# Indianapolis Power & Light Company

## Electric Service and Meter Manual



Written by:

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**Revised 6/7/16**

ELECTRICAL INSPECTION AUTHORITIES COVERING TERRITORY SERVED BY INDIANAPOLIS POWER & LIGHT COMPANY

| | | |
|---|---|---|
| City of Indianapolis *(Marion County, excluding Beech Grove, Lawrence, Southport and Speedway)* | Department of Code Enforcement<br>City of Indianapolis<br>1200 Madison Ave. Suite 100<br>Indianapolis, IN 46225<br>http://www.indy.gov/dce | General Information<br>Ph: 327-8700 |
| Kevin Thompson<br>Electrical Inspections Questions e-mail<br>Electrical Inspections Hotline<br>Automated Inspection Request Line | Supervisor, Building Inspections<br>mailto:ele.inspectionquestions@indy.gov<br>available from 8 - 5 | <br><br>Ph: 327-8938<br>Ph: 327-5525 |
| Beech Grove<br>Mike Hughes | Electrical Inspector<br>City Hall<br>806 Main Street<br>Beech Grove, IN 46107 | Ph: 223-4776 |
| Boone County<br>Neil (Skip) Hart | Electrical Inspector<br>116 W. Washington St., Rm. 101<br>Lebanon, IN 46052<br><br>8 AM – 9 AM & 3 PM – 4 PM<br>Mon. thru Fri. | Ph: (765) 482-3821<br><br>Fax: (765) 483-5241 |
| City of Cumberland (Hancock Co.) | | Ph: 894-6202<br>Fax894-6216 |
| Greenwood<br>Tony Magnabosco, Commercial<br>Lowell Weber, Building Insp. | Electrical Inspector<br>300 S. Madison Avenue<br>Greenwood, IN 46142 | Ph: 881-8698 |
| Hamilton County<br>(Carmel and Clay Townships Only)<br>Jim Blanchard | Building & Electrical Inspectors<br>1 Civic Square<br>Carmel, IN 46032 | Ph: 571-2444 |

If a correction is needed,
please send an e-mail with the correction to charlie.eldridge@aes.com to have it corrected

ELECTRICAL INSPECTION AUTHORITIES COVERING TERRITORY SERVED BY INDIANAPOLIS POWER & LIGHT COMPANY

| | | |
|---|---|---|
| Hancock County | | |
| Scott Williams<br>Dan Cameron | Court House Annex<br>111 American Legion Pl., Suite 146<br>Greenfield, IN 46140 | Ph: 462-1133 |
| Hendricks County | | |
| Mike Alverson<br>Mike Riffey<br>Tim Smith | Building Inspector's Office<br>355 S. Washington St., Suite 212<br>Danville, IN 46122 | Ph: 745-9254 |
| Johnson County | | |
| Wes Harris | Building Commissioner and Inspectors<br>86 W. Court Street<br>Court House Annex<br>Franklin, IN 46131<br>Between 8:00 - 9:00 AM | Ph: 346-4350 |
| Lawrence | | |
| John Kopetsky | Electrical Inspector<br>9001 E. 59th Street, Suite 300<br>Lawrence, IN 46216 | Ph: 545-8787 |
| Mooresville | | |
| Tim Bennett | City Electrical Inspector<br>4 E. Harrison Street<br>Mooresville, In 46158 | Ph: 831-9545 |
| Morgan County | | |
| Scott Troutman | Electrical Inspector<br>180 S. Main St., Suite 204<br>Martinsville, IN 46151 | Ph: (765) 342-1060 |
| Owen County | | |
| Josh Hogan | Electrical Inspector<br>Owen County Building Dept.<br>Court House<br>Spencer, IN 47460 | Ph: (812) 829-5017 |

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ELECTRICAL INSPECTION AUTHORITIES COVERING TERRITORY SERVED BY INDIANAPOLIS POWER & LIGHT COMPANY

| | | |
|---|---|---|
| Putnam County | | |
| Art Kenworthy | Building Inspector<br>1542 S. Bloomington St., Suite 1500<br>Greencastle, IN 46135 | Ph: (765) 720-5888 |
| Shelby County | | |
| David Adams | Electrical Inspector<br>25 West Polk<br>Shelbyville, IN 46176 | Ph: (317) 392-6480 |
| Southport | | |
| Dwayne Langreck | Electrical Inspector | Ph: 442-7349 |
| Speedway | | |
| Kevin Schrader | Electrical Inspector<br>1451 N. Lynhurst Dr.<br>Speedway, IN 46224 | Ph: 281-7120 |
| Whitestown | | |
| Dave Taylor | Electrical Inspector<br>6999 Lexington Cir.<br>Zionsville, Indiana 46077 | Ph: 942-1553 |
| Zionsville | Building Inspector | |
| Adam Holman | Planning Department | Ph: 873-8246 |
| Mike Lathrop | 1100 W. Oak St.<br>Zionsville, IN 46077 | Ph: 873-8248 |

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please send an e-mail with the correction to charlie.eldridge@aes.com to have it corrected



