	182	EACH	LIGHTING MISC.: GROUP HIGH PRESSURE SODIUM LAMP REPLACEMENT, TOWER LIGHT, 1000 WATT, 240/480 VOLT, AS PER PLAN	14	
			625	98100	13000	LIN FT	LIGHTING MISC.: REMOVING CABLE IN EXISTING DUCT OR CONDUIT, AS PER PLAN	13	
			625	98100	300	LIN FT	LIGHTING MISC.: PULLBOX DRAINAGE SYSTEM, AS PER PLAN	12	
							SIGN LIGHTING MAJOR MAINTENANCE AND CONVERSION		
			630	75150	2	EACH	LUMINAIRE SUPPORT ASSEMBLY, MISC.: LUMINAIRE SUPPORT ASSEMBLY, TYPE TC-31.20, AS PER PLAN	14	
			630	75150	3	EACH	LUMINAIRE SUPPORT ASSEMBLY, MISC.: LUMINAIRE SUPPORT ASSEMBLY, TYPE TC-31.21, AS PER PLAN	14	
			631	70000	1	EACH	BALLAST WIRING ENCLOSURE, TYPE A		
			631	71000	6	EACH	BALLAST WIRING ENCLOSURE MOUNTING BRACKET		
			631	84000	2	EACH	SIGN SERVICE		
			631	84301	20	EACH	SIGN WIRED, AS PER PLAN	14	
			631	85302	3	EACH	DISCONNECT SWITCH WITH ENCLOSURE, 30 AMP		
			631	85402	3	EACH	SIGN CONTROL ENCLOSURE, TYPE X	15	
			631	87400	5	EACH	BALLAST MISC.: REMOTE MERCURY VAPOR BALLAST, 100 WATT, 120 VOLT, AS PER PLAN	15	
			631	87400	5	EACH	BALLAST MISC.: REMOTE MERCURY VAPOR BALLAST, 100 WATT, 480 VOLT, AS PER PLAN	15	
			631	87400	10	EACH	BALLAST MISC.: REMOTE MERCURY VAPOR BALLAST, 175 WATT, 120 VOLT, AS PER PLAN	15	
			631	87400	5	EACH	BALLAST MISC.: REMOTE MERCURY VAPOR BALLAST, 175 WATT, 240 VOLT, AS PER PLAN	15	
			631	87400	15	EACH	BALLAST MISC.: REMOTE MERCURY VAPOR BALLAST, 175 WATT, 480 VOLT, AS PER PLAN	15	
			631	87400	5	EACH	BALLAST MISC.: REMOTE MERCURY VAPOR BALLAST, 250 WATT, 120 VOLT, AS PER PLAN	15	
			631	87400	5	EACH	BALLAST MISC.: REMOTE MERCURY VAPOR BALLAST, 250 WATT, 480 VOLT, AS PER PLAN	15	
			631	89500	5	EACH	MERCURY VAPOR LUMINAIRE, MISC.: MERCURY VAPOR LUMINAIRE WITH 100 WATT LAMP, AS PER PLAN	15	
			631	89500	20	EACH	MERCURY VAPOR LUMINAIRE, MISC.: MERCURY VAPOR LUMINAIRE WITH 175 WATT LAMP, AS PER PLAN	15	
			631	89500	10	EACH	MERCURY VAPOR LUMINAIRE, MISC.: MERCURY VAPOR LUMINAIRE WITH 250 WATT LAMP, AS PER PLAN	15	
			631	97700	1	EACH	SIGN LIGHTING MISC.: CONTROL CENTER CABINET, COMPLETE, 30 AMP, AS PER PLAN	14	
			631	97700	3	EACH	SIGN LIGHTING MISC.: DISCONNECT SWITCH, 30 AMP, AS PER PLAN	15	

