CITY OF BARDSTOWN

UNDERGROUND DISTRIBUTION

POLICIES AND REGULATIONS

INDEX

DEFINITIONS

GENERAL CONSIDERATIONS

I. RESIDENTIAL HOUSING DEVELOPMENTS

A. Subdivisions-Buildings With One Dwelling Unit Each

1. General policy

2. Exceptions

B. Mobile Home Developments

1. General policy

2. Exceptions

C. Other Residential Housing

1. Townhouse/condominium developments

2. Residential (Non-subdivision) applications

D. Temporary Or Construction Power Requirements

1. General policy

2. Charges

E. Applicant/Developer Responsibilities

1. Pre-construction period

2. Concerning construction

F. Underground Service From Overhead Transformers Or Secondary

1. General policy

2. Exceptions

II. OTHER UNDERGROUND SERVICE

A. Commercial And Industrial Installations

1. General policy

2. Exceptions

B. Replacement of Overhead Facilities With Underground

1. General policy

2. Limitations

III. TRANSFORMER CAPACITY LIMITS

IV. INFEASIBLE UNDERGROUND SERVICE

UNDERGROUND DISTRIBUTION

CONSTRUCTION PRACTICES AND PROCEDURES

I. LOCATION OF FACILITIES

A. Underground Residential Distribution (URD)

B. Individual Underground Extension

C. Transformers And Similar Equipment

D. Metering

II. EASEMENTS AND ACCESS RIGHTS

III. CONSTRUCTION PROCEDURES

IV. STREET LIGHTING

V. JOINT CONSTRUCTION

VI. TEMPORARY OR CONSTRUCTION SERVICE

VII. MAPS AND RECORDS

VIII. MARKING CABLE LOCATIONS

IX. URD SAFETY CONSIDERATIONS

DEFINITIONS

Applicant - The builder, customer, owner or other individual requesting the installation of underground service or requests service in a development with underground facilities

Builder - The person, partnership or corporation responsible for constructing any building or structure and requesting temporary or permanent underground service.

Building - A structure enclosed within exterior walls or fire walls, built, erected and framed of component structural parts.

City - The City of Bardstown, with its duly authorized agents of the Electric Department acting under the direction of the Mayor and City Council.

Customer - First Applicant for permanent service and meter installation at any location.

Developer - The person, partnership or corporation responsible for the development of a multiple-lot subdivision, as regulated by the Joint City County Planning Commission of Nelson County.

Distribution System - Electric service facilities consisting of primary and secondary conductors, conduits, transformers and necessary equipment for the furnishing of electric power at utilization voltage.

Service - Service cable along with necessary accessories and appurtenances with service length defined as being measured from the padmounted transformer (or secondary pedestal, where applicable) or base of riser pole (when fed from an overhead secondary facility) to the structure at the point where the meter is located (400 amp services or less).

Residential Subdivision - the tract of land which is divided into multiple lots, as regulated by the Joint City County Planning Commission of Nelson County, for the construction of new residential single-family homes.

Commercial Subdivision - the tract of land which is divided into multiple lots, as regulated by the Joint City County Planning Commission of Nelson County, for the construction of new commercial or light industrial buildings.

Townhouse/Condominium - A building of special construction which shares a fire wall with adjacent similar structures, all of which are enclosed within exterior walls, which building is normally located on a narrow lot, which building and/or lot may be owned and treated as a dwelling unit separate from similar adjacent such units and may require an individual, ungrouped meter installation.

UNDERGROUND DISTRIBUTION

POLICIES AND REGULATIONS

GENERAL CONSIDERATIONS

The City's general policy is that underground systems are optional and may be constructed upon the mutual agreement of the City and Developer/Applicant. The City will endeavor to provide service by the most direct, economical and feasible route and in the most economical and practical matter. Any deviation is at the City's discretion. The cost difference between underground and overhead is to be born by the Developer/Applicant. The fees specified herein are based upon average costs for the intended application. The Developer/Applicant may be required to reimburse the City for applications which are not normal. The sizing of all distribution facilities is at the sole discretion of the City.

In new residential subdivisions, the City will install, own, operate and maintain all underground primary and secondary electric systems on the source side of its point of delivery. Primary and secondary systems include all primary cables, transformers, secondary cables, pedestals, junctions, connectors and switchgear along with all conduits and transformer pads up to the point of delivery. The City will reasonably determine the locations of these systems. Appurtenances such as transformers, pedestal-mounted terminals, switching equipment and metering cabinets will be placed above ground. The point of delivery shall be the load side of the transformer or secondary junction that serves the Applicant's lot. The Applicant is required to furnish, install and maintain the appropriate service conduit(s) in a trench, according to size, depth and any other applicable specifications as reasonably determined by the City. The City will install, own, operate and maintain its service conductor(s) in this conduit system. The point of connection shall be the Applicant-installed meter base. The Applicant shall be responsible for all electric equipment past the point of connection. The City shall determine the location of its meters and will furnish, install and maintain them. The Applicant shall furnish and install the meter base(s). The Developer(s) shall provide, as part of the overall property development, a trench system to City specifications for the installation of the City's primary (and secondary as necessary) conduits to each property (lot) line and as part of its landscaping requirements will provide and install backfill to City specifications in this trench system. All fees and charges are as described herein.

In commercial and industrial developments, the City will install, own, operate and maintain all underground electric systems to the point of delivery as described herein. These systems include all primary cables, transformers, pedestals, connectors and switchgear (along with all conduits, in subdivision developments only) up to the point of delivery. Irregardless of the point of metering, the point of delivery shall be the load side (secondary terminals) of the transformer (or secondary junction, as applicable) except where otherwise provided for special primary metered contracts. The locations of the primary and secondary systems shall be reasonably determined by the City.

Appurtenances such as transformers, pedestal-mounted terminals, switching equipment and metering cabinets will be placed above ground. In the case of a commercial or industrial subdivision the Developer(s) shall provide, as part of the overall property development, a trench system to City specifications for the installation of the City's primary (and secondary as necessary) conduits to each property (lot) line and as part of its landscaping requirements will provide and install backfill to City specifications in this trench system. The City recognizes that individual locations requiring capacity in excess of 300 kVA, three phase, are normally more economically served by padmount transformer installations. The City encourages such individual locations with a 300 kVA or greater load requirement to coordinate the installation of a padmount transformer installation with the City. Applicant will furnish, install, own and maintain the necessary trench(s) complete with backfill, concrete transformer pad, all secondary conduit systems and except as otherwise provided herein, all secondary conductors from the point of delivery. The Applicant shall also provide a trench system complete with backfill to City specifications and install own and maintain the appropriate conduit(s) for the installation of the City's primary system(s) where the location of the transformer is not in the immediate vicinity of existing primary facilities (or lot line in subdivision applications) and/or is interior to the Applicant's property. The City will determine the location of its meters and will furnish, install and maintain them. Applicant shall will install any self-contained meter base(s) for services rated 400 amps or less. All City fees and charges are as described herein.

In new Residential (non-subdivision) applications, the City will install, own, operate and maintain all primary and secondary electric systems on the source side of its point of delivery. Primary and secondary systems include all primary cables, transformers, secondary cables, pedestals, junctions, connectors and switchgear (along with all conduits up to the point of delivery in the case of multiple lots only). The City shall reasonably determine the locations of these systems. Appurtenances such as transformers, pedestal-mounted terminals, switching equipment and metering cabinets will be placed above ground. The Applicant is required to furnish and install the appropriate service conduit(s) in a trench, according to size, depth and any other applicable specifications as reasonably determined by the City. The City will install, own, operate and maintain its service

conductor(s) in this conduit system. The point of connection shall be the Applicant-installed meter base (or wire trough, where applicable). The Applicant shall be responsible for all electric equipment past the point of connection. The Applicant shall perform all trenching and backfilling for the installation of the City's primary (and secondary, as necessary) systems in accordance with City specifications. The City shall determine the location of its meters and will furnish, install and maintain them. The Applicant will furnish and install the meter base(s). Applicant with multiple lots will provide, as part of the overall property development, a trench system to City specifications for the installation of City's primary (and secondary as necessary) conduits to each property (lot) line and as part of its landscaping requirements will provide and install backfill to City specifications in this trench system.

The City requires, without cost to or condemnation by the City, suitable land rights (easements, etc.) be granted to it obligating Applicants and successors to provide continuing access to its electric facilities for operation, maintenance and replacement purposes and to prevent encroachment on these rights and/or substantial change in grade or elevation.

The City is normally responsible for repairs and replacements of its facilities unless such repairs or replacements result from an act or negligence of Developer/Applicant, property owner or other party acting in their behalf, including, but not limited to, their contractor(s) or other utilities.

Three-phase primary mains or feeders required within a subdivision to supply other local distribution or to serve individual three-phase loads may be overhead. If underground mains or feeders are requested, the requesting party may be required to

reimburse the City for any additional cost incurred for the installation of these facilities underground (difference in overhead and underground).

Extension of the City's facilities from existing supply lines to the boundary of the subdivision normally will be overhead. Upon request, such extensions may be installed underground provided the requesting party reimburses the City for the difference in underground and overhead facilities.

The fees or charges indicated in these rules are based on the premise that Applicants and Developers will cooperate to the fullest extent with the City in an effort to keep the cost of construction and installation of underground electric facilities as reasonable as possible. The City will install its primary and secondary systems in any development according to the portion of the subdivision in which the developer has under active development (i.e., compliance with applicable rules, regulations and ordinances, lots available for sale, etc.). In all subdivisions where the Developer has chosen to construct an underground system, the protective covenants for lots in the development shall include a requirement for underground service and payment of all associated fees and charges incurred therein. Bonding requirements to ensure the proper completion by the Applicant or Developer of a subdivision shall be prescribed in the Subdivision Regulations of the Joint City County Planning Commission of Nelson County. Approval of bonds shall be made by the City legislative body.

