



**CONSOLIDATED EDISON CO. OF NEW YORK, INC.  
4 IRVING PLACE  
NEW YORK, NY 10003**

**DISTRIBUTION ENGINEERING DEPARTMENT  
SYSTEM DESIGN SECTION**

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**A.C. SERVICES**

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CONSTRUCTION FIELD MANUALS No. 16 SECT. 3, 20 SECT. 3 and 22 SECT. 5**

<b>TARGET AUDIENCE</b>	<b>DISTRIBUTION ENGINEERING REGIONAL ENGINEERING</b>
<b>NESC REFERENCE</b>	<b>NONE</b>

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## 1.0 PURPOSE

This Specification covers the Company policies for supplying new A.C. services, replacement of the existing A.C. services after failure and reinforcement of the existing A.C. services for customer load increases in New York City and Westchester. This Specification applies to both underground and overhead services and consists of the following parts:

- Part I - Type of Service
- Part II - New Services
- Part III - Existing Services

## 2.0 APPLICATION

- 2.1 All Regions

## 3.0 GENERAL INFORMATION

This Specification discusses the following:

- 3.1 Types of A.C. services available to the customer.
- 3.2 Conditions and exceptions governing new underground, overhead, loop or rear yard services.
- 3.3 New Services: Company and customer responsibilities for new underground (Conduit systems and URD) and overhead services.
- 3.4 Existing services: Company and customer responsibilities for replacement of underground conduit and cable services.
  - 3.4.1 After failure
  - 3.4.2 For reinforcement
- 3.5 Existing services: Company and customer responsibilities for replacement of existing underground and overhead loop services.
  - 3.5.1 After failure
  - 3.5.2 For reinforcement
- 3.6 Existing services: Company and customer responsibilities for replacing direct buried cable services (DBC) after failure.

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**3.7** Existing services: Company and customer responsibilities for replacement of existing overhead services.

**3.7.1** After failure

**3.7.2** For reinforcement

**3.8** Replacement of existing overhead services with underground services.

#### **4.0** DEFINITIONS

The different terms used in this specification have been defined as follows:

**4.1** Company: Consolidated Edison Company of New York, Inc.

**4.2** Contractor: Licensed electrician and authorized representative of the customer.

**4.3** Customer: A present customer or an applicant for the Company's electric service.

**4.4** Service Connection: A service connection is one service lateral and its associated service entrance.

**4.5** Building: A structure which stands alone or which is cut off from adjoining structures by fire walls with a 2 hr. rating with all openings therein protected by approved fire doors and is filed as a single structure with the authorities having jurisdiction.

**4.6** Service Drop: The Company's overhead service conductors between a Company pole and the first point of an attachment to the building or intermediate support.

**4.7** Service Lateral: A system of Company-owned conductors or cables used for delivering electricity from the Company's distribution system to the wiring system of a building or premises.

**4.8** Point of Service Termination: A point where the Company's service lateral terminates and the customer's wiring begins.

**4.9** Service Entrance Cable: Section of service cable extending from the Point of Service Termination to the terminals of the customer's service equipment.

**4.10** Service Equipment: Equipment, located near the cable entrance to a building, which receives the service entrance cable and contains a circuit breaker, or a switch and fuses and accessories.

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- 4.11 Areaway: A space below grade, adjacent to a building, enclosed by walls but open to the outside air.
- 4.12 Residential Subdivision: A tract of land divided into five or more lots for the construction of five or more new residential buildings, or the land on which multiple occupancy buildings are to be constructed.
- 4.13 Loop Service: A group service arrangement with a single service lateral (main service) to one house, from where branch wiring extends to a string of adjacent houses. In this specification such a service is called loop service for underground system and bus service for overhead system.
- 4.14 Rear Yard Services: Services supplied from overhead secondary mains supported by poles installed at the rear yard of customer's building(s).
- 4.15 Multiple Occupancy Building: The term "multiple occupancy building" shall mean a structure, including row houses, enclosed within exterior walls or fire walls, built, erected and framed of component structural parts, and designed to contain four or more individual dwelling units for permanent residential occupancy.
- 4.16 Distribution Line: The secondary line installed on the street or public right-of-ways.

## **PART I - TYPES OF SERVICES**

### **5.0 TYPES OF SERVICES**

Services shall be designated "standard" or "non-standard" in accordance with the following terms, specified in the Electric Rate Schedule:

- 5.1 Standard A.C. Services - The Standard A.C. services are as follows:
  - 5.1.1 Three-wire, 120/208 volts (two conductors and a neutral of the three-phase four-wire system).
  - 5.1.2 Single-phase, two-wire, 120 volts (supplied from the three-phase four-wire system) as described under Paragraph 6.0 - Special Cases.
  - 5.1.3 Three-phase, four-wire 120/208 volts.
- 5.2 Non-Standard A.C. Services - The Non-Standard A.C. services are:

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- 5.2.1 Single-phase, three-wire, 120/240 volts.
  - 5.2.2 Single-phase, two-wire, 120 volts, supplied from a single-phase 120/240 volts transformer, as restricted under Paragraph 6.0 Special Cases.
  - 5.2.3 Combination of single-phase, three-wire, 120/240 volts and three-phase, three-wire, 240 volts.
  - 5.2.4 Three-phase, four-wire, 265/460 volts and high tension service. See under Paragraph 6.0 Special Cases.
- 5.3 Choice of A.C. Services - Standard A.C. service shall be designated where available from existing street facilities. Where the standard system has not yet been established, a non-standard A.C. service may be designated.

## 6.0 **SPECIAL CASES**

The following are categorized as Special Cases as per Rate Schedule.