**Revised 6/7/16**

**Delete Pages I and 8**

**Page I is replaced with**
**Page IA and IB**

**Page 8 is replaced with**
**Page 8A and 8B**

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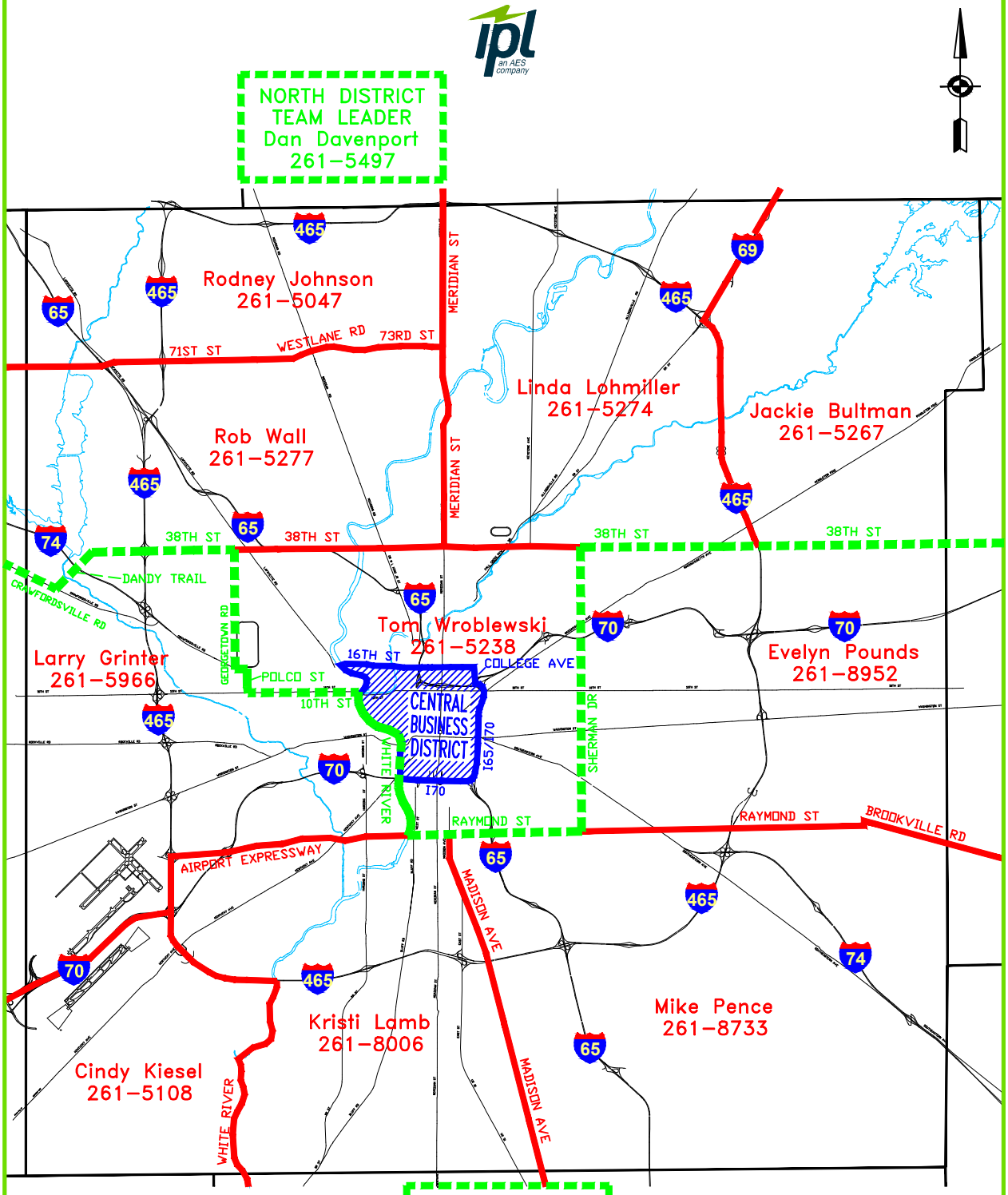



MAJOR OVERHEAD PROJECTS
TEAM LEADER
Casey Shull
261-6564

| | |
|---|---|
| Steve Bullock | 261-6527 |
| Jim Disman | 261-6578 |
| Jim Duvall | 261-8694 |
| Terry Short | 261-8732 |
| Bob Stephens | 261-8085 |

MAJOR UNDERGROUND PROJECTS

**For Central Business District please refer to drawing GB0-110.**

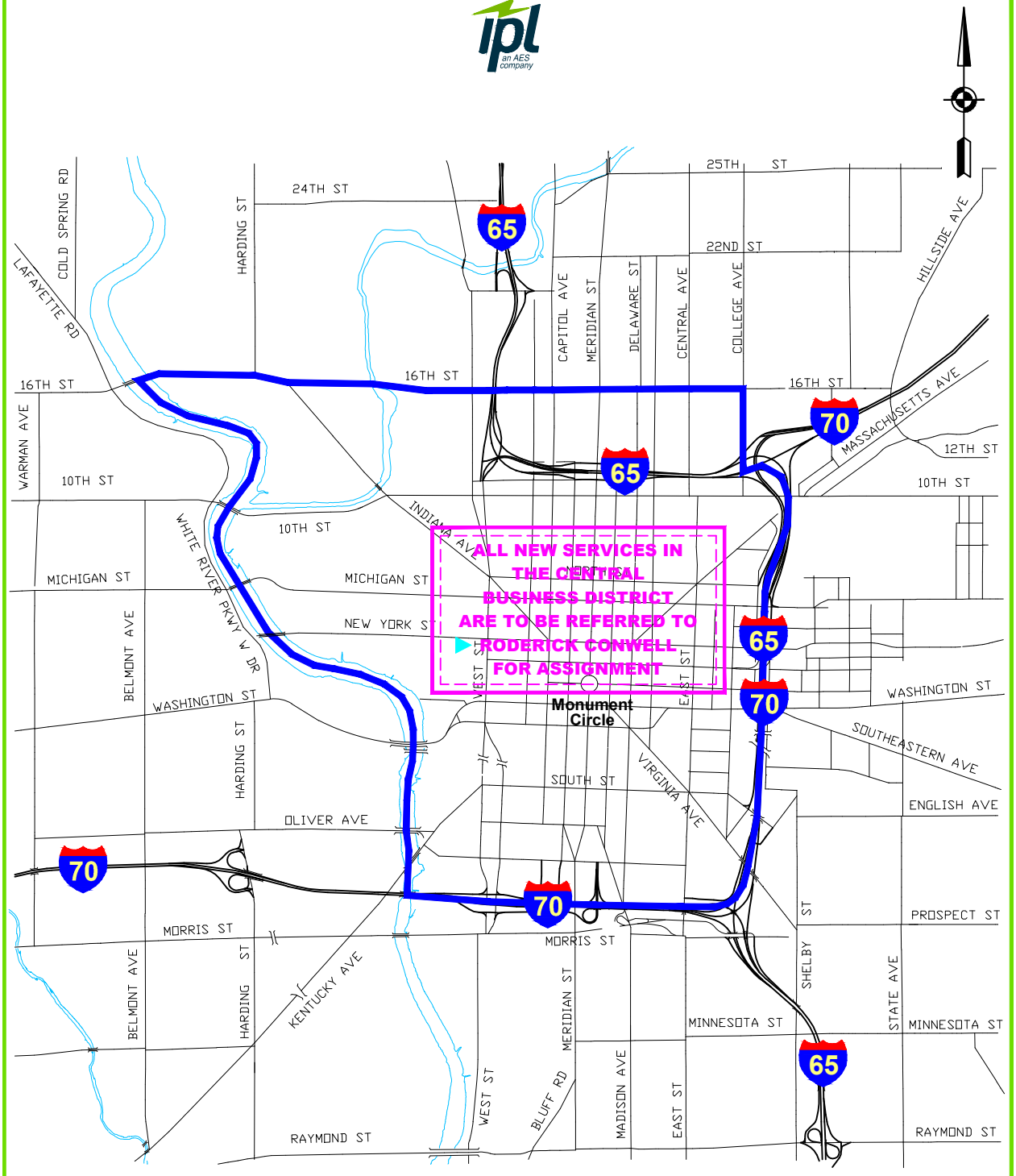
NOTE:

EMAIL ADDRESS FORMAT IS
firstname.lastname@aes.com

# CUSTOMER PROJECTS ENGINEERING DISTRICT MAP

REV 6-6-16

GB0-100




FIRST CONTACT PERSON
FOR NEW SERVICES
▶ Roderick Conwell
▶ 261–8642

| | | |
|---|---|---|
| | Marshall Franklin | 261–5698 |
| | Ken Jenkins | 261–5193 |
| ▶ | David Lufcy | 261–8955 |

NOTE:
EMAIL ADDRESS FORMAT IS
firstname.lastname@aes.com

# CENTRAL BUSINESS DISTRICT ENGINEERING DISTRICT MAP

MAJOR UNDERGROUND PROJECTS ENGINEERING TEAM

REV 6–6–16

GB0-110

# Distributed Generation Contact Information

## Level I Applications

Jake Allen, Marketing and Program Management, 261-8972
John Haselden, Regulatory Affairs, 261-6629

## Level II and III Applications

Account Management Executives shown on drawing GB0-120

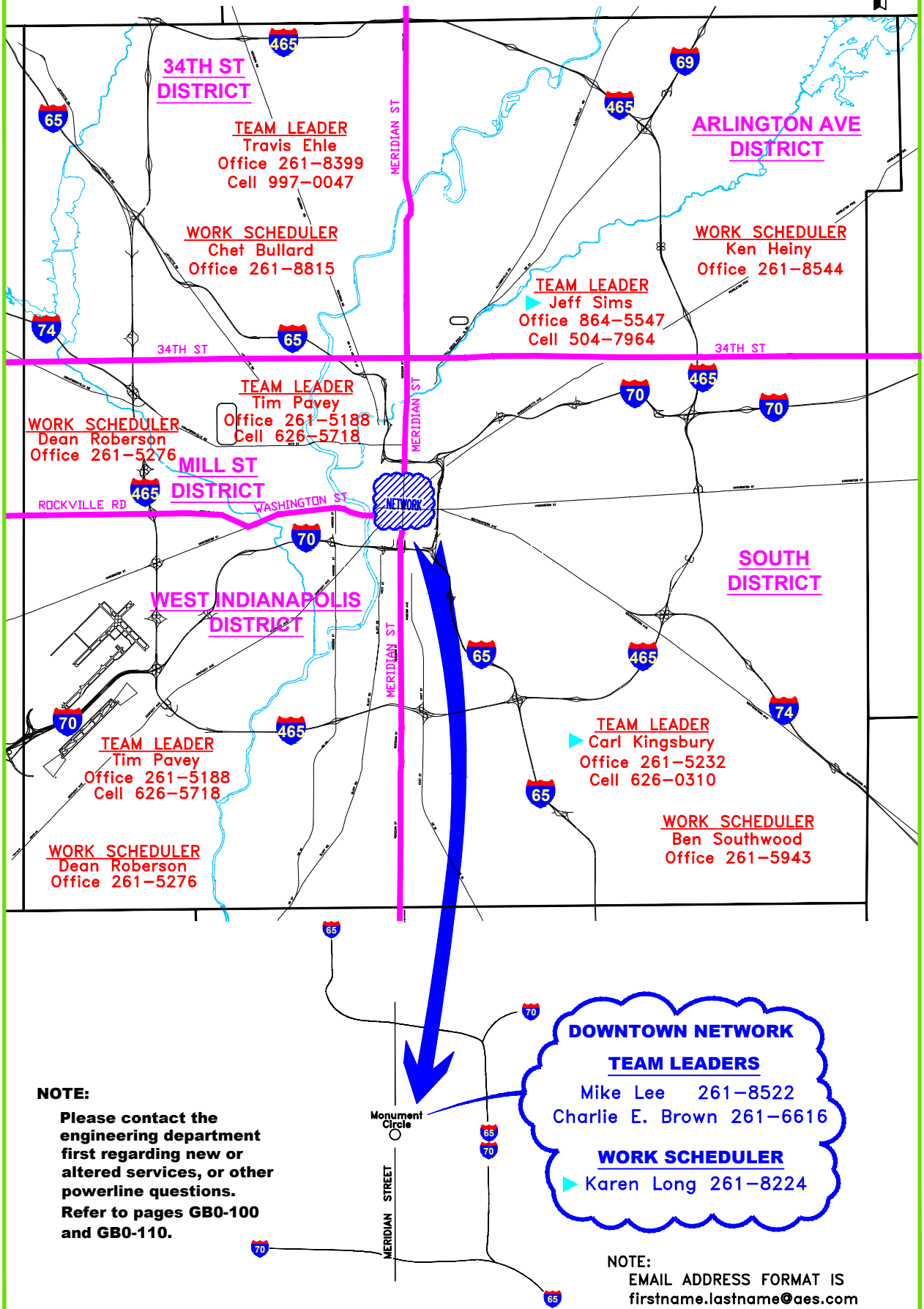
## Technical

Robert Grubb, Planning, 261-5714

## Regulatory

Ken Flora, Regulatory Affairs, 261-6713

NOTE:
EMAIL ADDRESS FORMAT IS
firstname.lastname@aes.com




**NOTE:**

**Please contact the engineering department first regarding new or altered services, or other powerline questions. Refer to pages GB0-100 and GB0-110.**

**DOWNTOWN NETWORK**

**TEAM LEADERS**

Mike Lee 261-8522

Charlie E. Brown 261-6616

**WORK SCHEDULER**

Karen Long 261-8224

NOTE:
EMAIL ADDRESS FORMAT IS
firstname.lastname@aes.com

# CONSTRUCTION AND MAINTENANCE DISTRICT MAP

REV 6-6-16

GB0-140

## 113 ADDITIONAL CHARGES

Customer requesting non-emergency work to be done during a time when the Company's overtime pay is required to be paid and is for the customer's convenience will be billed at the current overtime rate per hour on a field invoice.