Since many underground facilities for water, sewer, gas, electric, telephone, CATV, and street lighting may be required for the orderly construction of a new development, it is important that close coordination among the utility installers, developers and designers be

maintained during the course of construction. All electrical facilities shall be installed and constructed to comply with all applicable codes and regulations.

Nothing herein contained shall prevent the City and Developer/Applicant from mutually agreeing to alternate fees or charges and/or methods of construction in the interest of seeking better and more economical installations of underground electric facilities. These rules are subject to revision from time to time by the City Electric Department with approval by the City Council.

I. RESIDENTIAL HOUSING DEVELOPMENTS

I. RESIDENTIAL HOUSING DEVELOPMENTS

A. Subdivisions - Buildings with one dwelling unit each.

1. General Policy

a. The Developer shall provide, as a part of the overall property development, a trench system to City specifications for installation of the City's primary (and secondary, as necessary) conduit systems to each property (lot) line, and as part of its landscaping requirements shall provide and install backfill to City's

specifications in that trench system. Acceptable easements shall be provided for these systems.

b. The City will install its primary (and secondary, as necessary), conductors in the conduit system above. The City shall require an individual Applicant (Builder/Customer) to install the service conduit system complete with trench and backfill and to connect this conduit system to the point of delivery. Applicant (Builder/Customer) shall pay a base fee of $75.00 per service for share of padmount transformer cost plus $0.20 per foot of service cable to have the City install, own, operate, and maintain its service cable system in Applicant-installed conduit system. Applicant-installed conduit system shall remain the property and responsibility of Applicant (Builder/Customer).

2. Exceptions

Fees for the complete underground system owned by the City may be increased to cover added costs required by Developer/Applicant due to the following special conditions:

a. Unusually rough terrain;

b. Unusual layout of development and excessive distance between buildings;

c. Meter(s) at location(s) other than specified by the City;

d. Replacement of existing overhead facilities with underground;

e. Voltage requirements other than single-phase, 120/240 volts;

f. Townhouse/condominium developments;

g. Other developments requiring three-phase supply or primary voltage within buildings or vaults.

h. Fewer than 10 lots to be served in a given subdivision or lots that average larger than 0.75 acre.

i. Service entrance larger than 400 amps.

B. Mobile Home Developments - Underground Primary, Secondary, and Services

1. General Policy

a. Developer (mobile home park development) shall provide, as a part of the overall property development, a trench system to City specifications for installation of the City's primary (and secondary, as necessary) conduit systems to each property (lot) line. The Developer shall provide and install service conduits from each lot line to each meter pedestal described in (b) below. The City will install its underground primary (and secondary, as required) facilities in this conduit system. Developer shall, as part of the development's landscaping requirements, provide and install backfill to City specifications in that trench system. Acceptable easements shall also be provided for these systems.

Developer, if the owner of the lots, or Applicant, if in a mobile home subdivision, shall pay a base fee of $75.00 per service for share of padmount transformer cost plus $0.20 per foot of service cable to have the City install, own, operate, and maintain its service cable system in Developer/Applicant-installed service conduit system. Developer/Applicant-

installed service conduit system shall remain the property and responsibility of Developer/Applicant.

b. Developer/Applicant shall furnish and install for each mobile home, at a location mutually agreeable to the City and Developer, a combination meter service and disconnect device (meter pedestal), the design and installation of which shall be subject to approval by inspection by State certified inspector and the City, with the following features: (1) 200 amps main line current capacity; (2) a suitable socket for the City's meter mounted at a minimum height of 36"; (3) lugs for attaching the City's service cables; (4) provisions for one, two or three 50 amp plug-in receptacles with associated protective breaker(s) or fuse(s); (5) provisions for attachment of mobile homeowner's possible feeder assembly cable and for associated 100 amp, 150 amp or 200 amp main breaker; (6) provision for restriction of unauthorized access to the City's service cable lugs, meter, and meter connections through use of appropriate locks by the City; (7) locking arrangements for the City's use which are entirely separate from any locks or security measures required by Developer in connection with receptacles, breakers, feeder assembly cable terminations, etc. located on or within the device.

c. One or more meter service and disconnect devices shall be rigidly mounted on a support which is acceptable to the City and shall be located and positioned as follows: (1) not more than forty feet from the centerline of the City's easement for the primary and/or secondary systems from which said pedestal, or group of pedestals are served; (2) so as to facilitate access thereto by the City's meter reading and service personnel but not within four feet of the edge of any street, road or driveway or within one foot of any regularly used walkway; (3) so that the mobile home to be supplied by that device may be attached to it by a cable not more than 36.5 feet long. Meter

pedestal shall be solidly connected with minimum #6 Cu. to an 8 foot driven ground of either 5/8" copperweld rod or 3/4" galvanized pipe.

d. Installation by the City of underground electric distribution facilities as set forth in Section I.C.1.a. above is available only to Developers of approved mobile home parks that will provide for semipermanent and nontransient type housing. All mobile homes to be located in said parks shall conform with the latest revised National Electrical Code and particularly are defined in Article 550-2 of the 1990 N.E.C. as "A factory-assembled structure or structures equipped with the necessary service connections and made so as to be readily movable as a unit or units on its own running gear and designed to be used as a dwelling unit(s) without a permanent foundation". The average centerline-to-centerline spacing of the housing units shall not exceed 50 feet. Any other type of a load (residential, commercial, etc.) within the boundaries of a mobile home park that is served with underground electric distribution facilities must be considered separate and distinct from this section and only under other sections of the City's Underground Electric Distribution Extension Policies, as applicable.

2. <u>Exceptions</u>

Fees for the underground system owned by the City may be increased to cover added costs required by the Developer due to the following special conditions:

a. fewer than 10 lots to be served in a given development;

b. average centerline-to-centerline spacing of mobile homes in excess of 50 feet;

c. distance from centerline of the City's normal easement to meter service and disconnect device in excess of 40 feet;

d. request for additional service of a different type and/or nature (residential, recreational, commercial, etc.) within the confines of the mobile home park;

e. unusually rough terrain;

f. irregular layout of lots;

g. service entrance larger than 200 amps;

h. replacement of existing overhead facilities with underground;

i. voltage requirement other than single-phase, 120/240 volts.

C. Other Residential Housing

1. Townhouse/Condominium Developments

a. The Developer (or Owner, as hereunder applicable herein) shall provide, as a part of the overall property development a trench system to City specifications for the installation of the City's primary (and secondary, as necessary) conduit systems to the point of delivery, as well as, the service conduits from the City's point of delivery to the service entrance(s). The Developer will, as part of its landscaping requirements, provide and install backfill to City specifications in that trench system. Acceptable easements shall be provided for these systems.

b. The City will install its primary (and secondary, as necessary), conductors in the conduit system above. The City shall require Developer to install the service conduit system complete with trench and backfill and to connect this conduit system to the point of delivery. Developer shall pay a base fee of $200.00 per transformer required plus $0.20 per foot of service cable to have the City install, own, operate, and maintain its service cable system in

Developer-installed service conduit system. Developer-installed conduit system shall remain the property and responsibility of Developer.

c. In the case of two or more meters per building, the City will, as outlined herein, extend service to individual meter bases or to a connection point in a junction box or wireway trough provided by Developer on the source side of the meters at a location approved by the City:

1. Individual meter bases:

Fees and requirements are as outlined in b. above for each dwelling unit.

2. Multiple-meter (gang) meter bases:

Developer shall install the service conduit system from the junction box or wireway trough, complete with trench and backfill and to connect the conduit system to the City's point of connection. Developer shall pay a base fee of $200.00 per transformer required plus $0.40 per foot of service cable to have the City install, own, operate, and maintain its service cable system in Developer-installed conduit system. Developer-installed conduit system shall remain the property and responsibility of Developer.

d. Fees for the complete underground system owned by the City may be increased to cover added costs required by Developer/Applicant due to the following special conditions:

a. Unusually rough terrain;

b. Unusual layout of development and excessive distance between buildings;

c. Meter(s) at location(s) other than specified by the City;

d. Replacement of existing overhead facilities with underground;

e. Voltage requirements other than single-phase, 120/240 volts;

f. Other developments requiring three-phase supply or primary voltage within buildings or vaults.

g. Service entrance(s) with more than 400 amps connected capacity.

2. Residential (NON-Subdivision) Applications

a. Applicant (Builder/Customer or successors) with single lot or property shall provide and maintain trench along with backfill for the installation of the City's underground primary system in accordance with City specifications. The City will install, own, and maintain the primary cable and transformer(s). The City shall require Applicant (Builder/Customer) to install the service conduit system complete with trench and backfill to connect this conduit system to the City's point of delivery. The Applicant (Builder/Customer) shall pay a base fee of $200.00 per transformer required plus $0.20 per foot of service cable to have the City install, own, operate, and maintain its service cable system in Applicant-installed conduit system. Applicant-installed service conduit system shall remain the property and responsibility of Applicant (Builder/Customer). Suitable provision for the City's meter shall be made by Applicant in accordance with the City's general rules and regulations. Acceptable easements shall also be provided for these systems.

b. Fees for the complete underground system owned by the City may be increased to cover added costs required by Applicant due to the following special conditions:

1. Unusually rough terrain;

2. Unusual layout of development and excessive distance between buildings;

3. Meter(s) at location(s) other than specified by the City;

4. Replacement of existing overhead facilities with underground;

5. Voltage requirements other than single-phase, 120/240 volts;

6. Townhouse/condominium developments;

7. Locations requiring three-phase supply or primary voltage within buildings or vaults.

8. Service entrance larger than 400 amps.

D. Temporary or Construction Power Requirements

1. General Policy

a. Applicant will furnish and install all material including support (stub), meter base and service attachment, switch-fuse assembly, grounding and all other necessary equipment other than meter and service cable.

b. The City will furnish meter and will install a service cable from the Applicant's equipment to the transformer.

