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LINE WORK

1. Definitions.

(a) **Temporary Service.** Service for a use that may be of short duration such as a construction site, carnival, or Christmas tree sales lot is considered temporary service. Such service may require a line extension, transformer installation, or other construction work by the Company. Consult the DTE Electric Planner.

(b) **Emergency Service.** Service for a customer whose generation or prime mover has failed is considered emergency service. Such service is offered only in conjunction with a five-year agreement under the provisions of *Standard Contract Rider No. 3* in the *Schedule of Rates*. Any inquiry or situation relating to this condition should be referred to Regulated Marketing-Major Accounts.

2. General Policy.

(a) **Residential Services.** All new, relocated or upgraded residential service connections will be installed as underground residential service laterals at the customer’s expense.

(b) **Installation and Removal.** The Company furnishes temporary or emergency service if capacity is available and if the customer pays for the installation and removal as well as any metering that may be involved. Generally, this service is intended for short-term use only. The charge for installation and removal is in addition to the cost of metered service. In the instance of service involving the disablement of the customer’s generation or prime mover, Regulated Marketing-Major Accounts should be contacted first for application of Standby Service Rider No. 3.

(c) **Temporary Classifications.** The following businesses are normally considered to have a temporary classification; however, if the facilities on the property indicate that the installation should be considered permanent, discuss the situation with the Planning Area Leader.

- Asphalt Plants
- Carnivals, Bandstands
- Bicycle Rental Lots
- Boat Wells
- Christmas Tree Sales Lots
- Construction Trailers
- Fruit Markets, Gospel Tents
- Gravel Pits
- Outdoor Advertising Signs
- Parking Lots, Used Car Lots
- Portable Classrooms, Real Estate Offices
- Refreshment Stands
- Retail Markets without Permanent Buildings
- Temporary Bank Offices

(d) **Cost Estimates.** The Company will provide a cost estimate to the customer for the installation and removal of temporary service equipment after pertinent information is secured such as location, loads, etc. Consult the DTE Electric Planner.
CUSTOMER ATTACHMENTS ON COMPANY POLES

1. Customer-owned wires and equipment that are used in connection with DTE Electric service to that customer are permitted on Company poles to a limited extent as covered by Company specifications. These specifications include attachments of farm customers, certain installations on private property, underground services, and temporary services. Ordinarily, no rental charge is made for such attachments.

2. In general, customer attachments not included in DTE Electric specifications are not permitted on Company poles. Special attachment permits may be granted in exceptional cases. Consult the DTE Electric Planner.
SERVICE DROP ATTACHMENTS

1. Specifications.

(a) When permitted by MPSC rules, DTE Electric is prepared to make overhead service drop attachments to buildings. The Company reserves the right to deny connection to improperly installed service entrance equipment.

(b) A service drop shall be attached only to that part of a building that is of sufficient strength to withstand the tension of the drop.

(c) Contractor furnishes and installs a service bolt or through bolt as a means of attachment. Other acceptable methods of attachment are illustrated in this section.

(d) Service drop attachments will not be made to steel poles, pipes, structural steel shapes, wood timbers, etc., which depend on the ground for support. Such construction may require that the Company set a wood pole 3 to 5 feet away from these members so that a lineman can connect the customer's wire while working from the wood pole.

(e) Service drop attachments shall not be located on chimneys, firewalls, or parapet walls extending above the roofline.

(f) When a building is not of sufficient height, a service riser will be necessary to achieve the proper service drop clearance.

(g) It is the responsibility of the DTE Electric Planner to determine the necessity of installing a service pole.

(h) Service risers are furnished and installed by the contractor. All service risers and their application must comply with the rules of the inspection authority having jurisdiction and with specifications acceptable to DTE Electric.

(i) When the wall of a building does not have sufficient strength for the tension of the service drop or for support of a riser, the Company will provide the tension requirements of the drop to those responsible for the building construction. This is to insure that an adequate means for dead-ending the service drop will be designed into the structure.

(j) It is the responsibility of the DTE Electric Planner to see that services are installed in accordance with Company guidelines, applicable codes, and local ordinances regarding attachment, location, and clearance.
(k) DTE Electric retains the right to request written permission from the authority having jurisdiction before construction begins on any installation that deviates from specifications found in this manual. Any additional cost of special ordered equipment will be borne by the customer.

2. **Location of Service Attachment Point.**

   (a) The point of attachment of a service drop to a building shall be at a height sufficient to permit proper service drop clearances. (See page 4-4-5.)