- 6.1 A new two-wire service may only be given to small commercial establishments having no more than two branch circuits, each with a maximum capacity of 20 amperes per branch.
- 6.2 The following cases, specified in the Electric Rate Schedule require individual case study:
  - a. Installation of 265/460 volts.
  - b. High Tension Services.
  - c. Interior Distribution Installation (Transformer and associated equipment installed on customer property not contiguous to property line)
  - d. Excess Distribution Facilities (E.D.F.)
- 6.3 Existing two-phase 230 or 240 volts service shall not be expanded beyond present service capability (including secondary mains, distribution transformers or phase-changing transformers).
- 6.4 Existing three-phase 240 volts service of the delta or open-delta type shall not be expanded beyond present service capability where standard service can be installed economically.

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## **PART II - NEW SERVICES**

### **7.0 REQUIREMENTS**

All new services shall be installed in accordance with the latest revision of:

- 7.1 Company's Electric Rate Schedule.
- 7.2 Requirements for Electric Service Installations (Blue Book).
- 7.3 Appendix C - Point of Service Termination Matrix.
- 7.4 Appendix D - Electric 100 foot Rule.

### **8.0 CONDITIONS FOR UNDERGROUND SERVICES**

New services for residential or commercial customers shall be constructed underground from street facilities as detailed in Appendix A or in accordance with Paragraph 14.0.

- 8.1 Underground Service to 1, 2, or 3 Family Homes and Multiple Occupancy Residential Building (Non-Subdivision) - The Company will install up to 100 feet of distribution line and/or service lateral for a residential customer in 1, 2 or 3 family homes when underground service is designated, and up to 100 feet per dwelling unit in multiple occupancy buildings. In 1, 2, or 3 family buildings or premises, the maintenance of the service conduit will be up to the external wall of the building and the cable maintenance will be to the point of service termination. In multiple occupancy buildings (4 or more units in one building), the maintenance of the conduit and cable will be up to the property line from the street. In the case of a multiple occupancy residential buildings, the service cable shall only be maintained on the customer's property, if it is installed in one continuous pull from the Company's distribution system to the point of service termination as per Paragraphs 13.1 and 13.2.
- 8.2 Underground Distribution Lines and Service Laterals within Subdivisions (See Appendix C)
  - 8.2.1 If the distribution line requirement per building, within the subdivision, is no more than 200 trench feet per dwelling unit, the underground distribution lines shall be installed at the expense of the Company. If the distribution line exceeds 200 feet per dwelling unit, then overhead line shall be installed.

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**8.2.2** If the length of distribution lines per dwelling unit is less than 100 feet, the Company shall install a service lateral of sufficient length to provide a combined amount of up to 100 feet of distribution line and service lateral. (Example: 50 feet of distribution line and 50 feet of service lateral per dwelling unit). This includes any portion of the 100 feet beyond the property line.

**8.3** In all cases, both Subdivision and Non-Subdivision, the service equipment beyond the point of service termination and its installation shall remain the responsibility of the customer, including foundation sleeve, service entrance conduit/sweep, seals, splice box, and/or attachments typically found immediately before the point of service termination.

**8.4** The customer shall be responsible to pay for the installation of the service lateral, in excess of the combined 100 feet allowance. However, the Company shall maintain the entire service lateral for 1, 2 or 3 family homes.

**9.0 CONDITIONS FOR OVERHEAD SERVICES**

For the cases listed in Appendix B (Subdivisions and Non-Subdivisions), overhead services may be constructed where there are no existing underground facilities. Reporting procedures shall be in accordance with Appendix B.

**10.0 ONE SERVICE PER BUILDING OR PREMISES**

Generally, new electric service for an individual building or premises or additional load for an existing building or premises, shall be supplied through one service lateral. Exception is permitted provided the additional service is required for the Company purposes (inability or economy of the Company to supply the entire load at one location) or the customer agrees to pay for an additional service and the associated maintenance e.g. excess distribution facilities.

NOTE: To avoid misunderstanding, the customer shall consult the Company before starting any work. Since there are many factors involved, each case should be studied individually.

**11.0 REAR YARD SYSTEMS**

No new services shall be supplied from rear yard systems unless such supply is clearly superior to any alternative.

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## 12.0 LOOP SERVICES

No new internal (within building) loop services shall be constructed. An external building to building loop may be installed on the underground services where it is cost effective to do so. (see EO-16833-B).

## 13.0 UNDERGROUND CONDUIT AND CABLE SYSTEMS

A property line splice box, if required, shall be installed as per Specifications EO-6210-B and EO-7836-C.

**NOTE:** Generally, a property line splice box shall not be required for residential customers in 1, 2, and 3 family homes. In multiple occupancy (Refer to Paragraph 4.14 for definition of multiple occupancy) residential buildings a property line splice box shall normally be required, unless it meets exceptions in Paragraphs 13.1 and 13.2. For more information on number of dwelling units, refer to Drawing EO-7836-C and the latest revision of "Requirements for Electric Service Installations".

- 13.1** Property Line Splice Box (Distance Less than Five Feet) - If the distance from the property line to the point of service entrance to the building is five feet or less or is less than the overall length of the box plus two feet, a property line splice box shall not be required. In this case, the customer shall install the conduit from the building to one foot beyond the property line for the Company to pick up. The service cable in this case shall be installed in one continuous pull in the conduit from the street to the customer's end box or the meter pan. The service shall terminate in the customer's service end box or the meter pan installed on the building wall by the customer or in the suitable sub-sidewalk space as per Company Specifications EO-6208-C, EO-6209-C, EO-6211-C, EO-6212-C, EO-6214-C, EO-6215-C and EO-16833-B or to the meter pan as the case may be.
- 13.2** Property Line Splice Box (Distance More than Five Feet) - If the distance from the property line to the point of service entrance to the building is more than five feet or more than the length of the box plus two feet and if in the Company's judgment, the cost to the Company of extending its service cables into the building is not materially more than the cost of terminating its service conduit and cables at the property line and if the service cable can be installed in one continuous pull from the street, the Company may extend its service cables into the building. In this case, the customer will install the conduit from the building to one foot beyond the property line for the Company to pick up. If the service cable cannot be installed in one continuous pull from the street, then a property line splice box shall be required. (Refer to Electric Rate Schedule General Information, Section III 5C.)