2. Charges

The City will make a charge to Applicant for construction service which includes the connecting and disconnecting of Applicant's cables to and from the padmount transformer as set out in the latest ordinance revision. Each time the City is called out by Applicant to make either a connect or disconnect but

is unable to do so due to lack of readiness by Applicant, a charge may be made in accordance with approved City practice.

E. Developer/Applicant Responsibilities

1. Pre-Construction Period - When Developer/Applicant has complied with the following requirements and given the City not less than 4 months written notice prior to the anticipated date of completion (i.e., ready for occupancy) of the first building in the development or on Applicant's property for non-subdivision customers, the City normally will have its facilities installed 30 days prior to the estimated completion date (subject to weather, ground conditions, availability of material and barring extraordinary or emergency circumstances beyond the control of the City).

a. Developer/Applicant shall furnish the City a plat of the development or survey print of the property showing streets and finalized lot lines for application of the City's easement requirements.

b. Developer/Applicant shall record in the county court clerk's office the final plat of the development. The plat must show all easements and include a certificate thereon stipulating restrictions and ingress and egress rights to the City for access to its facilities at all times for maintenance and repairs. Any changes in the plat subsequent to the City's approval will be acknowledged to the City in writing, and approval of these changes must be secured from the City before recording the plat. The City may, at its option, require

execution of its standard easement form in lieu of recorded plat on which easements are dedicated.

c. Developer/Applicant may be required to sign a letter of agreement or contract stating terms and conditions, including identification as to ownership and location of the development, number of lots, deed restrictions as to proper usage, arrangements for property development trenching and landscaping backfill, and the anticipated date of completion.

d. Developer/Applicant shall pay the total service fees prior to the City starting service work.

2. Concerning Construction - Developer/Applicant will have the following responsibilities:

a. Before the City's construction can begin, Developer/Applicant may be required to complete installation of sanitary and storm sewers in the construction area, make the area in which the underground distribution facilities are to be located accessible to the City's equipment, remove all obstructions from such area and stake to show property lines and final grade.

b. Developer/Applicant must establish to within six (6) inches the final grade prior to construction of the conduit and cable routes. At padmounted equipment locations, final grade must be established before pads are set.

c. Developer/Applicant's property development easement trenching and landscaping backfill work must be closely coordinated with the City's schedule to install conduit, etc. for the mutual advantage and benefit of both parties, and must be done in accordance with City specifications with final acceptance by City Engineer.

F. Underground Service from Overhead Transformer or Secondary

1. General Policy

a. In the case of a new service connection or the upgrading of an existing inadequate service due to enlargement of Applicant's (Builder/Customer) service entrance, underground secondary service can be provided from overhead facilities where practical. The City shall require Applicant (Builder/Customer) to install the service conduit system complete including a rigid metal elbow at bottom of riser pole along with trench and backfill. The City will connect Applicant's conduit system to the City's riser pole conduit facilities. Applicant (Builder/Customer) with 200 amps or less of service capacity shall pay a fee of $20.00 plus $0.20 per foot of service cable to have the City install, own, operate, and maintain its service cable system in Applicant-installed conduit system. The fee for service capacities larger than

200 amps and up to and including 400 amps is $20.00 plus $0.40 per foot of service cable. Applicant (Builder/Customer) shall provide, install, own and maintain all service conductors for services in excess of 400 amps. Applicant-installed service conduit system shall remain the property and responsibility of Applicant (Builder/Customer). The City will provide, install, own, operate, and maintain complete riser pole conduit.

b. In the case of more than one meter per building, the City will extend service to a delivery point in a ganged meter base, junction box or wireway trough provided by Applicant (Builder/Customer) on the source side of the meters at a location approved by the City. The City shall require Applicant (Builder/Customer) to install the service conduit system complete, with trench and backfill along with a rigid metal elbow at the riser pole. The City will connect Applicant's conduit system to the City's riser pole conduit facilities. Applicant (Builder/Customer) with total service capacity of up to and including 400 amps shall pay a base fee of $40.00 plus $0.20 per foot of service cable to have the City install, own, operate, and maintain its Service cable system in Applicant-installed conduit system. Applicant (Builder/Customer) shall provide, install, own and maintain all service conductors for service capacities in excess of 400 amps. Applicant-installed service conduit system shall remain the property and responsibility of Applicant (Builder/Customer). The City will provide, install, own, operate, and maintain complete riser pole conduit.

c. When an existing overhead service of adequate capacity and maximum 4/O AL size is replaced with underground at Applicant's (Builder/Customer) request, a removal cost of $35.00 in addition to the appropriate service

installation fee noted above should be paid when the replacement Service is requested.

d. Unless otherwise approved by the City, all individual services of 400 amps or less shall be metered with self-contained meters. The Applicant (Builder/Customer) shall provide install, own and maintain all self-contained or gang meter bases and shall be responsible for installing and maintaining all electric equipment on the load side of the meter base or wireway trough, in gang meter applications. Normally, no self contained metering may be installed at the source end of such underground service.

e. All secondary metered services with capacities greater than 400 amps shall be metered with instrument transformers. Unless specifically requested by the Applicant (Builder/Customer) and approved by the City, the metering equipment shall be installed at the point of delivery which, for underground services from overhead facilities, are the transformer secondary terminals or overhead secondary conductors. The Applicant (Builder/Customer), for secondary delivery service capacities in excess of 400 amps, shall be responsible for installing and maintaining all electric facilities past this point of delivery.

2. <u>Exceptions</u>

Fees for the complete underground service owned by the City may be increased to cover added costs required by the Applicant due to the following special conditions:

a. voltage requirements other than single-phase, 120/240 volts;

b. service length more than 150 feet;

c. size of conductors beyond practical limits;

d. other unusual circumstances.

II. Other Underground Service

A. Commercial and Industrial Installations

1. General Policy

It is the City's policy to provide service in the most economical manner. Each Applicant requesting commercial or industrial underground service will be required to pay all applicable fees and provide facilities as set out below.

a. In commercial or industrial developments, the developer shall provide, as a part of the overall development, a trench system complete with backfill to City specifications for the installation of the City's underground primary conduit system(s) to each property (lot) line. Acceptable easements shall be provided for these systems. The City will install, own operate and maintain its primary facilities in this conduit system.

b. For secondary delivery installations, Applicant (Builder/Customer/Owner as hereunder applicable herein) shall furnish, install, own and maintain, (1) all secondary conduits, (2) the concrete pad for padmounted transformer and (3) the primary conduit(s) from the transformer to either the lot line in a commercial/industrial development or the City's designated point of delivery including a rigid metal elbow, if applicable, at the bottom of the riser pole. Applicant shall provide the trenching and backfilling for all required conduit systems in accordance with City specifications. The City will install, own, operate and maintain complete riser pole conduits, its primary conductors in the Applicant installed primary conduit system(s) and the padmount transformer. The remaining fees and requirements are outlined below.

1. For single phase padmount locations, the Applicant shall pay a base fee of $200.00 per transformer required to cover the difference in cost of the

padmount transformer. The Applicant shall also pay a for of $0.20 per foot of service cable for service capacities up to and including 200 amps to have the City install, own, operate and maintain its service cable in the Applicant-installed conduit system(s). For services with capacities greater than 200 amps and up to and including 400 amps, this fee shall be $0.40 per foot of service cable. Where the total capacity of a location exceeds 400 amps, whether in single or multiple metered installations, the Applicant shall provide, install, own and maintain all secondary conductors; the City will provide and install the secondary connectors and attach them to the transformer secondary terminals.

2. For three phase padmount installations, the Applicant shall pay a fee per transformer for the difference in cost of the padmount transformer plus, for locations with capacities of 400 amps or less, a fee per foot of service cable to have the City install, own, operate and maintain its service cable in the Applicant-installed secondary conduit system. These fees are outlined below.

	Transformer	
Service Capacity (Amps)	Install Fee	Pulling Fee
Capacity ≤ 200	$500.00	$0.20/ft
200 < Capacity ≤ 400	$500.00	$0.40/ft
400 < Capacity ≤ 800	$400.00	N/A - Appl. Installed

800 < Capacity ≤ 1200	$200.00	N/A - Appl. Installed
Capacity ≥ 1200	No charge	N/A - Appl. Installed

3. Unless otherwise approved by the City, all individual services of 400 amps or less shall be metered with self-contained meters. The Applicant shall provide install, own and maintain all self-contained or gang meter bases and shall be responsible for installing and maintaining all electric equipment on the load side of the meter base or wireway trough, in gang meter applications.

4. All secondary metered services with capacities greater than 400 amps shall be metered with instrument transformers. Unless specifically requested by the Applicant and approved by the City, the metering equipment shall be installed at the point of delivery which, for padmount transformer installations, are the transformer secondary terminals. The Applicant can request that the meter be installed either at the transformer or at the building being served (or other approved location) if Applicant provides a 3/4" PVC conduit from the transformer pad to the approved location for the meter enclosure. The Applicant, for secondary delivery service capacities in excess of 400 amps, shall be responsible for installing and maintaining all electric facilities past this point of delivery.