GENERAL SUMMARY

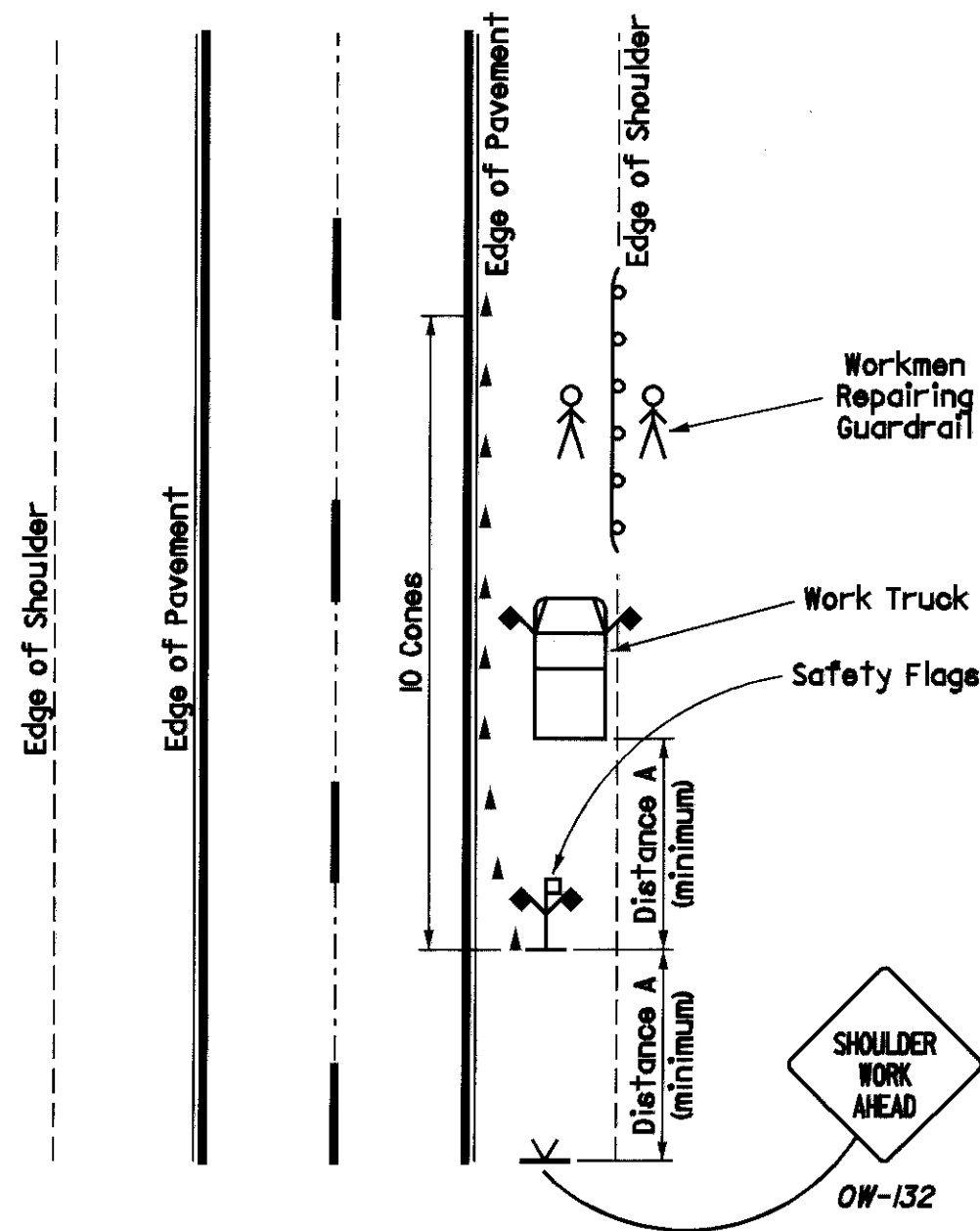
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-3.43/VAR./VAR.