   (b) Service drop attachment points shall be not more than 30 feet above grade.

   (c) The service riser shall be located on the outside wall of the building nearest the pole from which the service drop will be installed. *Risers will not be concealed or recessed into building walls.*

   (d) The service attachment point shall be located so that the customer's service entrance conductors can be conveniently tapped without training along the building, over the roof, or climbing on the roof. It may be necessary for a lineman to climb on a roof to attach the drop where a service riser extends through a roof with a wide overhang.

3. **Damage to Customer’s Property.**

   DTE Electric accepts no responsibility for water or other damage caused by service drop attachments, risers, guy back anchors, or other means used to terminate a service drop through or on a roof.

4. **Industrial Service Drop Attachments.**

   (a) Whenever possible, transformer poles for large services will be adjacent to the building served, unless site conditions require otherwise. In such cases, these transformer poles should be located not more than 20 feet from the attachment point on the building.

   (b) Where the service drop cannot be attached directly to the wall, the preferred method for obtaining sufficient clearance is a service riser. When field conditions do not permit the use of a riser, a service pole may be substituted.
5. **Existing Service Drop Attachments.**

When a change is made to existing service entrance equipment, the attachment shall be relocated if necessary to comply with current specifications. These changes will include:

(a) Increase or decrease in service ampacity.
(b) Change from single-phase to three-phase or three-phase to single-phase.
(c) Service entrance conductor or riser replacement.
(d) Meter enclosure replacement.
(e) Relocation of service entrance equipment.
(f) Refastening a service drop that has been pulled off the building.

6. **Service Entrance Wiring.**

The following paragraphs pertain to service entrance wiring attachments to service drops. Service entrance wiring as it relates to service equipment is covered in Section 5.

(a) Service heads and goosenecks in service entrance cables shall be located not less than 6 inches above the point of attachment of the service drop conductors to the building or other structure. [See NEC 230-54(c).]

(b) Bus bar services shall be located not less than 18 inches below the service drop attachment point (30 inches preferred).

(c) Service heads shall be out of reach of porches, windows, doors, etc., and shall be situated to provide a clear path for the service drop. (See pages 4-4-5 and 4-4-6.)

(d) Service wires shall extend not less than 24 inches beyond the service head or its equivalent.

(e) All wiring between the Company's service connection point and the customer's main switch shall be subject to inspection and acceptance by the Company.

(f) Where temporary service is desired for building construction or similar operations, the customer’s wiring shall be brought to a location specified by the Company and shall be connected according to specifications furnished by a DTE Electric Planner.
7. **Multiple Service Entrance Conductors.**

   (a) The number of service entrance conductors per phase, for one or more customers, terminating at a single service point, shall be limited as follows:

<table>
<thead>
<tr>
<th>Customer's Wire Size</th>
<th>Conductors per Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 kcmil</td>
<td>2</td>
</tr>
<tr>
<td>350 kcmil</td>
<td>2</td>
</tr>
<tr>
<td>250 kcmil</td>
<td>3</td>
</tr>
<tr>
<td>4/0 AWG</td>
<td>3</td>
</tr>
<tr>
<td>3/0 AWG and smaller</td>
<td>4 (normally)</td>
</tr>
</tbody>
</table>

   (b) Installations where the number of load conductors per phase is greater than indicated in (a) above shall terminate in a raintight overhead service terminal cabinet as shown on page 4-7-1. The contractor will furnish the cabinet instead of the service entrance heads that would ordinarily be used.

   (c) Bus services provide an ideal service drop termination point and present no connection problem. DTE Electric recommends that bus service heads be used instead of multiple conductor service entrances whenever possible.

8. **Identification of Service Entrance Conductors.**

   In order to assist Lines in the identification of service entrance wires, the following identification will be used as a standard throughout the Company territory. Where a wye-connected system serves a building, Lines will ignore any “P” markings.
SERVICE DROP CLEARANCES

THE ILLUSTRATIONS BELOW SHOW MINIMUM VERTICAL CLEARANCES FOR SECONDARY SERVICE DROPS. THE HEIGHT OF THE SERVICE WEATHERHEAD OR BUSBAR SERVICE HEAD IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

RESIDENTIAL SERVICE DROPS (SEE NOTE 4)