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a. Company Responsibility (Service without P/L splice box)

1. The Company shall furnish, install and maintain the service conduit in the public right-of-way up to the property line of the customer.
2. The Company shall furnish, install and maintain the service cable from the street to the customer's service end box or meter pan, as the case may be.
3. For all new services the Company shall make the final splice in the customer's service end box.
4. The Company shall maintain the entire electric service lateral to 1, 2, and 3 family homes including the duct to the exterior building line.
5. In instances where the service cable size is larger than #2 for existing 1, 2, and 3 family homes, the company shall make the final service connection in the customer's service end box.

b. Customer Responsibility (Service without P/L splice box)

1. The customer shall furnish, install and maintain the service conduit from the property line to his service end box or meter pan, as the case may be, except for 1, 2 and 3 family homes.
2. The customer shall install the conduit in consultation with the Company and the location where Company's conduit and customer's conduit will meet at the property line, shall be determined by the Company.
3. All customers shall furnish, install and maintain their service end boxes, including all seals between foundation/sleeves, sleeves/ducts, and duct/cables installed on or within their property.
4. In instances where the service cable size is #2 CU or smaller for existing 1, 2, and 3 family homes, it is permissible for the contractor to make the final service connection in the customer's service end box using company approved connectors.

c. Company Responsibility (Service with P/L splice box)

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1. The Company shall furnish, install and maintain the service conduit and cable in the public right-of-way up to the customer's property line splice box for all types of customers. For 1, 2 and 3 family homes, the Company shall also furnish, install and maintain the service cable on the private property. For multiple occupancy buildings, the Company shall furnish and install the cable on customer's property but shall not maintain the cable.
  2. The Company shall make the final splice in the property line splice box.
- d. Customer Responsibility (Service with P/L splice box)
1. The customer shall furnish, install and maintain the property line box.
  2. For commercial buildings, the customer shall furnish, install and maintain the cables and conduit on his property, from the property line to the end box or meter pan, as the case may be.
  3. For multiple occupancy buildings, the customer shall furnish, install and maintain the conduit on the private property. The Company shall furnish and install the cable from the property line to the end box or meter but will not maintain the conduit, cable, seals, etc, between the property line to the building
- e. Service Adequate for Existing 1, 2, and 3
1. In instances where the incoming service is adequate and the service cable size is #2 CU or smaller, it is permissible for the contractor to disconnect in the end line box in order to perform repairs or upgrades to the customer owned equipment.
  2. In instances where the incoming service is adequate and the service cable size is #2 CU or smaller, it is permissible for the contractor to reconnect in the end line box following repairs or upgrades to the customer owned equipment using company approved connectors.
  3. Please note: contractor MUST NOT reconnect until the authority having jurisdiction has issued proper documentation and all required documentation has been submitted to Energy Services.

## 14.0 DIRECT BURIED CABLES (DBC)

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**14.1** For each house, pair of houses or row of houses, as determined by the Company, the Company shall install a direct buried service (except where local municipal codes prohibit) from the street systems in accordance with Appendix C - Point of Service Termination Matrix

**a. Company Responsibility**

1. The Company shall furnish, install and maintain the direct buried service cable from the street to the customer's meter/end box for 1, 2, and 3 family homes.
2. For multiple occupancy buildings, the Company shall furnish and install service cable from the street to the meter but will not maintain the cable on private property except for the cable which is installed in conduit in one continuous pull from the Company facility in the street to the customer's meter.
3. For commercial buildings, the Company shall furnish, install and maintain direct buried service cable from the street to the customer's property line.
4. Where a conduit is required on customer's property, the Company shall furnish, install and maintain that conduit for 1, 2, and 3 family homes up to the exterior of the building line. In a non-subdivision the customer installs the conduit on the customer's property but the Company maintains it.

**b. Customer Responsibility**

1. The customer shall furnish, install and maintain an end box on his property (if required).
2. Where conduit is required on private property, the customer shall furnish, install and maintain the conduit/seals except for 1, 2 and 3 family homes, where the company shall install and maintain the conduit only to the exterior of the building line. Therefore, customers of 1, 2 and 3 family homes are to install and maintain the conduit and seals which are on or through the building wall.
3. For multiple occupancy buildings, the customer will maintain cable/seals on private property.

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4. For commercial buildings, the customer will maintain the cable/ conduits/seals on the private property, unless the cable is installed in customer conduits in one continuous pull from the street, then the Company will maintain the cable only.

**15.0 OVERHEAD SYSTEMS**

**15.1** Where the Company is allowed to supply new overhead service, the division of responsibility between the Company and the customer is as follows: (Refer to Appendix B).

**a. Company Responsibility:**

1. The Company shall install its service lateral to the point of service termination. This point shall be the first point of attachment nearest the supply facility generally on or near the front face of the building. If the service lateral exceeds 125 feet, the customer shall be required to install an intermediate pole (supporting structure see EO-16883-B) to accept the service lateral. This pole will then become the point of service termination.

**b. Customer Responsibility**

2. The customer is responsible for supplying necessary supporting structures on his property and all service conductors and equipment beyond the Company's point of service termination.