24

26

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TYPICAL APPLICATIONS OF
TRAFFIC CONTROL DEVICES
FOR
STATIONARY OPERATIONS
ON THE SHOULDER

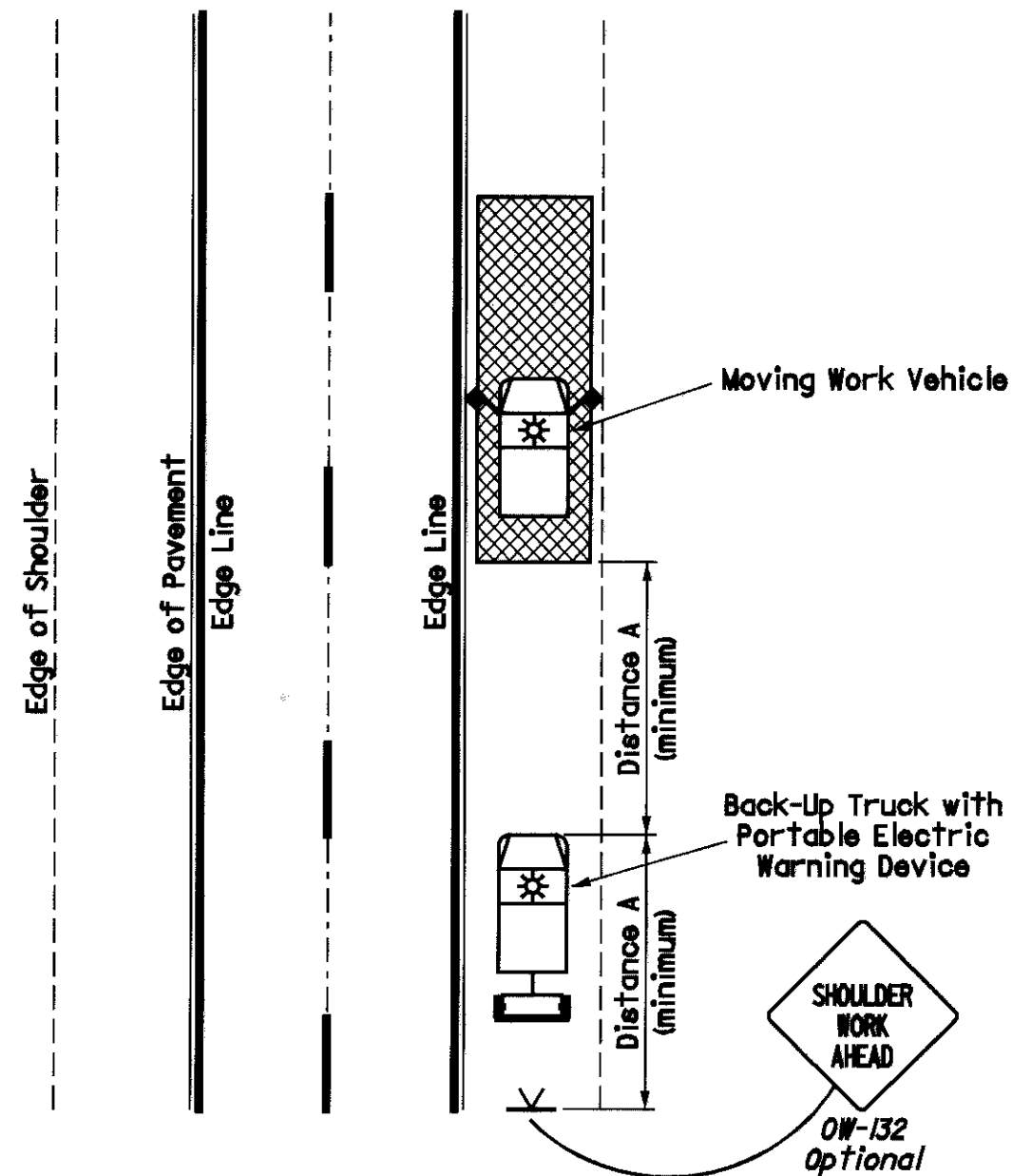


REF. SEC.
7D-16

NOTE: 1. For work within the median, install the same cones and signs for both directions of travel.

TYPE OF ROADWAY	DISTANCE
	A = feet
Urban	200
Standard	500
Expressway	750

TYPICAL APPLICATIONS OF
TRAFFIC CONTROL DEVICES
FOR
MOVING OPERATIONS
ON THE SHOULDER



REF. SEC.
7D-16 7G-8

NOTE: 1. For work within the median, use the same treatment for both directions of travel.

TYPE OF ROADWAY	DISTANCE
	A = feet
Urban	200
Standard	500
Expressway	750