COMMERCIAL SERVICE DROPS

NOTES:
1. ALL DIMENSIONS ARE MINIMUM, MEASURED TO THE LOWEST POINT OF THE SERVICE DROP OR DRIP LOOP, AND MAY BE USED ONLY WHEN APPLICABLE. SPECIFIC CONDITIONS OTHER THAN THOSE SHOWN ABOVE MAY REQUIRE INCREASED CLEARANCES.
   EXAMPLES: RAILROAD TRACKS, BOAT LAUNCH AREAS, WATER CROSSINGS, ETC.
2. A 22 FOOT CLEARANCE IS REQUIRED FOR ALL HIGHWAY CROSSINGS, WHETHER AT THE CENTER OR EDGE OF THE HIGHWAY. HIGHWAYS ARE DEFINED AS: THOSE STREETS OR ROADS WITH STATE OR FEDERAL MARKINGS, OR MAJOR COUNTY ROADS AND CITY STREETS WHICH ARE DIRECT TRAFFIC ROUTES.
3. FOR THE PURPOSE OF THIS RULE, TRUCKS ARE DEFINED AS THOSE VEHICLES EXCEEDING 8 FEET IN HEIGHT. AREAS NOT SUBJECT TO TRUCK TRAFFIC ARE AREAS WHERE TRUCK TRAFFIC IS NOT NORMALLY ENCOUNTERED OR NOT REASONABLY ANTICIPATED.
4. ALL NEW, RELOCATED OR UPGRADED RESIDENTIAL SERVICE DROPS WILL BE INSTALLED AS UNDERGROUND RESIDENTIAL SERVICE-LATERALS AT THE CUSTOMERS EXPENSE.

THE DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
RESIDENTIAL SERVICES
TERMINATION POINTS & CLEARANCES (SEE NOTE 8)

NOTES:
1. SERVICE DROPS ARE NOT ALLOWED OVER WINDOW WALLS OR DOORS AND MUST MAINTAIN A 10' MINIMUM CLEARANCE OVER PATIOS, PORCHES AND FINAL GRADE.
2. ATTACHMENT POINTS MUST PROVIDE THE PROPER SERVICE DROP CLEARANCES OVER DRIVEWAYS, PORCHES, ETC. GARAGE ROOFS WITH A SLOPE OF 4" IN 12" REQUIRE 3' CLEARANCE. ROOFS WITH LESS SLOPE REQUIRE 8' CLEARANCE.
3. SHADED AREAS ARE MINIMUM CLEARANCES PERMITTED AROUND WINDOWS. NO DTE ELECTRIC SERVICE DROPS WILL BE ALLOWED WITHIN THESE AREAS.
4. SERVICE DROPS CROSSING WINDOWS OR NEAR PORCHES MUST BE OUT OF REACH. A CLEARANCE OF 3' MINIMUM TO THE SIDE AND BELOW AND 6" ABOVE IS REQUIRED.
5. FOR LOW RESIDENCES, AN APPROVED RISER MAY BE REQUIRED. CONSULT DTE ELECTRIC PLANNER.
6. METER CLEARANCES AND HEIGHT MUST BE MAINTAINED ABOVE DECKS. SEE 5-3-1 AND 5-3-2 FOR METER INSTALLATION, HEIGHT AND CLEARANCE REQUIREMENTS.
7. ALL NEW, RELOCATED OR UPGRADED RESIDENTIAL SERVICE DROPS WILL BE INSTALLED AS UNDERGROUND RESIDENTIAL SERVICE-LATERALS AT THE CUSTOMERS EXPENSE.

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
NAILED SERVICE BOLT
FRAME CONSTRUCTION (SEE NOTE 6)
MAXIMUM LOAD 1230 LBS.

SERVICE BOLT FURNISHED AND INSTALLED
BY CONTRACTOR BEFORE FINISHED WALLS ARE
STARTED USING NAILS PROVIDED OR EQUIVALENT
SCREWS.

THREAD PORTION OF SERVICE BOLTS
MUST EXTEND A MINIMUM OF 2" FROM
FACE OF BUILDING.

SERVICE DROP HOOK AND SQUARE RETAINING NUT
FURNISHED AND INSTALLED BY DTE.

SERVICE DROP, FURNISHED AND INSTALLED
BY DTE O.H. LINES DEPARTMENT.

REFERENCE: OVERHEAD LINES
CONSTRUCTION STANDARDS
DETAIL 910

NOTES:
1. WHENEVER POSSIBLE, SERVICE BOLTS SHALL BE
   INSTALLED ON THE FIRST STUD FROM THE CORNER OF
   THE BUILDING NEAREST TO THE DTE POLE FROM
   WHICH THE SERVICE DROP SHALL BE RUN.