**PART III - EXISTING SERVICES**

**16.0 UNDERGROUND CONDUIT AND CABLE SYSTEMS**

**16.1 Replacement After Service Failure (Non-Loop Services)** - In case of a failure on an underground AC service, replace the service cable in accordance with Specification EO-2017. While replacing the service cable in 1, 2, and 3 family homes only, if access to the splice box is found to be difficult by field forces, the splice shall be eliminated if practical. Install the new cable through the splice box in one continuous pull from the street to the customer's premises. If, however, the field conditions are such that one continuous pull of the cable is not possible, then the splice box shall remain the terminating point as before. However, in the case of 1, 2, and 3 family houses, cable will be provided to the meter or service end box, as applicable.

**a. Company Responsibility (Service without P/L splice box)**

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1. If a failure occurs on the service cable, the Company shall replace the cable from the street to the customer's end box or meter pan at Company's cost if the service can be installed in one continuous pull from the street.
2. The Company shall maintain the service conduit in the public right-of-way and to the building line or customer sweep for 1, 2, and 3 family homes.
3. The Company shall make the final connection.

**b. Customer Responsibility (Service without P/L splice box) -**

The customer shall maintain the service end box, conduit and seals on their property. However, in the case of 1, 2 and 3-family houses, the company will maintain the conduit to the building line or customer sweep. In addition, all customers shall maintain their service equipment from the point of service termination, including the service entrance duct/conduit sweep, sleeves, associated seals, anchor/attachment points, service splice/end box, etc.-

**c. Company Responsibility (Service with P/L splice box)**

1. The Company shall replace the service conduit and cable, if required, in the public right-of-way up to the customer's property line splice box. For 1, 2, and 3 family homes the replacement of conduit shall be extended to the customer's building line or sweep, and cable to the point of service termination.
2. The Company shall make the final splice in the property line splice box which shall remain the point of service termination. In 1, 2, and 3 family homes, the Company shall make connections at the customer's meter also, if required.

**d. Customer Responsibility (Service with P/L splice box)**

1. The customer shall maintain the property line splice box (See Specifications EO-6210-B and EO-7836-C) and the service conduit on his property except for 1, 2, and 3 family homes.
2. The customer shall replace the service cable, and applicable seals if required from the property line splice box to his meter, except for one, two and three family homes where the Company shall replace the cable.

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## 16.2 Replacement after Failure on Loop Services

- a. When a main service to a group of buildings burns out between the property line and the building, the Company shall replace the service cable and conduit only if required. The conduit and cable work on the private property will be done either by Company forces (if possible), or by Company Contractor.
- b. When a burnout occurs within the loop and the cable cannot be replaced by Company forces because of a blocked duct or a duct in a dilapidated condition or a duct less than 1-1/2" diameter, after the Company makes a reasonable effort to clear the duct, it is the responsibility of the Company to clear the duct or provide a new duct run (minimum 1-1/2" diameter) for the Company's installation of the cable or provide a separate service. Other customers shall continue to be supplied from the loop as before

## 16.3 Replacement for Reinforcement (Loop Services) upon the customer's request for reinforcement, Operating Area Engineering may either:

- a. Reinforce the existing main service from the street facility to the point of service termination, provided the conduit on customer's property is of proper size (minimum 1-1/2" diameter). Existing loop service to remaining customers shall be maintained as required; or,
- b. If a reinforcement is required within the loop, the Company shall reinforce the existing loop (Company shall bear the cost for residential customers in 1, 2, and 3 family homes only).
- c. When a customer is remodeling his basement and relocation of conduit and cable that provides service to other customers on the loop is required, the conduit and cable to be used in the basement will be supplied and installed by the Company at customer expense.

## 16.4 Replacement for Reinforcement (Non-Loop Services)

- a. Upon customer's request, reinforce the existing service cable to the point of service termination in accordance with Specification EO-2017, only when the load requires. For 1, 2, or 3 family homes, the Company shall furnish and install the service cable on the customer's property to the point of service termination if the service can be installed in one continuous pull. The customer supplies the trench from property line to point of termination.

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- b. When a customer in 1, 2, or 3 family homes, supplied with a 2-wire service installs 3-wire or 3 phase 4-wire service equipment to provide for load growth and engineering has ruled on the service characteristics, the company shall furnish and install the service cable, on the customer's property, if the cable can be installed in conduit in one continuous pull. If the existing conduit on the customer's property is of inadequate size or in dilapidated condition, the customer shall furnish and install conduit of the proper size (minimum 1-1/2" diameter) except for 1, 2 or 3 family homes where the Company shall furnish and install the conduit of the proper size, to the exterior of the building line, or customer sweep.
- c. When the point of service termination must be relocated due to expansion of the customer facilities, and:
  - 1. The existing service and distribution supply system has adequate capacity, any new service additions shall be built at customer's expense.
  - 2. The existing service and/or distribution supply system has inadequate capacity, the customer's expense shall be the difference between service construction to the new location and service reinforcement to the existing location.
- d. Relocation of the point of service termination for Company purposes shall be done at the Company's expense.

16.5 Special cases should be referred to the appropriate Operating Area Engineering Manager for decision.

## 17.0 **DIRECT BURIED CABLE (DBC) SYSTEMS**

17.1 Replacement After Service Failure - If failure occurs on the service cable, replace the cable in accordance with Specifications EO-2017 and EO-6067.

### a. Company Responsibility

- 1. The Company shall replace the damaged cable at Company's cost on public and private property for all the DBC customers if the cable is installed in conduit in one continuous pull from the street to the customer's meter.

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2. In the case of customers supplied with direct buried cable on their property, the Company shall repair or replace the damaged piece in the public right-of-way up to the customer's property line except for 1, 2, and 3 family homes where the Company shall repair or replace all cable (if required) from the street to the customer's service end box and/or meter as required.
3. The Company shall make the final splice at the property line or transformer, and also at the customer's meter, if required, in order to restore his service.

b. Customer Responsibility - The Customer shall maintain the service cable and seals on his property and end box (if installed). For 1, 2, and 3 family homes, the customer will maintain the end box (if installed), and seals, although the cable will be maintained by the Company on its property.