5. If Applicant wishes to have the City install an underground service from overhead secondary or transformer, Applicant comply with the requirements set forth in Section F. above

c. For load requirements greater than 300 kVA, three phase, the City will provide primary voltage delivery provided Applicant furnishes, installs, owns and maintains, (1) all secondary conduits and conductors, (2) the concrete pad for padmounted transformer and (3) the primary conduit(s) from the transformer to either, (a) the lot line in a commercial/industrial development or, (b) the City's designated point of delivery including a rigid metal elbow, if applicable, at the bottom of the riser pole. Applicant shall provide the trenching and backfilling for all required conduit systems in accordance with City specifications. The City will install, own, operate and maintain complete riser pole conduits, primary metering equipment, its primary conductors in the Applicant installed primary conduit system(s) and the padmount transformer. No transformer fee is required for load requirements greater than 300 kVA.

1. All City-supplied primary underground cables serving or industrial loads shall be in appropriate conduit systems supplied by the Applicant. All such conduit shall be owned, repaired or replaced by Applicant or subsequent property owner with exception of riser pole conduit.

2. Where Applicant elects to own the primary underground cables and facilities, the City will determine the point of delivery and division of ownership, at which point the primary meter shall be installed.

2. Exceptions

a. If requested and mutually agreeable, the City may perform trenching and backfilling, furnish conduits, and transformer pads for Applicant. The City shall be reimbursed by Applicant for all costs incurred and Applicant or subsequent property owner will own, repair, and replace as may be required, all such conduits or pads.

b. Each replacement of existing overhead facilities with underground is also a special case requiring individual consideration. See Section II.B. for determination of reimbursement.

B. Replacement of Overhead Facilities with Underground

1. General Policy

Where requests are received by the City to replace segments of existing overhead facilities with underground, and are agreeable to all affected customers and the City, Developer of Applicant making such request will reimburse the City

for its cost of construction with the amount of said reimbursement to be determined as follows:

a. the total cost of work to be approved (including new services);

b. plus the installed cost of transformers and pads;

c. plus labor cost of removal including services being removed;

d. minus total salvage including any services removed which will be salvaged or junked in same manner as other conductor;

f. minus betterments, if any

This total is the net relocation cost to be paid in full by Applicant prior to beginning work. Work contributions in lieu of cash are acceptable for items such as ditching, backfilling, conduit, transformer pads, etc., at the value used in the estimate.

2. Limitations

Individual, single-phase overhead residential services up to a maximum size of 2/O AL should be treated according to Section I.F.1.c. of this Policy.

III. TRANSFORMER CAPACITY LIMITS

Standard capacity of padmounted transformers shall be limited to 167 KVA for single-phase and 1000 KVA for three-phase installations requiring 208Y/120 or 240D/120 volt secondary and 3000 KVA for three-phase installations requiring 480Y/277 volt secondary.

IV. INFEASIBLE UNDERGROUND SERVICE

The City is not obligated to supply underground service when, in the judgment of the City, such service would be infeasible, impractical or contrary to good operating or engineering practice.

UNDERGROUND DISTRIBUTION

CONSTRUCTION PRACTICES AND PROCEDURES

I. LOCATION OF FACILITIES

A. Underground Residential Distribution (URD)

It is the City's general construction practice to locate its underground electric Distribution System, including padmount transformers, within a private easement or dedicated utility strip along the front, rear or side lot lines as dictated by the most economical means of construction to provide both reliable electric service and future accessibility to underground equipment. Where economically and practically feasible, a loop feed will be established. Care should be taken to not place transformers directly on or facing lot lines which could eventually hamper operation when fences are built. The City reserves the right to require an overhead feeder route through each URD area as system design dictates. This feeder may be placed underground, at the City's discretion, if requested and paid for by Customer.

B. Individual Underground Extension

Underground cables from an existing pole line, and associated above ground equipment, such as padmount transformers, new riser poles, necessary pole line extensions, etc., will be routed and located in the most direct, economical, and practical manner.

C. Transformers and Similar Equipment

1. Installation of equipment will be in accordance with all applicable codes and City specifications. If padmounted oil-filled equipment is located adjacent to a Building, only solid, nonflammable walls without windows and doorways are allowed in the vicinity of the equipment. Doors of padmounted equipment must not be faced toward existing or anticipated walls or other permanent obstructions. Sufficient working area should be provided and maintained as follows: ten (10) foot minimum clearance in front of equipment doors and six (6) foot minimum clearance on the sides. The back of padmounted equipment shall not have less than the following minimum clearances to a Building wall(s) as required by the State Fire Marshall: three (3) foot for transformers 75 KVA and less; fifteen (15) foot for transformers 76 through 500 KVA; and twenty-five (25) foot for transformers 501 KVA and larger. It is the responsibility of the Developer/Applicant to determine and verify applicable clearance requirements according to the State Fire Marshall's latest rules regarding such clearances. In order to limit transmission of noise and vibration, concrete equipment pads should not be poured as part of the Building foundation or attached to it. In subdivision and residential areas, cables, transformers, and other devices should not be installed closer than one foot to a property line.

2. Padmounted equipment shall be located and positioned so as to afford maximum ventilation. In order to protect equipment from vehicular traffic and other moving objects, Developer/Applicant will provide appropriate guards or barriers as specified by the City.

3. The City accessibility for operation, maintenance, repair, and/or replacement must be assured by Developer/Applicant at all times.

D. Metering

Instrument-rated meters normally shall be installed next to or attached to padmounted transformers, but Applicant can request that the meter enclosure be placed on Applicant's building at a location to be approved by the City. Instrument transformers will be installed within the secondary compartment of the padmounted unit with the meter normally mounted on a separate support near the transformer. Should the Applicant request another location, a 3/4" PVC conduit shall be provided by the Applicant for the instrument transformer wiring. Residential and commercial self-contained meters are to be installed on outside of building as near the service entrance as possible. All other meters should also be installed on outside of Building.

II. EASEMENTS AND ACCESS RIGHTS

Developer or Applicant must grant adequate easements to the City for the installation, operation, and maintenance of all electrical facilities, including riser poles, cable runs for primaries, secondaries, and/or vaults. Easements must grant the City ingress and egress rights to its facilities at all times for operation, maintenance, repair, and replacement and must be duly recorded in the proper county clerk's office. In lieu of signed easements for subdivision developments, a recorded final plat showing dedicated utility strips, with certificate of specified necessary rights, will be acceptable. Width of primary and secondary easements shall be a minimum of twenty (20) feet and width of lighting easement shall be a minimum of ten (10) feet (may be split between adjacent properties). No structures, walls or obstacles are to be so located as to interfere with the City's ability to operate, repair, replace or maintain its facilities.

III. CONSTRUCTION PROCEDURES

For general subdivision developments, a final plat shall have been submitted to and approved by the Joint City County Planning Commission of Nelson County. This plat should show final street and lot lines and easements or utility strips with certificate of utilities' rights. At the site, all lot lines along the main trenches should be accurately staked, and grade must be within six inches of final before construction starts.

IV. STREET LIGHTING

Installation of a compatible lighting system, after all other underground facilities have been installed, roads paved, lawns seeded, and homes occupied, is usually a difficult and costly operation. Recognition of this problem initially, by preparing a preliminary lighting layout, will provide a basis for agreement between the Developer and the City as to location and type of lighting desired for the underground system layout and design. The Developer, with the agreement of the City may select the type of lighting standard to be utilized.

V. JOINT CONSTRUCTION WITH TELEPHONE COMPANY/CABLE TV COMPANY

When it is considered mutually advantageous for the telephone, cable TV, and electric cables to occupy the same trench, special consideration must be given to the close coordination of this underground construction for minimum installed costs. Normally, twelve (12) inches of horizontal or vertical separation is desired between telephone, cable TV, and electric cables; however, other variations of joint use may be worked out for the particular job by mutual agreement between the utilities provided there is no conflict with any pertinent code or regulatory commission rules and regulations. All utilities must agree to this type construction prior to installation.

VI. TEMPORARY OR CONSTRUCTION SERVICE

Temporary service can be made available for construction or other purposes at the established charge. Applicant (Builder/Customer) will provide the service support,

meter base and all other necessary electric equipment except the meter and service cable. The City will install the meter and service cable.

VII. MAPS AND RECORDS

Accurate records and maps must be maintained of all easements and facilities as finally installed. Details of construction must include the length, size, and type of conductor, type of insulation, manufacturer, and location of all cables. Location, size, type, and manufacturer of all transformers, location of all primary sectionalizing points, and secondary pedestals or junction points must be shown. Proximity and crossings of other cables, pipes, and obstructions should be noted.

VIII. MARKING CABLE LOCATIONS

Dig-ins are a serious problem in the operation of any underground system, and repairs are costly. Temporary flags and other appropriate markers should be used freely during the course of installation and area development.