## 114 MAINTAINING SECURITY OF LOCKED FACILITIES

It is unlawful to break locks for access to any Company facilities without notifying the Service Dispatch Office on telephone number 261-8111. Cooperation will be extended at the request of the qualified electrician for under emergency conditions. Request shall be made to the Service Dispatch Office for these cases.

There are situations where a qualified electrical contractor needs to gain access into a pad mounted transformer, a locked meter cabinet, or a locked junction cabinet for normal maintenance or construction work. Under these conditions, contact the Service Connection Department at (317) 261-8133 at least 48 hours in advance.

If this is for the installation of conduits into locked pad mounted equipment, the contractor’s conduits shall be within 5 feet of the IPL equipment. Two hours will be allotted for the appointment. Regular hours for this work are 8:00 AM - 1:00 PM, Monday – Friday. Work performed after regular business hours (after 3:30 PM) will be billed at the current overtime rate per hour on a field invoice. In the event that IPL arrives at a site and no one is present, the contractor shall start this process over.

For access to sealed meter facilities, see Section 555.

## 125 HEIGHT OF SERVICE DROP

The point of attachment of the service drop shall be a minimum of 13.5 feet and a maximum of 22 feet above ground, and in all cases be of such height as to provide at least the minimum clearances at any point for the service drop as required by the National Electrical Safety Code.

The clearance of the service drop shall be maintained in all cases of grade changes and/or the installation of swimming pools, decks, room additions, outbuilding, etc. Clearance requirements for swimming pools are much greater than for normal grade and in many cases the service drop must be converted to an underground service lateral (see Section 117) in order to meet the NESC requirements.

## 127 UNDERGROUND SERVICE LATERAL WITHIN 5 FEET OF A POOL

Where a service lateral is within 5 feet of a pool, the service lateral shall be relocated to be 5 feet or further from the pool and apron/deck. The customer will be charged for any modifications to their service laterals. Additionally, the customer will always be responsible for the replacement of the meter fitting, trenching, backfill, furnishing and installing any required conduit, and repair of the landscape.

Where 5 feet cannot be obtained, the customer may install Schedule 40 PVC conduit with a minimum of 18 inches of cover under the apron/deck of the pool but IPL prohibits the installation of the cable under any part of the pool itself. This conduit shall extend a minimum of 5 feet past the edge of the pool and 2 feet past the apron/deck.

## 130 LENGTH OF SERVICE DROP

The length of the service drop from pole to point of attachment on the building or other structures shall not exceed 125 feet, in many cases it may need to be considerably shorter.

## 135 EXTENSION OF LINES

Where there is a reasonable prospect that capital expenditure is warranted, the Company will extend its lines and service facilities in accordance with the conditions set forth in its Rules and Regulations. All applications for line extensions shall be referred to the appropriate Engineering Division. (See maps in front of book for jurisdiction.)

## 137 CLEARANCES TO HAZARDOUS (CLASSIFIED) LOCATIONS

Company lines and equipment are not suitable for installation above, below or within areas defined by the Indiana Electrical Code as classified locations. Locations shall be classified depending on the properties of the flammable gas, flammable liquid-produced vapor, combustible-liquid produced vapors, combustible dusts, or fibers/flyings that may be present, and the likelihood that a flammable or combustible concentration or quantity is present. The boundaries and classification of those areas shall be determined by a professional engineer where these conditions exist.

## 140 EASEMENT - RIGHTS-OF-WAY - TREE TRIMMING

Line extensions are contingent upon assistance by the applicant in securing the necessary easements, rights-of-way, and tree trimming permits. The Company shall be under no obligation to start construction until satisfactory easements, rights-of-way, and tree clearances have been obtained.

## 142 RIGHT TREE RIGHT PLACE

Misplaced or improperly maintained trees can cause power outages during severe weather. You can help prevent power outages by using the following guidelines to plant your trees. For information about planting the right tree in the right place, please download this brochure.

The normal clearance that must be maintained from transformers and equipment is ten feet. Lesser clearances are permitted to some parts of transformers and equipment. Plant large trees (those that will become 40 feet tall or more at full maturity) at least 50 feet away from overhead distribution lines. Plant smaller trees (those that will be less than 25 feet tall at full maturity) at least 10 feet away from the lines. These are general guidelines and will not apply in all circumstances.

Contact the Company at 261-8027 before considering planting near transmission towers or easements. The Company will remove any trees or shrubs that are not compatible with transmission lines.

## 145 AUTOMATIC RECLOSING EQUIPMENT

The Company has equipment installed at its substations, which provide rapid opening and automatic reclosing of its distribution circuits to clear temporary faults that occur on the circuits. It is the responsibility of the customer to provide adequate protection for all electrical apparatus of the customer that might be adversely affected by the Company's reclosing equipment.

## 146 CONTINUITY OF POWER

The Company will use due diligence in providing a regular and uninterrupted supply of energy; if the supply should be interrupted or fail for any reason, the Company shall not be held liable for damage. The Company shall have no duty to provide advance warning of interruption of supply. It is the customer's responsibility to provide for his need for continuous power. For more information, see IPL's Rules and Regulations for Electric Service, Rule 23 on Page 20.

## 147 SINGLE PHASE PROTECTION

It is the customer's responsibility to provide and maintain protection for multi-phase equipment that may be adversely affected by a loss of phase condition. The Company assumes no liability for equipment damaged by a loss of phase condition.

## 148 PHASE REVERSAL PROTECTION

It is the customer's responsibility to provide and maintain protection for multi-phase equipment that may be adversely affected by a phase reversal condition. The Company assumes no liability for equipment damaged by a phase reversal condition.

## 150 ALTERATIONS - CHANGES IN SIZE OF SERVICE

The Company shall be notified well in advance of any new additions to electrical installations so it will be possible for the Company to take such measures as will enable it to continue rendering adequate service. The connection of additional equipment to existing lines may result in unsatisfactory operation until such time as the Company is able to increase capacity to take care of the added load. Additionally, the Company reserves the right to disconnect service, upon fourteen (14) days written notice if this section is not in compliance.

## 160 NUMBER OF SERVICES

The Company will ordinarily install one service drop or lateral for each service voltage to a building or structure.

In the case of multiple occupancy buildings having no central meter location, the service to each room or tenant must be installed to the established point of service on the building, regardless of the existence of area separation (fire) walls.

A weatherhead box or bus duct is required for customers from the overhead system under the following conditions:

1. More than four (4) connections per phase to the service drop or;
2. Larger than 1600 Amperes of Service.

See Drawings GB7-070 & GB7-080 for a sample weatherhead box.