**17.2 Replacement for Reinforcement of Service** - Upon the customer's request for reinforcement of service, Operating Area Engineering will reinforce the existing service from the street facility to the point of service termination as follows:

a. Company Responsibility - The Company will furnish the cable up to the meter/end box.

b. Customer Responsibility - The customer shall provide trench on the private property and install the cable provided by the Company. If the conduit is required on the private property by local municipality, it should be installed by the customer and sealed accordingly.

## **18.0 OVERHEAD SYSTEMS**

When a failure occurs on the main service, whether it is front yard or a rear yard service, or replacement is necessary due to load growth, the Company is responsible for replacing the service lateral to the first point of attachment on the building or the first supporting structure on the customer's property.

### **18.1 Replacement after Failure on Bus Services**

- a. When a failure occurs on the main service of the bus connections, the Company is responsible for replacing the service lateral to the first point of attachment on the building or the first supporting structure on the customer's property.

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- b. When a failure occurs within the bus on the common conduit (see Appendix E - Bus Services), which supplies a group of buildings, the Company shall replace the damaged cables. While replacing the cable, if the Company forces find a conduit in a dilapidated condition or a conduit less than 1-1/2" diameter, it is the responsibility of the Company to provide a new conduit of the proper size (minimum 1-1/2" diameter) for the Company installation of the cable or provide for a separate service for 1, 2, and 3 family homes.
- c. When a failure occurs on a service (either on the main service or within the bus) or replacement is required due to load growth, the sizes of the cable(s) for replacement shall be determined as per Company Specifications EO-2017 and EO-6042
- d. An alternative to repair will be a request by the customer for new overhead or underground service.
  - 1. If overhead service, the customer is responsible for supplying necessary supporting structures such as service hooks, weather-head and stand pipe depending upon the field conditions to accept this service.
  - 2. If underground service, the customer must provide service equipment and facilities such as end box, conduit, seals and splice box depending upon the field conditions. The customer shall pay the incremental costs between installing underground and overhead.
- e. Where one customer requests a new service to his entrance facilities at his expense, the Company shall maintain the supply to the remaining customers on the bus but the customer pays for reconnection of the bus. The Operating Area shall advise the customer accordingly

**18.2 Replacement for Reinforcement** - Upon the customer's request, reinforce the existing service lateral to the first point of attachment on the building when the load requires and sizes of the cable(s) in accordance with Specifications EO-2017 and EO-6042. If the customer cable requirements exceed two sets of cable per phase, the service must be installed underground. The customer will be required to pay the incremental cost between our overhead and underground service.

**18.3 Replacement for Reinforcement of Bus Services** Upon the customer's request for reinforcement, Operating Area Engineering may either:

- a. For reinforcement of main bus services, the Company will reinforce the service lateral to the first point of attachment on the building (service termination) in accordance with Specifications EO-2017 and EO-6042, for determination of cable sizes, when the load requires.

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- b. If a reinforcement is required within the bus the Company shall reinforce the bus (Company shall bear the cost for residential customers in 1, 2 and 3 family homes only). However, if the Company forces find a conduit in dilapidated condition or a conduit less than 1-1/2" diameter, it is the responsibility of the Company to provide a new conduit of proper size (minimum 1-1/2" diameter) or provide for a separate service

**18.4 Replacement for Reinforcement of Rear Yard Services**

- a. Upon customer's request for reinforcement of an existing rear yard service, the customer shall be required to provide the necessary service entrance facilities to receive service from the Company's street distribution system in the front, if a street distribution system in the front, is already existing. The rear yard system shall stay in use for the remaining customers.
- b. Should the requirement of Paragraph 18.4.a be unsuitable for installation, a study shall be made by the Operating Area Engineering to determine how to supply the customer

**19.0 CONVERSION OF EXISTING OVERHEAD SERVICES TO UNDERGROUND**

**19.1** Upon the customer's request, overhead distribution may be converted to underground when:

- a. The customer pays the cost of installation and the incremental charges of the underground facilities, including any distribution system extension that may be required and the cost of removal of the existing overhead facilities less net salvage.
- b. The customer installs the equipment necessary to receive the underground service at the time of conversion

**20.0 LENGTHS OF CABLE FOR SERVICES ENTERING CUSTOMER PROPERTY**

**20.1** This point provides guidelines for maximum cable lengths for services entering customer property via conduit in customer basements or risers. These types of installations may require cable to be carried in by I&A Crews by hand due to space limitations on customer property

Cable Size	Spec Number	Weight per Foot	Maximum Service Length
750 kcmil Copper	EO-7655	2.58 lb.	85 Ft
500 kcmil Copper	EO-7654	1.76 lb.	110 Ft
4/0 Copper	EO-7653	0.78 lb.	135 Ft

**20.2** The options available in cases where there is a need for a longer service are as follows:

- Install a splice box, reducing the length of the cable being installed into the customer premises
- Evaluate the property to determine the method needed to install the cable

**20.3** The maximum weight that can be lifted by a single person is 50 lb. If it exceeds 50 lb., alternate ways need to be used to carry the cable

## **21.0 REFERENCES**

### **21.1 Specifications**

<b><u>Specification</u></b>	<b><u>Title</u></b>
<a href="#">EO-1032</a>	Electric Service Conduits for Secondary AC Services
<a href="#">EO-2017</a>	Low Voltage A.C. & D.C. Service Conductors
<a href="#">EO-6006</a>	Standard Rating for URD 15 kV primary & 600V Secondary X-Linked Poly & EPR Rubber
<a href="#">EO-6039</a>	Standard Ampacity Ratings for 600V A.C. Underground Service Cables in Ducts & Service Take Offs, from Multi-bank transformer installations
<a href="#">EO-6042</a>	Standard Ampacity Ratings for 600V Class A.C. Service Cables installed Overhead and in Riser Pipes
<a href="#">EO-6067</a>	Direct Buried Secondary Systems for U.R.D. Developments (Single phase Transformers, Secondary mains and Services)
<a href="#">EO-6224</a>	Trenching Requirement for Installing Direct Buried Cable and Joint Trenching