IX. URD SAFETY CONSIDERATIONS

The URD type of installation is quite different from an overhead system. Generally, it will be worked by crews who are more experienced on overhead systems. Equipment is different and clearances are much closer on URD systems. Types of terminations, switching, and protective devices vary widely among manufacturers, and changes in designs are frequent. The worker stands, kneels or lies directly on the ground or grounded surface. There are many dangers on both URD and overhead, but the exposure on a URD system is usually greater. Some exposures to which the worker must always be alert are:

A. electric shock, especially from low voltage;

B. insect bites and stings;

C. snakes and varmints;

D. allergies, such as poison oak and ivy;

E. chemicals and gases in ditches and manholes;

F. burns and explosions in confined areas;

G. accidents from falls in open ditches, obstructions under foot, etc.;

H. loop feeds.

CITY OF BARDSTOWN

UNDERGROUND DISTRIBUTION

POLICIES AND REGULATIONS

INDEX

DEFINITIONS

GENERAL CONSIDERATIONS

I. RESIDENTIAL HOUSING DEVELOPMENTS

A. Subdivisions-Buildings With One Dwelling Unit Each

1. General policy

2. Exceptions

B. Mobile Home Developments

1. General policy

2. Exceptions

C. Other Residential Housing

1. Townhouse/condominium developments

2. Residential (Non-subdivision) applications

D. Temporary Or Construction Power Requirements

1. General policy

2. Charges

E. Applicant/Developer Responsibilities

1. Pre-construction period

2. Concerning construction

F. Underground Service From Overhead Transformers Or Secondary

1. General policy

2. Exceptions

II. OTHER UNDERGROUND SERVICE

A. Commercial And Industrial Installations

1. General policy

2. Exceptions

B. Replacement of Overhead Facilities With Underground

1. General policy

2. Limitations

III. TRANSFORMER CAPACITY LIMITS

IV. INFEASIBLE UNDERGROUND SERVICE

UNDERGROUND DISTRIBUTION

CONSTRUCTION PRACTICES AND PROCEDURES

I. LOCATION OF FACILITIES

A. Underground Residential Distribution (URD)

B. Individual Underground Extension

C. Transformers And Similar Equipment

D. Metering

II. EASEMENTS AND ACCESS RIGHTS

III. CONSTRUCTION PROCEDURES

IV. STREET LIGHTING

V. JOINT CONSTRUCTION

VI. TEMPORARY OR CONSTRUCTION SERVICE

VII. MAPS AND RECORDS

VIII. MARKING CABLE LOCATIONS

IX. URD SAFETY CONSIDERATIONS

DEFINITIONS

Applicant - The builder, customer, owner or other individual requesting the installation of underground service or requests service in a development with underground facilities

Builder - The person, partnership or corporation responsible for constructing any building or structure and requesting temporary or permanent underground service.

Building - A structure enclosed within exterior walls or fire walls, built, erected and framed of component structural parts.

City - The City of Bardstown, with its duly authorized agents of the Electric Department acting under the direction of the Mayor and City Council.

Customer - First Applicant for permanent service and meter installation at any location.

Developer - The person, partnership or corporation responsible for the development of a multiple-lot subdivision, as regulated by the Joint City County Planning Commission of Nelson County.

Distribution System - Electric service facilities consisting of primary and secondary conductors, conduits, transformers and necessary equipment for the furnishing of electric power at utilization voltage.

Service - Service cable along with necessary accessories and appurtenances with service length defined as being measured from the padmounted transformer (or secondary pedestal, where applicable) or base of riser pole (when fed from an overhead secondary facility) to the structure at the point where the meter is located (400 amp services or less).

Residential Subdivision - the tract of land which is divided into multiple lots, as regulated by the Joint City County Planning Commission of Nelson County, for the construction of new residential single-family homes.

Commercial Subdivision - the tract of land which is divided into multiple lots, as regulated by the Joint City County Planning Commission of Nelson County, for the construction of new commercial or light industrial buildings.

Townhouse/Condominium - A building of special construction which shares a fire wall with adjacent similar structures, all of which are enclosed within exterior walls, which building is normally located on a narrow lot, which building and/or lot may be owned and treated as a dwelling unit separate from similar adjacent such units and may require an individual, ungrouped meter installation.

UNDERGROUND DISTRIBUTION

POLICIES AND REGULATIONS

GENERAL CONSIDERATIONS

The City's general policy is that underground systems are optional and may be constructed upon the mutual agreement of the City and Developer/Applicant. The City will endeavor to provide service by the most direct, economical and feasible route and in the most economical and practical matter. Any deviation is at the City's discretion. The cost difference between underground and overhead is to be born by the Developer/Applicant. The fees specified herein are based upon average costs for the intended application. The Developer/Applicant may be required to reimburse the City for applications which are not normal. The sizing of all distribution facilities is at the sole discretion of the City.

In new residential subdivisions, the City will install, own, operate and maintain all underground primary and secondary electric systems on the source side of its point of delivery. Primary and secondary systems include all primary cables, transformers, secondary cables, pedestals, junctions, connectors and switchgear along with all conduits and transformer pads up to the point of delivery. The City will reasonably determine the locations of these systems. Appurtenances such as transformers, pedestal-mounted terminals, switching equipment and metering cabinets will be placed above ground. The point of delivery shall be the load side of the transformer or secondary junction that serves the Applicant's lot. The Applicant is required to furnish, install and maintain the appropriate service conduit(s) in a trench, according to size, depth and any other applicable specifications as reasonably determined by the City. The City will install, own, operate and maintain its service conductor(s) in this conduit system. The point of connection shall be the Applicant-installed meter base. The Applicant shall be responsible for all electric equipment past the point of connection. The City shall determine the location of its meters and will furnish, install and maintain them. The Applicant shall furnish and install the meter base(s). The Developer(s) shall provide, as part of the overall property development, a trench system to City specifications for the installation of the City's primary (and secondary as necessary) conduits to each property (lot) line and as part of its landscaping requirements will provide and install backfill to City specifications in this trench system. All fees and charges are as described herein.

In commercial and industrial developments, the City will install, own, operate and maintain all underground electric systems to the point of delivery as described herein. These systems include all primary cables, transformers, pedestals, connectors and switchgear (along with all conduits, in subdivision developments only) up to the point of delivery. Irregardless of the point of metering, the point of delivery shall be the load side (secondary terminals) of the transformer (or secondary junction, as applicable) except where otherwise provided for special primary metered contracts. The locations of the primary and secondary systems shall be reasonably determined by the City.

Appurtenances such as transformers, pedestal-mounted terminals, switching equipment and metering cabinets will be placed above ground. In the case of a commercial or industrial subdivision the Developer(s) shall provide, as part of the overall property development, a trench system to City specifications for the installation of the City's primary (and secondary as necessary) conduits to each property (lot) line and as part of its landscaping requirements will provide and install backfill to City specifications in this trench system. The City recognizes that individual locations requiring capacity in excess of 300 kVA, three phase, are normally more economically served by padmount transformer installations. The City encourages such individual locations with a 300 kVA or greater load requirement to coordinate the installation of a padmount transformer installation with the City. Applicant will furnish, install, own and maintain the necessary trench(s) complete with backfill, concrete transformer pad, all secondary conduit systems and except as otherwise provided herein, all secondary conductors from the point of delivery. The Applicant shall also provide a trench system complete with backfill to City specifications and install own and maintain the appropriate conduit(s) for the installation of the City's primary system(s) where the location of the transformer is not in the immediate vicinity of existing primary facilities (or lot line in subdivision applications) and/or is interior to the Applicant's property. The City will determine the location of its meters and will furnish, install and maintain them. Applicant shall will install any self-contained meter base(s) for services rated 400 amps or less. All City fees and charges are as described herein.

In new Residential (non-subdivision) applications, the City will install, own, operate and maintain all primary and secondary electric systems on the source side of its point of delivery. Primary and secondary systems include all primary cables, transformers, secondary cables, pedestals, junctions, connectors and switchgear (along with all conduits up to the point of delivery in the case of multiple lots only). The City shall reasonably determine the locations of these systems. Appurtenances such as transformers, pedestal-mounted terminals, switching equipment and metering cabinets will be placed above ground. The Applicant is required to furnish and install the appropriate service conduit(s) in a trench, according to size, depth and any other applicable specifications as reasonably determined by the City. The City will install, own, operate and maintain its service

conductor(s) in this conduit system. The point of connection shall be the Applicant-installed meter base (or wire trough, where applicable). The Applicant shall be responsible for all electric equipment past the point of connection. The Applicant shall perform all trenching and backfilling for the installation of the City's primary (and secondary, as necessary) systems in accordance with City specifications. The City shall determine the location of its meters and will furnish, install and maintain them. The Applicant will furnish and install the meter base(s). Applicant with multiple lots will provide, as part of the overall property development, a trench system to City specifications for the installation of City's primary (and secondary as necessary) conduits to each property (lot) line and as part of its landscaping requirements will provide and install backfill to City specifications in this trench system.

The City requires, without cost to or condemnation by the City, suitable land rights (easements, etc.) be granted to it obligating Applicants and successors to provide continuing access to its electric facilities for operation, maintenance and replacement purposes and to prevent encroachment on these rights and/or substantial change in grade or elevation.

The City is normally responsible for repairs and replacements of its facilities unless such repairs or replacements result from an act or negligence of Developer/Applicant, property owner or other party acting in their behalf, including, but not limited to, their contractor(s) or other utilities.

Three-phase primary mains or feeders required within a subdivision to supply other local distribution or to serve individual three-phase loads may be overhead. If underground mains or feeders are requested, the requesting party may be required to

reimburse the City for any additional cost incurred for the installation of these facilities underground (difference in overhead and underground).

Extension of the City's facilities from existing supply lines to the boundary of the subdivision normally will be overhead. Upon request, such extensions may be installed underground provided the requesting party reimburses the City for the difference in underground and overhead facilities.

The fees or charges indicated in these rules are based on the premise that Applicants and Developers will cooperate to the fullest extent with the City in an effort to keep the cost of construction and installation of underground electric facilities as reasonable as possible. The City will install its primary and secondary systems in any development according to the portion of the subdivision in which the developer has under active development (i.e., compliance with applicable rules, regulations and ordinances, lots available for sale, etc.). In all subdivisions where the Developer has chosen to construct an underground system, the protective covenants for lots in the development shall include a requirement for underground service and payment of all associated fees and charges incurred therein. Bonding requirements to ensure the proper completion by the Applicant or Developer of a subdivision shall be prescribed in the Subdivision Regulations of the Joint City County Planning Commission of Nelson County. Approval of bonds shall be made by the City legislative body.