2. RESIDENTIAL SERVICE DROPS MAY TERMINATE AT A
   MINIMUM OF TEN FEET TO GRADE (12' PREFERRED),
   PROVIDED THAT PROPER VERTICAL CLEARANCES OVER
   MINIMUM OF TEN FEET TO GRADE (12' PREFERRED),
   RESIDENTIAL SERVICE DROPS MAY TERMINATE AT A
   MORE THAN 30 FEET ABOVE FINISHED GRADE.

3. SERVICE DROP ATTACHMENT POINTS SHALL NOT BE
   MORE THAN 30 FEET ABOVE FINISHED GRADE.

4. CONTRACTOR SHALL REQUEST A DTE ELECTRIC
   PLANNER TO SPECIFY LOCATION OF ALL SERVICE
   ENTRANCE REPLACEMENT.

5. SERVICE ENTRANCE CABLE, RIGID METAL
   CONDUIT, IMC, RIGID NONMETALLIC
   CONDUIT SUITABLE FOR LOCATION OR
   ELECTRICAL METALLIC TUBING FURNISHED
   AND INSTALLED BY THE CONTRACTOR.

6. ALL NEW, RELOCATED OR UPGRADED
   RESIDENTIAL SERVICE DROPS WILL BE
   INSTALLED AS UNDERGROUND RESIDENTIAL
   SERVICE-LATERALS AT THE CUSTOMERS EXPENSE.

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY
OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
SERVICE THROUGH BOLT

LOAD LIMITS:
1230 LBS. IN LINE WITH BOLT
300 LBS. PARALLEL TO WALL

STEEL FRAME WITH BLOCK WALL

LOAD LIMITS:
725 LBS. IN LINE WITH BOLT
200 LBS. PARALLEL TO WALL

GIRDER ON BLOCK WALL

LOAD LIMITS:
725 LBS. IN LINE WITH BOLT
200 LBS. PARALLEL TO WALL

WITH BACKUP MEMBER

LOAD LIMITS:
725 LBS. IN LINE WITH BOLT
200 LBS. PARALLEL TO WALL

THROUGH BOLT IN CEMENT BLOCK, CINDER BLOCK OR SOLID MASONRY

LEGEND:
1. 5/8" GALVANIZED THROUGH BOLT FURNISHED AND INSTALLED BY CONTRACTOR.
2. SQUARE PLATE WASHER FURNISHED BY DECO AND INSTALLED BY CONTRACTOR.
3. EYENUT FURNISHED AND INSTALLED BY DETROIT EDISON COMPANY.
4. STANDARD CHANNEL BACK-UP MEMBER FURNISHED AND INSTALLED BY CONTRACTOR.
5. 3/8" TOGGLE OR ANCHOR BOLT FURNISHED AND INSTALLED BY CONTRACTOR.
6. SERVICE ENTRANCE CAP FURNISHED AND INSTALLED BY CONTRACTOR.

NOTES:
A. CONTRACTOR SHALL REQUEST SERVICE PLANNING TO SPECIFY LOCATION OF ALL SERVICE THROUGH BOLTS THAT CANNOT BE INSTALLED IN REASONABLE ACCORDANCE WITH THIS DRAWING.
B. SERVICE THROUGH BOLTS SHALL BE LOCATED AS NEAR AS POSSIBLE TO DECO POLE FROM WHICH THE SERVICE DROP WILL BE RUN AND SITUATED TO PROVIDE A CLEAR PATH BETWEEN THE SERVICE BOLT AND THE POLE.
C. SEE PAGE 4-4-5 FOR CLEARANCES.
D. SERVICE THROUGH BOLT SHOULD NOT BE LOCATED IN A PARAPET WALL OR LOCATED NEAR A BUILDING CORNER, DOOR OR WINDOW OPENINGS.
E. CONTRACTOR SHALL IDENTIFY SERVICE ENTRANCE CONDUCTORS PER INSTRUCTIONS CONTAINED ON PAGES 5-1-2 AND 5-1-3 SIM-ESIG UNDER GENERAL RULES AND REGULATIONS.
F. SERVICE HEAD SHALL EXTEND A MINIMUM OF 6" ABOVE THROUGH BOLT.