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## 21.2 Drawings

<b><u>Specification</u></b>	<b><u>Title</u></b>
<a href="#">EO-6208-C</a>	Customers Electric Service installation buildings with Basements at Property Line indoor metering
<a href="#">EO-6209-C</a>	Customers Electric Service installation buildings with Basements Back of Property Line without Property Line Box Indoor Metering
<a href="#">EO-6210-C</a>	Property Line Splice Box Requirements for Building Back of Property Line
<a href="#">EO-6211-C</a>	Customers Electric Service installation buildings without basements at Property Line Indoor Metering
<a href="#">EO-6212-C</a>	Customers Electric Service installation buildings without basements Back of Property Line without Property Line Box Indoor Metering
<a href="#">EO-6214-C</a>	Customers Electric Service installation buildings with Sub-Sidewalk space outside of Property Line indoor metering
<a href="#">EO-6215-C</a>	Customers Electric Service installation building with or without basement, back of Property Line, without Property Line Box Outdoor Metering
<a href="#">EO-7836-C</a>	Customers Electric Service to Two Adjacent One or Two Family Houses on Adjoining Premises Branch Type Service
<a href="#">EO-14221-C</a>	Splicing and Installation Direct Buried Service Cables
<a href="#">EO-16833-B</a>	Installation of Underground A.C. Service Lateral and External Loop Service to one two or three family semi-detached or row homes
<a href="#">EO-16883-B</a>	Customer Property Pole for low tension service

## 22.0 **RELATED DOCUMENTS**

22.1 Requirements for Electric Service Installations, Con Edison

22.2 PSC Rules and regulations, 16, NYCRR, Chapter II - Electric Utilities, Part 100: "Underground Extensions for New Residential Subdivisions"

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## 22.3 Schedule for Electricity Service, PSC NO.10- Electricity, Con Edison

### 23.0 ATTACHMENTS

Appendix A	Conditions for Underground Services.
Appendix B	Conditions for Overhead Services in Subdivisions and Non-Subdivisions.
Appendix C	Point of Service Termination Matrix
Appendix D	Electric 100 Feet Rule
Appendix E	Bus Services (Loop Services).
Appendix F	Service to Residential Homes in Non-Subdivision (Examples).
Appendix G	Service to Residential Homes in Subdivision (Examples).

(Signature on file)

\_\_\_\_\_  
Sergio Rodriguez  
Department Manager - System Design  
Distribution Engineering Department

J. Londono

<b>REVISION NO.13:</b> Added the new Section 20.0: LENGTHS OF CABLE FOR SERVICES ENTERING CUSTOMER PROPERTY	<b>FILE:</b> Application and design Manual No.4  Construction Department Field Manuals No.16 - Services Elec. No. 20 - Underground, Elec. No.22 – Systems
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## APPENDIX A

### CONDITIONS FOR UNDERGROUND SERVICES

<b>Street facilities prior to service construction:</b>	<b>UG Service shall be supplied from:</b>
A. Street has UG distribution facilities	Existing UG street facilities.
B. URD new development or underdevelopment	New UG street facilities
C. OH facilities exist	Refer to paragraph 19.0 for UG conditions of service
D. Street has existing OH and UG facilities and an OH rear yard system also exists or any combination of the two facilities exists.	<ul style="list-style-type: none"> <li>a. Four or less 1, 2, and 3 family buildings: OH services will be provided. (Paragraph 19.0 also applies if customer request UG service.)</li> <li>b. Five or more 1, 2, and 3 family buildings or multiple dwellings (four or more individual dwelling units in each multiple dwelling.) UG services will be provided.</li> <li>c. No rear yard services will be provided unless such a supply is clearly superior to any alternative.</li> </ul>

Note    UG – Underground  
           OH – Overhead

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## APPENDIX B

### CONDITIONS FOR OVERHEAD SERVICES IN SUBDIVISIONS AND IN NON-SUBDIVISIONS

#### A) SUBDIVISION

1. Service to a subdivision may be supplied overhead if the Company can provide service to the subdivision:
  - (i) by extending the overhead distribution line for up to 500 feet of overhead distribution line and up to 100 feet of service line or up to 300 feet of overhead distribution line and up to 100 feet of service line for single-phase and three-phase supply, respectively, measured from the Company's existing electric system (PSC No.10, Section 5, item 5.4.2.1)
  - (ii) by extending its facilities no more than 600 feet in a cul-de-sac where a portion of the street within the subdivision is served by overhead facilities within or at the entrance of the cul-de-sac: or
  - (iii) by connecting an area between existing overhead facilities for a distance of 1,200 feet, or less; or
  - (iv) by installing service laterals to new applicants from existing overhead lines.
  - (v) When the subdivision is less than 20 acres and surrounded or abutted on a least 75 percent of its perimeter by existing overhead facilities, service to the subdivision may be installed overhead if the Company files notice of its intent to go overhead at least 30 days prior to construction and the request is not denied by the Commission or is approved within 30 days by the Commission staff.

In any case where the Company would normally be permitted to install overhead service to a subdivision, the Company shall install the facilities underground if required by municipal ordinance or other governmental authority having jurisdiction over the land use. However, if the applicant requests underground service, the applicant shall pay in advance the

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Company's estimated difference in cost between the proposed overhead and underground installations.