Since many underground facilities for water, sewer, gas, electric, telephone, CATV, and street lighting may be required for the orderly construction of a new development, it is important that close coordination among the utility installers, developers and designers be

maintained during the course of construction. All electrical facilities shall be installed and constructed to comply with all applicable codes and regulations.

Nothing herein contained shall prevent the City and Developer/Applicant from mutually agreeing to alternate fees or charges and/or methods of construction in the interest of seeking better and more economical installations of underground electric facilities. These rules are subject to revision from time to time by the City Electric Department with approval by the City Council.

I. RESIDENTIAL HOUSING DEVELOPMENTS

I. RESIDENTIAL HOUSING DEVELOPMENTS

A. Subdivisions - Buildings with one dwelling unit each.

1. General Policy

a. The Developer shall provide, as a part of the overall property development, a trench system to City specifications for installation of the City's primary (and secondary, as necessary) conduit systems to each property (lot) line, and as part of its landscaping requirements shall provide and install backfill to City's

specifications in that trench system. Acceptable easements shall be provided for these systems.

b. The City will install its primary (and secondary, as necessary), conductors in the conduit system above. The City shall require an individual Applicant (Builder/Customer) to install the service conduit system complete with trench and backfill and to connect this conduit system to the point of delivery. Applicant (Builder/Customer) shall pay a base fee of $75.00 per service for share of padmount transformer cost plus $0.20 per foot of service cable to have the City install, own, operate, and maintain its service cable system in Applicant-installed conduit system. Applicant-installed conduit system shall remain the property and responsibility of Applicant (Builder/Customer).

2. Exceptions

Fees for the complete underground system owned by the City may be increased to cover added costs required by Developer/Applicant due to the following special conditions:

a. Unusually rough terrain;

b. Unusual layout of development and excessive distance between buildings;

c. Meter(s) at location(s) other than specified by the City;

d. Replacement of existing overhead facilities with underground;

e. Voltage requirements other than single-phase, 120/240 volts;

f. Townhouse/condominium developments;

g. Other developments requiring three-phase supply or primary voltage within buildings or vaults.

h. Fewer than 10 lots to be served in a given subdivision or lots that average larger than 0.75 acre.

i. Service entrance larger than 400 amps.

B. Mobile Home Developments - Underground Primary, Secondary, and Services

1. General Policy

a. Developer (mobile home park development) shall provide, as a part of the overall property development, a trench system to City specifications for installation of the City's primary (and secondary, as necessary) conduit systems to each property (lot) line. The Developer shall provide and install service conduits from each lot line to each meter pedestal described in (b) below. The City will install its underground primary (and secondary, as required) facilities in this conduit system. Developer shall, as part of the development's landscaping requirements, provide and install backfill to City specifications in that trench system. Acceptable easements shall also be provided for these systems.

Developer, if the owner of the lots, or Applicant, if in a mobile home subdivision, shall pay a base fee of $75.00 per service for share of padmount transformer cost plus $0.20 per foot of service cable to have the City install, own, operate, and maintain its service cable system in Developer/Applicant-installed service conduit system. Developer/Applicant-

installed service conduit system shall remain the property and responsibility of Developer/Applicant.

b. Developer/Applicant shall furnish and install for each mobile home, at a location mutually agreeable to the City and Developer, a combination meter service and disconnect device (meter pedestal), the design and installation of which shall be subject to approval by inspection by State certified inspector and the City, with the following features: (1) 200 amps main line current capacity; (2) a suitable socket for the City's meter mounted at a minimum height of 36"; (3) lugs for attaching the City's service cables; (4) provisions for one, two or three 50 amp plug-in receptacles with associated protective breaker(s) or fuse(s); (5) provisions for attachment of mobile homeowner's possible feeder assembly cable and for associated 100 amp, 150 amp or 200 amp main breaker; (6) provision for restriction of unauthorized access to the City's service cable lugs, meter, and meter connections through use of appropriate locks by the City; (7) locking arrangements for the City's use which are entirely separate from any locks or security measures required by Developer in connection with receptacles, breakers, feeder assembly cable terminations, etc. located on or within the device.

c. One or more meter service and disconnect devices shall be rigidly mounted on a support which is acceptable to the City and shall be located and positioned as follows: (1) not more than forty feet from the centerline of the City's easement for the primary and/or secondary systems from which said pedestal, or group of pedestals are served; (2) so as to facilitate access thereto by the City's meter reading and service personnel but not within four feet of the edge of any street, road or driveway or within one foot of any regularly used walkway; (3) so that the mobile home to be supplied by that device may be attached to it by a cable not more than 36.5 feet long. Meter

pedestal shall be solidly connected with minimum #6 Cu. to an 8 foot driven ground of either 5/8" copperweld rod or 3/4" galvanized pipe.

d. Installation by the City of underground electric distribution facilities as set forth in Section I.C.1.a. above is available only to Developers of approved mobile home parks that will provide for semipermanent and nontransient type housing. All mobile homes to be located in said parks shall conform with the latest revised National Electrical Code and particularly are defined in Article 550-2 of the 1990 N.E.C. as "A factory-assembled structure or structures equipped with the necessary service connections and made so as to be readily movable as a unit or units on its own running gear and designed to be used as a dwelling unit(s) without a permanent foundation". The average centerline-to-centerline spacing of the housing units shall not exceed 50 feet. Any other type of a load (residential, commercial, etc.) within the boundaries of a mobile home park that is served with underground electric distribution facilities must be considered separate and distinct from this section and only under other sections of the City's Underground Electric Distribution Extension Policies, as applicable.

2. <u>Exceptions</u>

Fees for the underground system owned by the City may be increased to cover added costs required by the Developer due to the following special conditions:

a. fewer than 10 lots to be served in a given development;

b. average centerline-to-centerline spacing of mobile homes in excess of 50 feet;

c. distance from centerline of the City's normal easement to meter service and disconnect device in excess of 40 feet;

d. request for additional service of a different type and/or nature (residential, recreational, commercial, etc.) within the confines of the mobile home park;

e. unusually rough terrain;

f. irregular layout of lots;

g. service entrance larger than 200 amps;

h. replacement of existing overhead facilities with underground;

i. voltage requirement other than single-phase, 120/240 volts.

C. Other Residential Housing

1. Townhouse/Condominium Developments

a. The Developer (or Owner, as hereunder applicable herein) shall provide, as a part of the overall property development a trench system to City specifications for the installation of the City's primary (and secondary, as necessary) conduit systems to the point of delivery, as well as, the service conduits from the City's point of delivery to the service entrance(s). The Developer will, as part of its landscaping requirements, provide and install backfill to City specifications in that trench system. Acceptable easements shall be provided for these systems.

b. The City will install its primary (and secondary, as necessary), conductors in the conduit system above. The City shall require Developer to install the service conduit system complete with trench and backfill and to connect this conduit system to the point of delivery. Developer shall pay a base fee of $200.00 per transformer required plus $0.20 per foot of service cable to have the City install, own, operate, and maintain its service cable system in

Developer-installed service conduit system. Developer-installed conduit system shall remain the property and responsibility of Developer.

c. In the case of two or more meters per building, the City will, as outlined herein, extend service to individual meter bases or to a connection point in a junction box or wireway trough provided by Developer on the source side of the meters at a location approved by the City:

1. Individual meter bases:

Fees and requirements are as outlined in b. above for each dwelling unit.

2. Multiple-meter (gang) meter bases:

Developer shall install the service conduit system from the junction box or wireway trough, complete with trench and backfill and to connect the conduit system to the City's point of connection. Developer shall pay a base fee of $200.00 per transformer required plus $0.40 per foot of service cable to have the City install, own, operate, and maintain its service cable system in Developer-installed conduit system. Developer-installed conduit system shall remain the property and responsibility of Developer.

d. Fees for the complete underground system owned by the City may be increased to cover added costs required by Developer/Applicant due to the following special conditions:

a. Unusually rough terrain;

b. Unusual layout of development and excessive distance between buildings;

c. Meter(s) at location(s) other than specified by the City;

d. Replacement of existing overhead facilities with underground;

e. Voltage requirements other than single-phase, 120/240 volts;

f. Other developments requiring three-phase supply or primary voltage within buildings or vaults.

g. Service entrance(s) with more than 400 amps connected capacity.

2. Residential (NON-Subdivision) Applications

a. Applicant (Builder/Customer or successors) with single lot or property shall provide and maintain trench along with backfill for the installation of the City's underground primary system in accordance with City specifications. The City will install, own, and maintain the primary cable and transformer(s). The City shall require Applicant (Builder/Customer) to install the service conduit system complete with trench and backfill to connect this conduit system to the City's point of delivery. The Applicant (Builder/Customer) shall pay a base fee of $200.00 per transformer required plus $0.20 per foot of service cable to have the City install, own, operate, and maintain its service cable system in Applicant-installed conduit system. Applicant-installed service conduit system shall remain the property and responsibility of Applicant (Builder/Customer). Suitable provision for the City's meter shall be made by Applicant in accordance with the City's general rules and regulations. Acceptable easements shall also be provided for these systems.

b. Fees for the complete underground system owned by the City may be increased to cover added costs required by Applicant due to the following special conditions:

1. Unusually rough terrain;

2. Unusual layout of development and excessive distance between buildings;

3. Meter(s) at location(s) other than specified by the City;

4. Replacement of existing overhead facilities with underground;

5. Voltage requirements other than single-phase, 120/240 volts;

6. Townhouse/condominium developments;

7. Locations requiring three-phase supply or primary voltage within buildings or vaults.

8. Service entrance larger than 400 amps.

D. Temporary or Construction Power Requirements

1. General Policy

a. Applicant will furnish and install all material including support (stub), meter base and service attachment, switch-fuse assembly, grounding and all other necessary equipment other than meter and service cable.

b. The City will furnish meter and will install a service cable from the Applicant's equipment to the transformer.