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
MAINTENANCE OF ATTACHMENTS WITH SERVICE INSULATORS

WOOD SIDING
DETAIL 925

DRILL 5/16" HOLE THRU SIDING ONLY
WOOD SHEATHING

WOODBOLT

HEAD OF 5/8"
LARGE PLATE WASHER

PLATE WASHER
NUT & EYENUT

TOGGLE BOLT
THROUGH BOLT SERVICE INSULATOR
DETAIL 925D
DETAIL 925E

REPLACE EXISTING 2" SERVICE INSULATOR WITH 4" SERVICE INSULATOR IN STUD
- DRILL 1/4" LEADER HOLE

WOOD SIDING

BRICK VENEER
WOOD SHEATHING
DETAIL 925F

Cement block
MAXIMUM LOAD 440 LBS.
REPLACE WITH DETAIL 920B

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
MAINTENANCE OF ATTACHMENTS WITH RACKS OR SPOOLS

NOTE:
1. FOR 8" RACKS, USE 3 BOLTS TO ATTACH RACK.
2. MAINTAIN WITH ATTACHMENTS FOR MULTIPLEX SERVICE.

FRAME DETAIL 926

MAXIMUM LOAD 1320 LBS.

SOLID MASONRY DETAIL 926B

MAXIMUM LOAD 1320 LBS.

CONCRETE OR CINDER BLOCK DETAIL 926D

MAXIMUM LOAD 1000 LBS.

HOLLOW TILE DETAIL 926E

MAXIMUM LOAD 1000 LBS.

SPOOL ATTACHMENT DETAIL 926F

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
SERVICE RISERS

1. Scope.

(a) This specification covers the requirements for providing an adequate service attachment height using a service riser or support on low buildings.

(b) The material and workmanship of all service riser assemblies must comply with specifications acceptable to DTE Electric.


(a) Risers shall be zinc-coated steel (hot dip galvanized). Only one-piece risers are acceptable. Rigid metal or intermediate metal conduit riser assemblies 10 feet or less in length will be fabricated using one continuous piece of conduit.

(b) Standard weight pipe, rigid conduit, angle, channel, or other members capable of supporting the intended maximum drop tensions may be used for the riser.

(c) Flanges, brackets, or other means of fastening the riser to the building shall be designed to adequately support the load imposed on the riser.

(d) Provisions shall be made at the top of the riser for an uninsulated point of attachment for the service drop.

3. Fastening Methods.

(a) The service riser must be securely fastened to the building so as to withstand the tension of the service drop.

(b) Galvanized square head 1/2 inch or 5/8 inch bolts, nuts, and washers, as required, are furnished by the contractor for fastening service risers to cement block, concrete, or solid masonry walls.
ROOF SUPPORTED SERVICE RISERS WITH ROOF OVERHANG
FOR 1 1/4'', 1 1/2'', 2'' AND 2 1/2'' RIGID CONDUIT

<table>
<thead>
<tr>
<th>STEEL CONDUIT SIZE</th>
<th>MAX UNSUPPORTED LENGTH ''A''</th>
<th>MINIMUM LENGTH ''B''</th>
<th>MAXIMUM LOADING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/4''</td>
<td>21''</td>
<td>---</td>
<td>440 LBS.</td>
</tr>
<tr>
<td>1 1/2''</td>
<td>21''</td>
<td>30''</td>
<td>660 LBS.</td>
</tr>
<tr>
<td>2''</td>
<td>30''</td>
<td>30''</td>
<td>750 LBS.</td>
</tr>
<tr>
<td>2 1/2''</td>
<td>42''</td>
<td>30''</td>
<td>750 LBS.</td>
</tr>
</tbody>
</table>