2. The Company reserves the right to designate the service connection point and the point at which the service lateral will connect to the Company's electric distribution lines or equipment. When a dwelling unit requires less than 100 feet of distribution line, the Company will install a service lateral of sufficient length to provide a combined amount of up to 100 feet of distribution line and service lateral, including any portion thereof on private property. The applicant shall pay for the installation of the service lateral in excess of the combined 100 foot allowance. The Company will maintain the service lateral.
3. The facilities provided without charge under General Rule III(4)(d) and (e) shall be measured from the Company's distribution facilities (from the connection point on the riser).

**B) NON-SUBDIVISION**

1. Service laterals can be connected to existing overhead street facilities.

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## APPENDIX C

### POINT OF SERVICE TERMINATION MATRIX

#### New Residential

Termination Point	Property Line	Weatherhead	Meter (Outdoor Metering)	Foundation	Remarks
<b>OH Electric</b>					
All		X			Or customers pole if more than 125'
<b>UG Electric</b>					
1, 2, or 3 Family			(a) X	*X	*Indoor metering B/L o P/L Coincide
MTRB**				X	

(a) Except when an endline box is used as a means of providing a loop service to an adjacent attached or semi-attached house. In many cases, the point of service termination is the endline box.

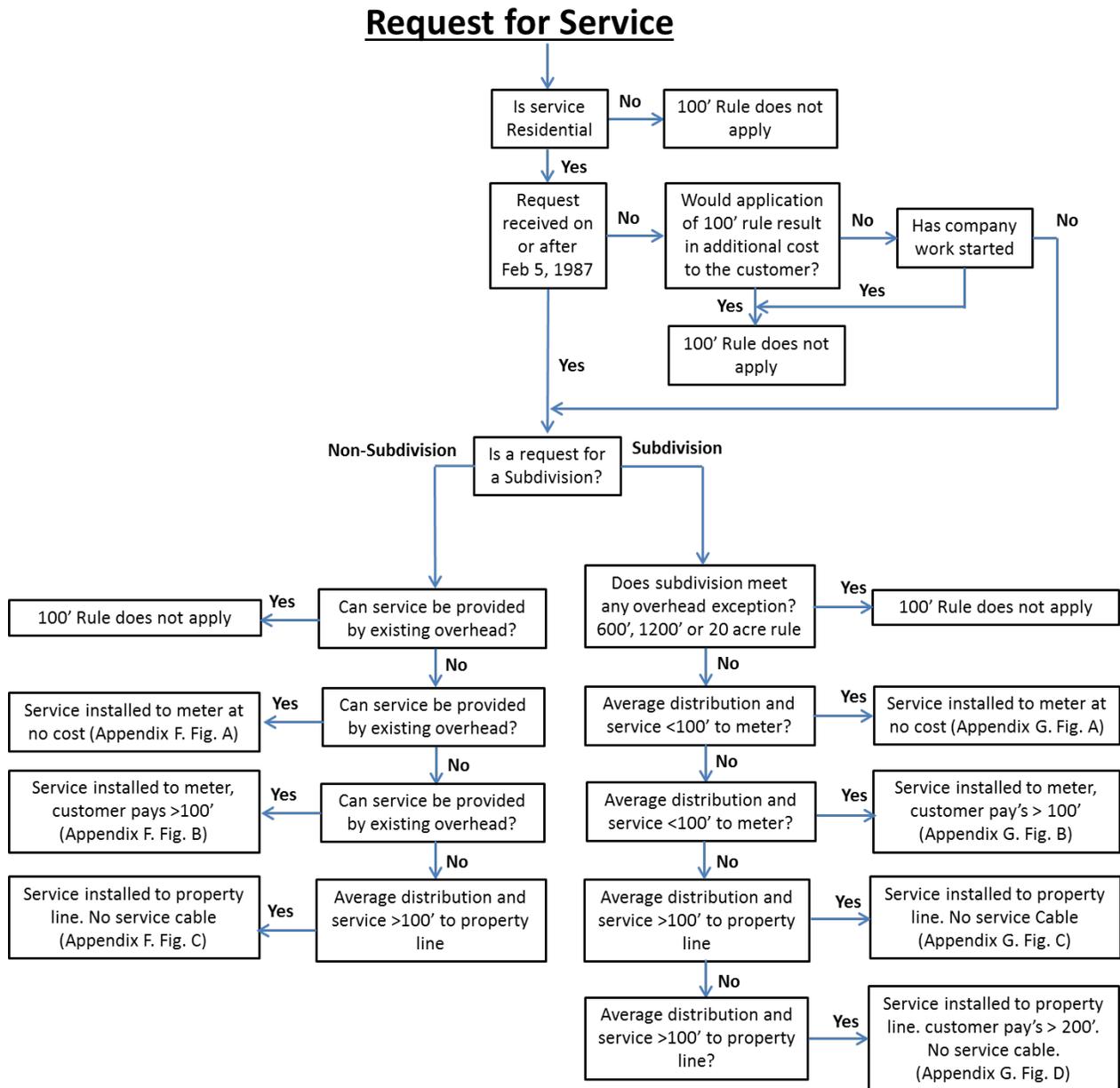
\*\* MTRB: Multiple tenant Residential Building