2. Charges

The City will make a charge to Applicant for construction service which includes the connecting and disconnecting of Applicant's cables to and from the padmount transformer as set out in the latest ordinance revision. Each time the City is called out by Applicant to make either a connect or disconnect but

is unable to do so due to lack of readiness by Applicant, a charge may be made in accordance with approved City practice.

E. Developer/Applicant Responsibilities

1. Pre-Construction Period - When Developer/Applicant has complied with the following requirements and given the City not less than 4 months written notice prior to the anticipated date of completion (i.e., ready for occupancy) of the first building in the development or on Applicant's property for non-subdivision customers, the City normally will have its facilities installed 30 days prior to the estimated completion date (subject to weather, ground conditions, availability of material and barring extraordinary or emergency circumstances beyond the control of the City).

a. Developer/Applicant shall furnish the City a plat of the development or survey print of the property showing streets and finalized lot lines for application of the City's easement requirements.

b. Developer/Applicant shall record in the county court clerk's office the final plat of the development. The plat must show all easements and include a certificate thereon stipulating restrictions and ingress and egress rights to the City for access to its facilities at all times for maintenance and repairs. Any changes in the plat subsequent to the City's approval will be acknowledged to the City in writing, and approval of these changes must be secured from the City before recording the plat. The City may, at its option, require

execution of its standard easement form in lieu of recorded plat on which easements are dedicated.

c. Developer/Applicant may be required to sign a letter of agreement or contract stating terms and conditions, including identification as to ownership and location of the development, number of lots, deed restrictions as to proper usage, arrangements for property development trenching and landscaping backfill, and the anticipated date of completion.

d. Developer/Applicant shall pay the total service fees prior to the City starting service work.

2. Concerning Construction - Developer/Applicant will have the following responsibilities:

a. Before the City's construction can begin, Developer/Applicant may be required to complete installation of sanitary and storm sewers in the construction area, make the area in which the underground distribution facilities are to be located accessible to the City's equipment, remove all obstructions from such area and stake to show property lines and final grade.

b. Developer/Applicant must establish to within six (6) inches the final grade prior to construction of the conduit and cable routes. At padmounted equipment locations, final grade must be established before pads are set.

c. Developer/Applicant's property development easement trenching and landscaping backfill work must be closely coordinated with the City's schedule to install conduit, etc. for the mutual advantage and benefit of both parties, and must be done in accordance with City specifications with final acceptance by City Engineer.

F. Underground Service from Overhead Transformer or Secondary

1. General Policy

a. In the case of a new service connection or the upgrading of an existing inadequate service due to enlargement of Applicant's (Builder/Customer) service entrance, underground secondary service can be provided from overhead facilities where practical. The City shall require Applicant (Builder/Customer) to install the service conduit system complete including a rigid metal elbow at bottom of riser pole along with trench and backfill. The City will connect Applicant's conduit system to the City's riser pole conduit facilities. Applicant (Builder/Customer) with 200 amps or less of service capacity shall pay a fee of $20.00 plus $0.20 per foot of service cable to have the City install, own, operate, and maintain its service cable system in Applicant-installed conduit system. The fee for service capacities larger than

200 amps and up to and including 400 amps is $20.00 plus $0.40 per foot of service cable. Applicant (Builder/Customer) shall provide, install, own and maintain all service conductors for services in excess of 400 amps. Applicant-installed service conduit system shall remain the property and responsibility of Applicant (Builder/Customer). The City will provide, install, own, operate, and maintain complete riser pole conduit.

b. In the case of more than one meter per building, the City will extend service to a delivery point in a ganged meter base, junction box or wireway trough provided by Applicant (Builder/Customer) on the source side of the meters at a location approved by the City. The City shall require Applicant (Builder/Customer) to install the service conduit system complete, with trench and backfill along with a rigid metal elbow at the riser pole. The City will connect Applicant's conduit system to the City's riser pole conduit facilities. Applicant (Builder/Customer) with total service capacity of up to and including 400 amps shall pay a base fee of $40.00 plus $0.20 per foot of service cable to have the City install, own, operate, and maintain its Service cable system in Applicant-installed conduit system. Applicant (Builder/Customer) shall provide, install, own and maintain all service conductors for service capacities in excess of 400 amps. Applicant-installed service conduit system shall remain the property and responsibility of Applicant (Builder/Customer). The City will provide, install, own, operate, and maintain complete riser pole conduit.

c. When an existing overhead service of adequate capacity and maximum 4/O AL size is replaced with underground at Applicant's (Builder/Customer) request, a removal cost of $35.00 in addition to the appropriate service

installation fee noted above should be paid when the replacement Service is requested.

d. Unless otherwise approved by the City, all individual services of 400 amps or less shall be metered with self-contained meters. The Applicant (Builder/Customer) shall provide install, own and maintain all self-contained or gang meter bases and shall be responsible for installing and maintaining all electric equipment on the load side of the meter base or wireway trough, in gang meter applications. Normally, no self contained metering may be installed at the source end of such underground service.

e. All secondary metered services with capacities greater than 400 amps shall be metered with instrument transformers. Unless specifically requested by the Applicant (Builder/Customer) and approved by the City, the metering equipment shall be installed at the point of delivery which, for underground services from overhead facilities, are the transformer secondary terminals or overhead secondary conductors. The Applicant (Builder/Customer), for secondary delivery service capacities in excess of 400 amps, shall be responsible for installing and maintaining all electric facilities past this point of delivery.

2. <u>Exceptions</u>

Fees for the complete underground service owned by the City may be increased to cover added costs required by the Applicant due to the following special conditions:

a. voltage requirements other than single-phase, 120/240 volts;

b. service length more than 150 feet;

c. size of conductors beyond practical limits;

d. other unusual circumstances.

II. Other Underground Service

A. Commercial and Industrial Installations

1. General Policy

It is the City's policy to provide service in the most economical manner. Each Applicant requesting commercial or industrial underground service will be required to pay all applicable fees and provide facilities as set out below.

a. In commercial or industrial developments, the developer shall provide, as a part of the overall development, a trench system complete with backfill to City specifications for the installation of the City's underground primary conduit system(s) to each property (lot) line. Acceptable easements shall be provided for these systems. The City will install, own operate and maintain its primary facilities in this conduit system.

b. For secondary delivery installations, Applicant (Builder/Customer/Owner as hereunder applicable herein) shall furnish, install, own and maintain, (1) all secondary conduits, (2) the concrete pad for padmounted transformer and (3) the primary conduit(s) from the transformer to either the lot line in a commercial/industrial development or the City's designated point of delivery including a rigid metal elbow, if applicable, at the bottom of the riser pole. Applicant shall provide the trenching and backfilling for all required conduit systems in accordance with City specifications. The City will install, own, operate and maintain complete riser pole conduits, its primary conductors in the Applicant installed primary conduit system(s) and the padmount transformer. The remaining fees and requirements are outlined below.

1. For single phase padmount locations, the Applicant shall pay a base fee of $200.00 per transformer required to cover the difference in cost of the

padmount transformer. The Applicant shall also pay a for of $0.20 per foot of service cable for service capacities up to and including 200 amps to have the City install, own, operate and maintain its service cable in the Applicant-installed conduit system(s). For services with capacities greater than 200 amps and up to and including 400 amps, this fee shall be $0.40 per foot of service cable. Where the total capacity of a location exceeds 400 amps, whether in single or multiple metered installations, the Applicant shall provide, install, own and maintain all secondary conductors; the City will provide and install the secondary connectors and attach them to the transformer secondary terminals.

2. For three phase padmount installations, the Applicant shall pay a fee per transformer for the difference in cost of the padmount transformer plus, for locations with capacities of 400 amps or less, a fee per foot of service cable to have the City install, own, operate and maintain its service cable in the Applicant-installed secondary conduit system. These fees are outlined below.

	Transformer	
Service Capacity (Amps)	Install Fee	Pulling Fee
Capacity ≤ 200	$500.00	$0.20/ft
200 < Capacity ≤ 400	$500.00	$0.40/ft
400 < Capacity ≤ 800	$400.00	N/A - Appl. Installed

800 < Capacity ≤ 1200	$200.00	N/A - Appl. Installed
Capacity ≥ 1200	No charge	N/A - Appl. Installed

3. Unless otherwise approved by the City, all individual services of 400 amps or less shall be metered with self-contained meters. The Applicant shall provide install, own and maintain all self-contained or gang meter bases and shall be responsible for installing and maintaining all electric equipment on the load side of the meter base or wireway trough, in gang meter applications.

4. All secondary metered services with capacities greater than 400 amps shall be metered with instrument transformers. Unless specifically requested by the Applicant and approved by the City, the metering equipment shall be installed at the point of delivery which, for padmount transformer installations, are the transformer secondary terminals. The Applicant can request that the meter be installed either at the transformer or at the building being served (or other approved location) if Applicant provides a 3/4" PVC conduit from the transformer pad to the approved location for the meter enclosure. The Applicant, for secondary delivery service capacities in excess of 400 amps, shall be responsible for installing and maintaining all electric facilities past this point of delivery.