## 162 MASTER METERING

Master metering is generally prohibited on all new multi-unit buildings. Electricity delivered to a new building containing units which are separately rented, leased or owned shall be sold on the basis of individual meter measurements for each occupancy unit, except for electricity used in hotels, motels, and other similar transient lodging.

Service applicants who believe individual metering will present a hardship for their project must contact the company during the design of the project for review of their individual case. The service applicant shall establish that costs of purchasing and installing separate meters in such building exceed the long range benefits of individual metering of units before an exemption may be granted. See Indiana Administrative Code 170, Standards of Service for additional information.

## 165 MAXIMUM SIZE SECONDARY OVERCURRENT DEVICE

The maximum size service overcurrent device is determined by the service voltage, but in no case shall it exceed 3000 amperes.

## 170 FIRE PUMP INSTALLATIONS

All fire pump installations must be referred to the Engineering Department for approval, prior to installation.

## 180 FOREIGN ATTACHMENTS

Radio or television antennas, floodlights, signs, wires, cables, or other attachments shall not be connected to or installed on the Company's pad mount transformers, metal clad switchgear, poles, crossarms, structures, or other facilities. Antennas, floodlights, signs, etc. shall not be installed so they can fall on the Company's lines or structures. Attaching advertising signs to utility poles is prohibited by City Ordinance and Company rules and regulations.

Obtaining an attachment permit in some cases may be permitted for power conductors and communications cables on some company poles. The company's engineer will calculate loading, clearances, and space requirements in accordance with the National Electrical Safety Code. The application fees and costs for engineering and upgrading the company's facilities are to be borne by the applicant.

## 181 EASEMENT ENCROACHMENTS

As a general rule, encroachments on Company easements are prohibited. For additional information, please call the Real Estate Department shown on the "Where To Obtain Information" (page iii). Structures such as buildings, swimming pools, garages, etc. shall not be permitted inside the company easements.

## 182 CUSTOMER GROUNDS

Conductors from the customer's grounds, grounding grids, isolated equipment to be grounded, or grounding systems shall not be permitted to enter or to be attached to any Company transformer, riser pole, pedestal, or any other of the Company's facilities.

Exception 1: Where a communication company in the vicinity of or on a pole, pedestal, switchgear, transformer, or other Company facility, their grounding shall be permitted to be connected to the Company's system neutral or grounding system.

Exception 2. Where a customer is served through vault installed transformers.

## 183 GROUNDED SERVICE CONDUCTOR

Where a grounded service is provided, the grounded service conductor (normally the neutral) shall be taken to each service disconnecting means grounded (neutral) terminal or bus. Reference the National Electrical Safety Code Rule 092 and Indiana Electrical Code Section 250.24(C).

## 185 SERVICE DEMAND

Demand as used in this book, shall mean the kilowatt demand as determined by the Company.

## 190 AREA SEPARATION (FIRE) WALLS

If a structure is required to have an area separation (fire) wall for more than one point of service, a note similar to the following shall be placed on a drawing, or a letter in the case of an existing building, by the architect or engineer and the drawing or letter shall have his/her seal affixed.

> This is an area separation wall, as required by the State of Indiana,
> for the purpose of multiple points of electrical service.

A letter from the authority having jurisdiction i.e.: the local electrical inspector, to allow multiple services would be acceptable, in lieu of the note.

## PART II: SECONDARY SERVICE - OTHER THAN NETWORKED SERVICE AREA

### 200 SECONDARY VOLTAGES AVAILABLE

After determination as to whether electricity will be supplied from overhead or underground in accordance with the Company's underground policy and any legal requirement, the Company will specify one of the following secondary service voltages:

(a) Single phase, 120 volt, two wire

(b) Single phase, 120/240 volt, three wire

(c) Single phase, 120/208 volt, three wire

(d) Three phase, 120/240 volt, four wire, delta

(e) Three phase, 120/208 volt, four wire, wye

(f) Three phase, 277/480 volt, four wire, wye

Service at other voltages will be supplied only in special cases at the discretion of the Company.

### 205 REQUIREMENTS FOR SERVICE

Shop drawings for all free standing switchgear shall be approved (in writing at customer request) by the Engineering and Metering Departments in advance of any firm commitments on each individual installation. This will assure proper spacing and bracing of bus bars, and proper switch metering sequence. (See Section 550 for Meter Department Approval.)

A. Single phase, 120 volt, two wire, may be provided for service, not to exceed 30 amperes.

B. Single phase, 120/240 volt, three wire, may be provided for loads not to exceed 170 kW demand.

The largest individual service disconnecting means shall not exceed 800 amperes.

Where the service disconnecting means does not consist of a single main switch or circuit breaker, the combined rating of the individual switches or circuit breakers shall not exceed 800 amperes.

The largest individual single phase motor for this service shall be 5 HP unless investigation by the Engineering Department indicates that a larger size is permissible.

Residential services are not designed nor intended to provide service for unconventional or high demand equipment such as "on demand" water heaters or other intermittent, high demand or frequently started devices such as welders, large motors, etc. See Section 210 for more information as well as the Company Rates.

EXCEPTION: A single family dwelling unit disconnecting means shall not exceed 1600 amperes.

C. Single phase, 120/208 volt, three wire, may be provided for services not to exceed 125 amperes or 200 amperes for dwelling units.

Residential services are not designed nor intended to provide service for unconventional or high demand equipment such as "on demand" water heaters or other intermittent, high demand or frequently started devices such as welders, large motors, etc. See Section 210 for more information as well as the Company Rates.

All services or feeders over 125 (200 for dwelling units) ampere capacity shall be three phase, four wire, and the load balanced as nearly equal as possible on the three phases. The difference in amperes between any two phases at the customer's peak load shall not be greater than 20%.

Exception, 400 ampere services or feeders are permitted if they are in listed single phase meter centers for multifamily dwellings.

D. Single phase, 480 volt, three wire, may be provided for services not to exceed 125 amperes for dwelling units in the Central Business District with prior approval of the Meter and Engineering Departments. This voltage is only available where the building is served with 480Y/277 volts and dwelling units will be installed. Single phase, 480 volt, three wire is not available for any other purpose.

All services or feeders over 125 ampere capacity shall be three phase, four wire, and the load balanced as nearly equal as possible on the three phases. The difference in amperes between any two phases at the customer's peak load shall not be greater than 20%.