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# APPENDIX D

## ELECTRIC 100 FEET RULE

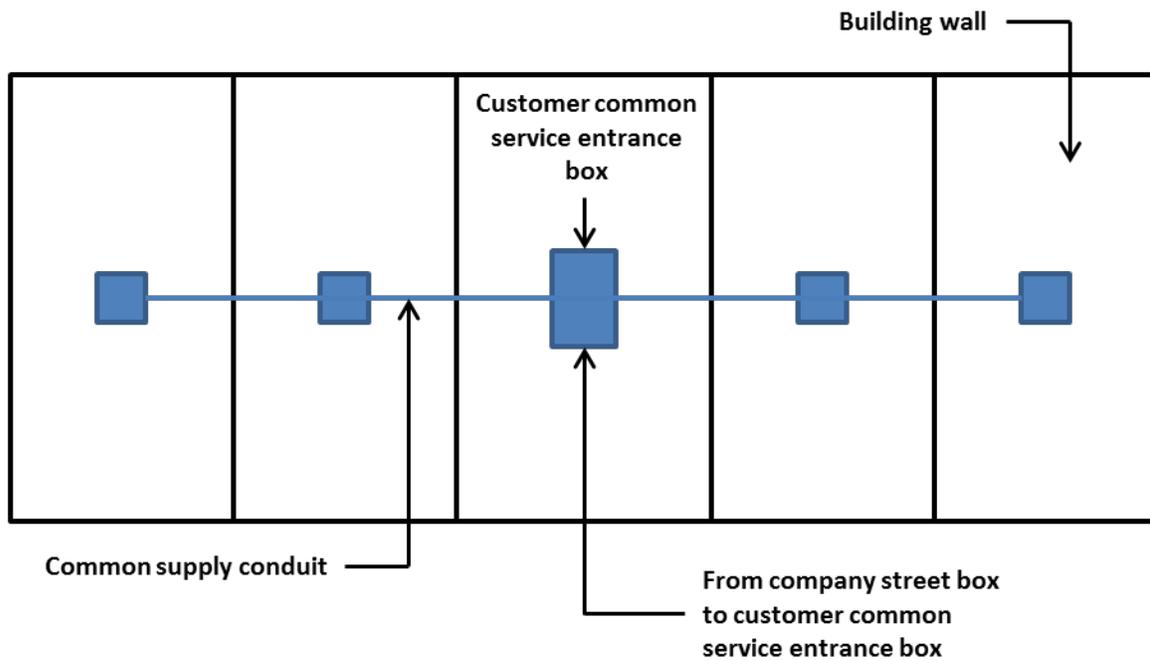


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## APPENDIX E

### BUS SERVICES (LOOP SERVICES)

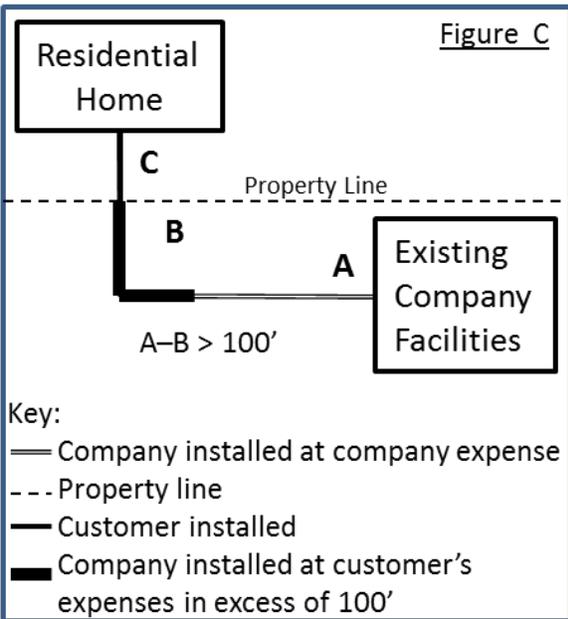
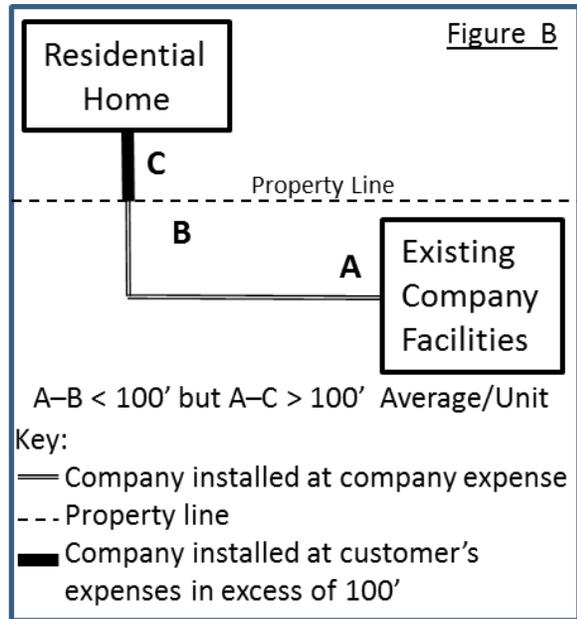
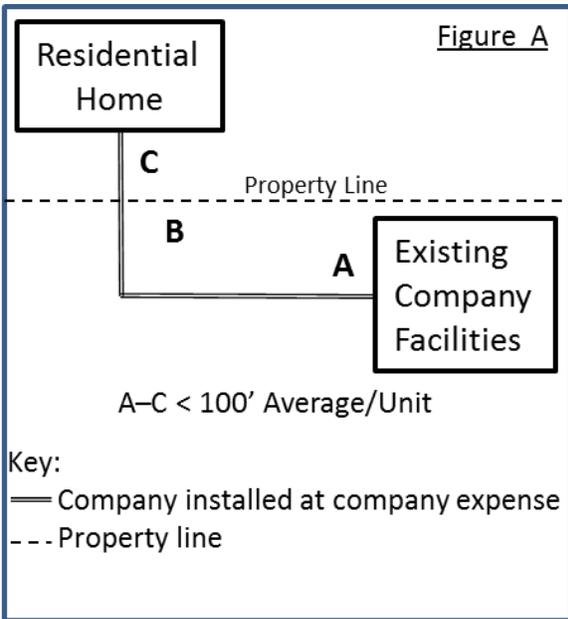


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**APPENDIX F**

**SERVICE TO RESIDENTIAL HOMES IN NON-SUBDIVISION (EXAMPLES)**



**APPENDIX G**

**SERVICE TO RESIDENTIAL HOMES IN SUBDIVISION (EXAMPLES)**