5. If Applicant wishes to have the City install an underground service from overhead secondary or transformer, Applicant comply with the requirements set forth in Section F. above

c. For load requirements greater than 300 kVA, three phase, the City will provide primary voltage delivery provided Applicant furnishes, installs, owns and maintains, (1) all secondary conduits and conductors, (2) the concrete pad for padmounted transformer and (3) the primary conduit(s) from the transformer to either, (a) the lot line in a commercial/industrial development or, (b) the City's designated point of delivery including a rigid metal elbow, if applicable, at the bottom of the riser pole. Applicant shall provide the trenching and backfilling for all required conduit systems in accordance with City specifications. The City will install, own, operate and maintain complete riser pole conduits, primary metering equipment, its primary conductors in the Applicant installed primary conduit system(s) and the padmount transformer. No transformer fee is required for load requirements greater than 300 kVA.

1. All City-supplied primary underground cables serving or industrial loads shall be in appropriate conduit systems supplied by the Applicant. All such conduit shall be owned, repaired or replaced by Applicant or subsequent property owner with exception of riser pole conduit.

2. Where Applicant elects to own the primary underground cables and facilities, the City will determine the point of delivery and division of ownership, at which point the primary meter shall be installed.

2. Exceptions

a. If requested and mutually agreeable, the City may perform trenching and backfilling, furnish conduits, and transformer pads for Applicant. The City shall be reimbursed by Applicant for all costs incurred and Applicant or subsequent property owner will own, repair, and replace as may be required, all such conduits or pads.

b. Each replacement of existing overhead facilities with underground is also a special case requiring individual consideration. See Section II.B. for determination of reimbursement.

B. Replacement of Overhead Facilities with Underground

1. General Policy

Where requests are received by the City to replace segments of existing overhead facilities with underground, and are agreeable to all affected customers and the City, Developer of Applicant making such request will reimburse the City

for its cost of construction with the amount of said reimbursement to be determined as follows:

a. the total cost of work to be approved (including new services);

b. plus the installed cost of transformers and pads;

c. plus labor cost of removal including services being removed;

d. minus total salvage including any services removed which will be salvaged or junked in same manner as other conductor;

f. minus betterments, if any

This total is the net relocation cost to be paid in full by Applicant prior to beginning work. Work contributions in lieu of cash are acceptable for items such as ditching, backfilling, conduit, transformer pads, etc., at the value used in the estimate.

2. Limitations

Individual, single-phase overhead residential services up to a maximum size of 2/O AL should be treated according to Section I.F.1.c. of this Policy.

III. TRANSFORMER CAPACITY LIMITS

Standard capacity of padmounted transformers shall be limited to 167 KVA for single-phase and 1000 KVA for three-phase installations requiring 208Y/120 or 240D/120 volt secondary and 3000 KVA for three-phase installations requiring 480Y/277 volt secondary.

IV. INFEASIBLE UNDERGROUND SERVICE

The City is not obligated to supply underground service when, in the judgment of the City, such service would be infeasible, impractical or contrary to good operating or engineering practice.

UNDERGROUND DISTRIBUTION

CONSTRUCTION PRACTICES AND PROCEDURES

I. LOCATION OF FACILITIES

A. Underground Residential Distribution (URD)

It is the City's general construction practice to locate its underground electric Distribution System, including padmount transformers, within a private easement or dedicated utility strip along the front, rear or side lot lines as dictated by the most economical means of construction to provide both reliable electric service and future accessibility to underground equipment. Where economically and practically feasible, a loop feed will be established. Care should be taken to not place transformers directly on or facing lot lines which could eventually hamper operation when fences are built. The City reserves the right to require an overhead feeder route through each URD area as system design dictates. This feeder may be placed underground, at the City's discretion, if requested and paid for by Customer.

B. Individual Underground Extension

Underground cables from an existing pole line, and associated above ground equipment, such as padmount transformers, new riser poles, necessary pole line extensions, etc., will be routed and located in the most direct, economical, and practical manner.

C. Transformers and Similar Equipment

1. Installation of equipment will be in accordance with all applicable codes and City specifications. If padmounted oil-filled equipment is located adjacent to a Building, only solid, nonflammable walls without windows and doorways are allowed in the vicinity of the equipment. Doors of padmounted equipment must not be faced toward existing or anticipated walls or other permanent obstructions. Sufficient working area should be provided and maintained as follows: ten (10) foot minimum clearance in front of equipment doors and six (6) foot minimum clearance on the sides. The back of padmounted equipment shall not have less than the following minimum clearances to a Building wall(s) as required by the State Fire Marshall: three (3) foot for transformers 75 KVA and less; fifteen (15) foot for transformers 76 through 500 KVA; and twenty-five (25) foot for transformers 501 KVA and larger. It is the responsibility of the Developer/Applicant to determine and verify applicable clearance requirements according to the State Fire Marshall's latest rules regarding such clearances. In order to limit transmission of noise and vibration, concrete equipment pads should not be poured as part of the Building foundation or attached to it. In subdivision and residential areas, cables, transformers, and other devices should not be installed closer than one foot to a property line.

2. Padmounted equipment shall be located and positioned so as to afford maximum ventilation. In order to protect equipment from vehicular traffic and other moving objects, Developer/Applicant will provide appropriate guards or barriers as specified by the City.

3. The City accessibility for operation, maintenance, repair, and/or replacement must be assured by Developer/Applicant at all times.

D. Metering

Instrument-rated meters normally shall be installed next to or attached to padmounted transformers, but Applicant can request that the meter enclosure be placed on Applicant's building at a location to be approved by the City. Instrument transformers will be installed within the secondary compartment of the padmounted unit with the meter normally mounted on a separate support near the transformer. Should the Applicant request another location, a 3/4" PVC conduit shall be provided by the Applicant for the instrument transformer wiring. Residential and commercial self-contained meters are to be installed on outside of building as near the service entrance as possible. All other meters should also be installed on outside of Building.

II. EASEMENTS AND ACCESS RIGHTS

Developer or Applicant must grant adequate easements to the City for the installation, operation, and maintenance of all electrical facilities, including riser poles, cable runs for primaries, secondaries, and/or vaults. Easements must grant the City ingress and egress rights to its facilities at all times for operation, maintenance, repair, and replacement and must be duly recorded in the proper county clerk's office. In lieu of signed easements for subdivision developments, a recorded final plat showing dedicated utility strips, with certificate of specified necessary rights, will be acceptable. Width of primary and secondary easements shall be a minimum of twenty (20) feet and width of lighting easement shall be a minimum of ten (10) feet (may be split between adjacent properties). No structures, walls or obstacles are to be so located as to interfere with the City's ability to operate, repair, replace or maintain its facilities.

III. CONSTRUCTION PROCEDURES

For general subdivision developments, a final plat shall have been submitted to and approved by the Joint City County Planning Commission of Nelson County. This plat should show final street and lot lines and easements or utility strips with certificate of utilities' rights. At the site, all lot lines along the main trenches should be accurately staked, and grade must be within six inches of final before construction starts.

IV. STREET LIGHTING

Installation of a compatible lighting system, after all other underground facilities have been installed, roads paved, lawns seeded, and homes occupied, is usually a difficult and costly operation. Recognition of this problem initially, by preparing a preliminary lighting layout, will provide a basis for agreement between the Developer and the City as to location and type of lighting desired for the underground system layout and design. The Developer, with the agreement of the City may select the type of lighting standard to be utilized.

V. JOINT CONSTRUCTION WITH TELEPHONE COMPANY/CABLE TV COMPANY

When it is considered mutually advantageous for the telephone, cable TV, and electric cables to occupy the same trench, special consideration must be given to the close coordination of this underground construction for minimum installed costs. Normally, twelve (12) inches of horizontal or vertical separation is desired between telephone, cable TV, and electric cables; however, other variations of joint use may be worked out for the particular job by mutual agreement between the utilities provided there is no conflict with any pertinent code or regulatory commission rules and regulations. All utilities must agree to this type construction prior to installation.

VI. TEMPORARY OR CONSTRUCTION SERVICE

Temporary service can be made available for construction or other purposes at the established charge. Applicant (Builder/Customer) will provide the service support,

meter base and all other necessary electric equipment except the meter and service cable. The City will install the meter and service cable.

VII. MAPS AND RECORDS

Accurate records and maps must be maintained of all easements and facilities as finally installed. Details of construction must include the length, size, and type of conductor, type of insulation, manufacturer, and location of all cables. Location, size, type, and manufacturer of all transformers, location of all primary sectionalizing points, and secondary pedestals or junction points must be shown. Proximity and crossings of other cables, pipes, and obstructions should be noted.

VIII. MARKING CABLE LOCATIONS

Dig-ins are a serious problem in the operation of any underground system, and repairs are costly. Temporary flags and other appropriate markers should be used freely during the course of installation and area development.

IX. URD SAFETY CONSIDERATIONS

The URD type of installation is quite different from an overhead system. Generally, it will be worked by crews who are more experienced on overhead systems. Equipment is different and clearances are much closer on URD systems. Types of terminations, switching, and protective devices vary widely among manufacturers, and changes in designs are frequent. The worker stands, kneels or lies directly on the ground or grounded surface. There are many dangers on both URD and overhead, but the exposure on a URD system is usually greater. Some exposures to which the worker must always be alert are:

A. electric shock, especially from low voltage;

B. insect bites and stings;

C. snakes and varmints;

D. allergies, such as poison oak and ivy;

E. chemicals and gases in ditches and manholes;

F. burns and explosions in confined areas;

G. accidents from falls in open ditches, obstructions under foot, etc.;

H. loop feeds.