E. Three phase, 120/240 volt, four wire, delta, may be provided for loads of 75 kW demand or less of single phase load, with appliances and/or motors requiring three phase service with ratings exceeding the limitations for single phase service or with a single motor of 5 HP or more. The phase having the higher voltage to ground shall not be used for any single phase load.

The largest individual service disconnecting means shall not exceed 3000 amperes.

Where a switchgear is used and the service disconnecting means does not consist of a single main switch or circuit breaker, the combined rating of the individual switches or circuit breakers shall be permitted to exceed 3000 amperes. However, the switchgear shall not exceed 3000 amperes.

The largest individual three phase motor for this service shall be 25 HP unless investigation by the Engineering Department indicates that a larger size is permissible.

Three phase, 120/240 volt, four wire, delta service is not normally available in underground service areas.

## 225 COVERING, ENCLOSING AND PAINTING OF PAD MOUNTED EQUIPMENT

Pad mounted equipment (transformers, switchgear, metering, etc.) shall not be covered or enclosed with any material unless permission is specifically given in writing by the Indianapolis Power & Light Company Standards, Code Compliance & Quality Control Department.

Fencing may be installed if sufficient clearance is provided around the equipment for switching with the use of "hot sticks". This requires 10 feet of clearance on the sides where switching is performed. Additionally, 3 feet of clearance is required on the remaining sides and back for ventilation and personnel access (for clearance to building walls, see drawings GB7-020, GB7-030, and GB7-040). The top of the enclosure shall remain open for adequate ventilation. These requirements prohibit the installation of hollow decorative "rocks" or other enclosures that prohibit the free flow of air around the equipment. Any enclosure or fencing shall not have a locked gate nor be over 6 feet in height.

Painting of the equipment is permitted if a solid color is used and the decals are not painted over; however, black or essentially black paint is not permitted due to excessive equipment heating. Any other deviation such as a design shall be approved in writing by the Indianapolis Power & Light Company Standards, Code Compliance & Quality Control Department before proceeding. The customer will be responsible for maintaining the paint condition after custom paint is applied including mitigating rust and graffiti. Additionally, if the equipment is replaced for any reason, the Company will not be responsible for repainting the equipment.

## 230 METERING ENCLOSURE GROUNDING BEHIND SERVICE DISCONNECTING MEANS

Metering enclosures and fittings shall be grounded in accordance with Article 250 of the Indiana Electrical Code.

Where Indiana Electrical Code Section 250.142(B) Exception 2 is not permitted or used, a grounding conductor shall be run from the service grounding electrode conductor and grounded service conductor at the service equipment to the meter fitting or meter cabinet. This grounding conductor shall be copper and sized and installed in accordance with the Indiana Electrical Code requirements for grounding electrode conductors.

## 235 480 V COLD SEQUENCE METER

An individual lockable main service disconnecting means with overcurrent protection shall be installed ahead of and within five feet of each 480 volt meter. No tap shall be permitted on the line side of the main service. This applies to all 480 volt services, 225 ampere and smaller, and metered feeders. See Section 555 for accessing locked and/or sealed equipment.

## PART III: SECONDARY SERVICE
## DOWNTOWN UNDERGROUND NETWORKED SERVICE AREAS

### 300 SECONDARY VOLTAGES AVAILABLE

In the areas served from the underground networked secondary distribution system, all services shall be installed underground and the Company will specify one of the following secondary voltages:

(a) Single phase, 120 volt, two wire

(b) Three phase, 120/208 volt, four wire, wye

(c) Three phase, 277/480 volt, four wire, wye

(d) Single phase, 277/480 volt, three wire

(e) Single phase, 120/208 volt, three wire

### 305 REQUIREMENTS FOR SERVICE

A Single phase, 120 volt, two wire, may be provided only for service to traffic signals and other public safety equipment, not to exceed 30 amperes. At the Company's discretion, this may be made available for other uses.

B Single phase, 120/208 volt, three wire, may be provided for services not to exceed 125 amperes or 200 amperes for dwelling units.

Residential services are not designed nor intended to provide service for unconventional or high demand equipment such as "on demand" water heaters or other intermittent, high demand or frequently started devices such as welders, large motors, etc. See Section 210 for more information as well as the Company Rates.

All services or feeders over 125 (200 for dwelling units) ampere capacity shall be three phase, four wire, and the load balanced as nearly equal as possible on the three phases. The difference in amperes between any two phases at the customer's peak load shall not be greater than 20%.

C Single phase, 277/480 volt, three wire service is available at the option of the Company where three phase, 277/480 volt, four wire, wye is existing. The maximum size individual service, which may be installed, is 125 amperes. Where multiple services of this type are installed, all services or feeders shall have the load balanced as equal as possible on all three phases. An individual disconnecting means shall be installed on the line side of the meter fitting and within sight from the meter fitting (the definition of "within sight" is in the Indiana Electrical Code). The difference in amperes between any two phases at the customer's peak load shall not be greater than 20%.

D Three phase, 120/208 volt, four wire, wye service is available in practically the entire networked service area. The largest individual service disconnecting means shall not exceed 3000 amperes.

## 310 SPECIAL REQUIREMENTS

A. An individual main switch shall be installed ahead of each meter. No tap shall be allowed on the line side of the main switch. This applies to all services and metered feeders. Individual services larger than 1200 ampere shall be free standing switchgear with the metering compartment an integral part of the switchgear.

B. All service entrance conductors shall be copper and no smaller than #4 AWG. For 200 ampere and larger services, the only acceptable wire sizes are 3/0, 350 kcmil and 500 kcmil.

C. Specific requirements for the short circuit capacity at each location shall be obtained from the Engineering Department.

D. Shop drawings for all free standing switchgear shall be approved in writing by the Major Underground Distribution Projects Engineering Division in advance of any firm commitments on each individual installation. This will assure proper spacing and bracing of bus bars, adequate auxiliary enclosure for cable limiters when required and proper switch metering sequence. (See Section 550 for Meter Department Approval.)

E. Space for a transformer vault on public or private property adjoining the main service entrance equipment generally will be required when the demand is 500 kVA and larger.

F. At the cable entrance to a customer's premises the contractor shall install a metal junction box (sized and located by the Major Underground Distribution Projects Engineering Division) to enclose the service cables and splices. The Major Underground Distribution Projects Engineering Division will designate the location at which the service conductors shall be installed. (See GB6-070)

G. Customer-owned underground secondary service cables, 3/0, 350 kcmil, and 500 kcmil entering Company manholes or transformer vaults, shall be protected with cable limiters. These cable limiters shall be provided and installed by the Company at the point of connection to Company lines.

H. In the event more than two cables per phase are required, cable limiters shall be installed at both ends of the service cables. The customer shall provide and install cable limiters on all ungrounded conductors at the line side of the service switch.

I. Normally, the Company will own the cable to the property line and the customer will own the cable from the property line to the service.

Section 310, cont.

J. All temporary construction services shall be approved and located by the Major Underground Distribution Projects Engineering Division prior to installation by the electrical contractor.

K. Meter enclosures and fittings shall be grounded in accordance with Article 250 of the Indiana Electrical Code.

Metering enclosure grounding: Where Indiana Electrical Code Section 250.142(B) Exception 2 is not permitted or used, a grounding conductor shall be run from the service grounding electrode conductor and grounded service conductor at the service equipment to the meter fitting or meter cabinet. This grounding conductor shall be copper and sized and installed in accordance with the Indiana Electrical Code requirements for grounding electrode conductors.

L. The customer shall install fire-stop conduit seals that will limit the flow of smoke, fire, hazardous gases and water from outside and inside the service lateral conduits in accordance with the Indiana Electrical Code Sections 230.8 and 300.5(G).

## PART IV: PRIMARY SERVICE - OTHER THAN NETWORKED SERVICE AREA

### 400 GENERAL REQUIREMENTS

A. Primary voltage service is available for qualifying loads and requires approval by the Company in the design stages of the project. Engineering shall be consulted early in the planning stage to make certain all requirements are met.

Although voltage is held to within five percent of nominal for lower voltage service, primary voltage service may vary eight percent or more from nominal. See Indiana Administrative Code 170, Standards of Service for additional information.

B. Service may be available at the Company's option at voltage levels of 4.16 kV, 13.2 kV, 34.5 kV, 138 kV or 345 kV depending upon the load to be served and the location on the system.

Where 4.16kV is to be supplied: All switchgear, cable, potheads, and the like shall be rated for 15kV class grounded wye insulation. Utilization equipment, such as transformers, shall be dual primary voltage 13.2kV x 4.16kV. Any surge protection shall be for the supplied voltage and replaced when the service is upgraded to 13.2kV.

C. Primary voltage services at 4.16 kV and 13.2 kV shall have a grade accessible, customer controlled, disconnecting device and overcurrent protection near the service point (see 400G below), unless all facilities to the buildings are under the exclusive control and ownership of the Company. Primary voltage services at 34.5 kV, 138 kV or 345 kV shall require special consideration.

D. The service overcurrent protection shall be sized to coordinate with the Company system and the system neutral shall be taken to the customer's service equipment.

# PART V: METERING

## 500 GENERAL INFORMATION

Information on metering problems, available equipment, and general requirements can be obtained at the Meter Department Office, 3600 North Arlington Avenue, (317) 261-5262 or (317) 261-5227.

100, 200, and 320 ampere single phase self-contained meter fittings shall be furnished and installed by the customer. The company will continue to furnish 2, 3, and 4 gang meter fittings for multi-family homes. The customer is responsible for maintaining his wire and cable connections, see Section 555A.

Meter cabinets and three phase meter fittings will be furnished by the Company for installation by the customer. The Company retains ownership of these meter fittings and the cabinets. However, the customer is responsible for maintaining his wire and cable connections, see Section 555A.

If a meter cabinet and/or instrument transformers have deteriorated to a condition that the installation is no longer safe or metering correctly, it is the responsibility of the customer to have the metering equipment replaced by a qualified electrician. The replacement metering equipment will be provided to the electrician by the Company. However, all Company meters will always be installed and maintained by the Company. Any failed condition will be determined by a representative from the Company's Meter Department and if the cabinet has failed inspection due to damage, charges may apply for the replacement parts.

The two categories of metering installations are residential and general service. The term general service includes both commercial and industrial applications of electric service. Following is a brief outline of the principal Company requirements relative to the metering installation for each of these categories. At the end of Part VII are drawings depicting typical installations covered in this manual.

## 505 EQUIPMENT FOR RESIDENTIAL INSTALLATION

### A. 100 - 200 AMPERE OVERHEAD OR UNDERGROUND

The Company will provide a 200 ampere meter fitting available in 2, 3, and 4 gang. See section 500 for single gang 200 ampere meter fittings.

### B. 400 AMPERE OVERHEAD OR UNDERGROUND

See section 500 for 320 ampere meter fittings.

### C. 600-1600 AMPERE UNDERGROUND

The Company will furnish a single enclosure containing current transformers and a meter fitting.

### D. LOCATION

Metering facilities are to be located on the outside of the structure in an accessible location agreeable to the Company. See drawing GB5-010 for acceptable meter locations.

A clear working space of at least 4 feet shall be maintained in front of the metering facilities. Safe and ready access to this area shall be provided.

## 555 MAINTAINING METER SECURITY

A. It is unlawful to break seals and/or locks on Company meters or to remove meters without notifying the Service Connection Division on telephone number 261-8133.

Cooperation will be extended at the request of the customer for normal maintenance or under emergency conditions. Request shall be made to the Service Connection Division for these cases.

B. The Company reserves the right to seal all meters, metering equipment and fused or unfused switches, together with any enclosures, gutters or raceways containing unmetered circuits, whether any of such equipment has been furnished by the Customer or the Company. This is reflected in the "Rules and Regulations, Section 17.2" that are approved by the Indiana Utility Regulatory Commission.

C. Electricity used on construction services must be metered. Services that have been disconnected by the Company are to be restored only by the Company. Unmetered circuits and jumpered meter fittings will be disconnected and an energy diversion charge and pro-rated billing will be assessed.

## 557 INSTALLATION OF TRANSIENT VOLTAGE SURGE SUPPRESSOR AND OTHER DEVICES AT METER SOCKETS

The installation of any meter adapter surge suppressor or any similar interface devices between the meter and meter socket is not acceptable and prohibited. If any surge suppressor or other similar interface device such as a generator connection, is found installed between the meter and meter fitting, Company field personnel will remove the device.

## 560 GENERAL REQUIREMENTS

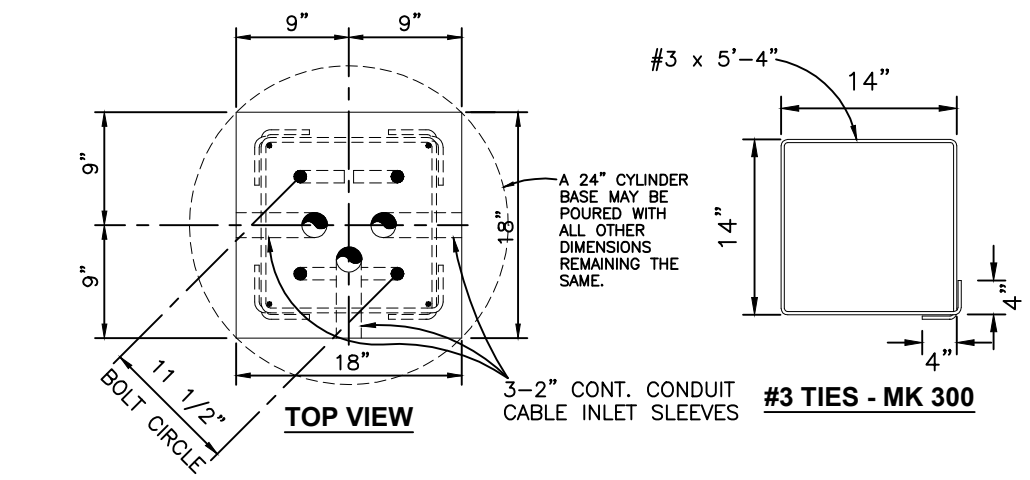
A. A signed sketch shall be provided for all current transformer rated metering installations by customer's electrical contractor. The sketch shall include location of metering and all distances from windows, doors, gas meters, stairways, corners of buildings and posts if required.

B. All meter fittings and cabinets are to be surface mounted on the exterior of the building or free standing; flush mounted meter fittings and cabinets are not permitted.

C. To provide adequate clearance for testing and maintenance, a conduit nipple (a minimum of 4 inches long) shall be provided between the meter fitting and any other electrical equipment.

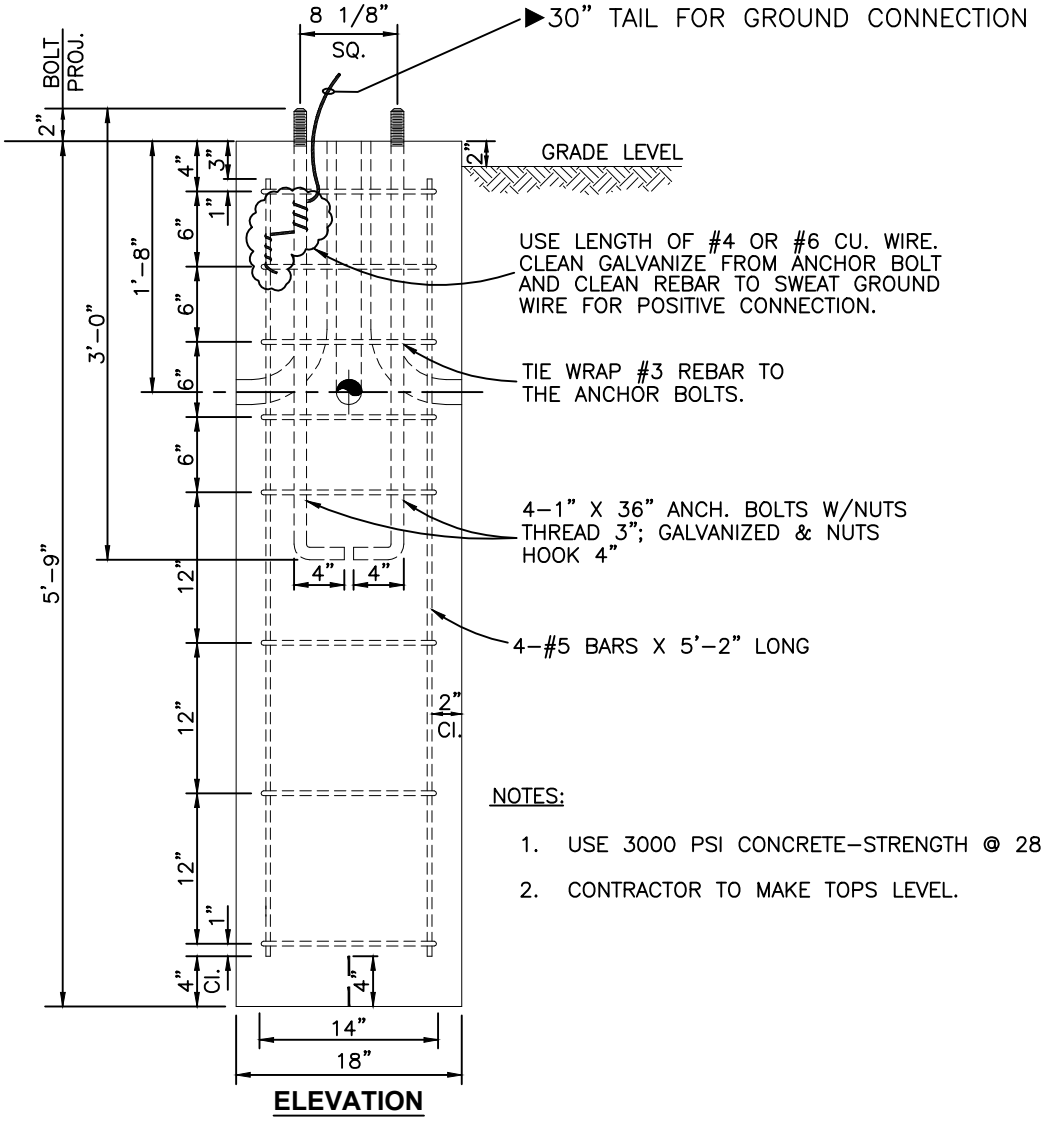
D. Facilities to accommodate socket type meters installed at any location served by two phases and a neutral of the three phase, four wire 120/208 volt, wye system, shall be equipped with a neutral terminal block. Neutral terminal block (fifth terminal) shall be furnished by the Company and installed on the left side of fitting by the electrical contractor. (See Drawing GB1-060.)

E. A maximum of 4 conductors may be connected to the line or load side of the current transformer.




**TOP VIEW**

**#3 TIES - MK 300**




**ELEVATION**

NOTES:

1. USE 3000 PSI CONCRETE–STRENGTH @ 28 DAYS
2. CONTRACTOR TO MAKE TOPS LEVEL.

# CONCRETE BASE INSTALLED BY CONTRACTOR 40 FT. AL. COLUMN

REV 12–22–15

**GB8-100**