NOTES:
1. SERVICE ENTRANCE CAP FURNISHED AND INSTALLED BY CONTRACTOR.
2. CONTRACTOR TO ALLOW 24’’ OF WIRE BEYOND SERVICE CAP FOR ATTACHING TO DROP.
3. CONTRACTOR TO ALLOW 24’’ OF WIRE BEYOND SERVICE CAP FOR ATTACHING TO DROP.
4. CONTRACTOR SHALL IDENTIFY SERVICE ENTRANCE CONDUCTORS PER INSTRUCTIONS CONTAINED ON PAGES 5-1-2 AND 5-1-3.
5. METAL ROOF SUPPORT PLATE UL LISTED FOR USE AS A CONDUIT SUPPORT FURNISHED AND INSTALLED BY CONTRACTOR.
6. PLATE MAY BE INSTALLED ON TOP OF SHINGLES PROVIDED UPPER SHINGLES ARE LIFTED TO LAP OVER PLATE. HOWEVER, FOR MAXIMUM STRENGTH ATTACH ROOF SUPPORT PLATE TO ROOF BEFORE SHINGLING. SHINGLES SHALL BE OVER THE PLATE AND SEALED WITH ROOFING COMPOUND.
7. USE FULL THREAD PAN HEAD SCREWS AS FURNISHED FOR ATTACHING PLATE TO ROOF.
8. RIGID OR IMC STEEL CONDUIT FURNISHED AND INSTALLED BY CONTRACTOR.
9. 2'' X 4'' BACKING NAILED SECURELY BETWEEN STUDS; FURNISHED AND INSTALLED BY CONTRACTOR.
10. USE 1/8'' STEEL PLATE FOR CONCRETE BLOCK CONSTRUCTION.
11. SOLID RING CONDUIT SUPPORT AND BOLT ASSEMBLY FURNISHED AND INSTALLED BY CONTRACTOR.
12. METER ENCLOSURE FURNISHED AND INSTALLED BY CONTRACTOR.
13. REFER TO DRAWING NOTE FOR CONDUIT EXCEEDING 10'.
14. IF LENGTH IS 10' OR LESS USE ONE PIECE GALVANIZED RIGID OR IMC STEEL CONDUIT.
15. NEW, RELOCATED, OR UPGRADED RESIDENTIAL SERVICE CONNECTIONS WILL BE INSTALLED AS UNDERGROUND RESIDENTIAL SERVICE-LATERALS AT THE CUSTOMERS EXPENSE.

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
RIGID STEEL CONDUIT OFFSET RISER ASSEMBLY
1 1/4'' AND 2'' CONDUIT SIZE

MAXIMUM LOAD - 640 LBS. (SEE NOTE 5)

1. PLATE MAY BE INSTALLED ON TOP OF SHINGLES PROVIDED UPPER SHINGLES ARE LIFTED TO LAP OVER PLATE.

2. FOR MAXIMUM STRENGTH, ATTACH ROOF SUPPORT PLATE TO ROOF BEFORE SHINGLING. SHINGLES SHALL BE LAPPED OVER PLATE AND SEALED WITH ROOFING COMPOUND AS REQUIRED.

3. USE SCREWS FURNISHED TO ATTACH PLATE. NAILS, ORDINARY SCREWS, ETC., WILL NOT BE ACCEPTED AS THE FASTENING MEANS.

4. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO SECURE SUPPORT PLATE TO ROOF ACCORDING TO SPECIFICATIONS AND FURTHER TO PROVIDE A PERMANENT WEATHER SEAL BETWEEN THE ROOF AND THE SUPPORT PLATE.

5. ALL NEW, RELOCATED, OR UPGRADED RESIDENTIAL SERVICE CONNECTIONS WILL BE INSTALLED AS UNDERGROUND RESIDENTIAL SERVICE-LATERALS AT THE CUSTOMERS EXPENSE.

SEE O.H.L. CONSTRUCTION STANDARDS DETAIL 914

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
RIGID STEEL CONDUIT RISER ASSEMBLY
2'' AND 2 1/2'' CONDUIT SIZE
SOLID WALL CONSTRUCTION (SEE NOTE 8)

<table>
<thead>
<tr>
<th>STEEL CONDUIT SIZE</th>
<th>MAX UNSUPPORTED LENGTH ''A''</th>
<th>MINIMUM LENGTH ''B''</th>
<th>MAXIMUM LOADING</th>
</tr>
</thead>
<tbody>
<tr>
<td>2''</td>
<td>30''</td>
<td>30''</td>
<td>725 LBS.</td>
</tr>
<tr>
<td>2 1/2''</td>
<td>42''</td>
<td>30''</td>
<td>725 LBS.</td>
</tr>
</tbody>
</table>

NOTES:

1. CONDUIT, CONDUIT SUPPORTS, SERVICE CAP, 1/2'' THRU BOLTS AND CHANNEL BACKUP MEMBER SUPPLIED BY CONTRACTOR.
2. THE DTE ELECTRIC PLANNER SHALL DETERMINE THE NEED, LOCATION AND TYPE OF SERVICE RISER INSTALLATION.
4. SEE PAGE 4-4-5 FOR CLEARANCES.
5. SERVICE RISER SHOULD NOT BE ATTACHED TO A PARAPET WALL OR LOCATED NEAR BUILDING CORNER, DOOR OR WINDOW OPENING.
6. CONTRACTOR SHALL IDENTIFY SERVICE ENTRANCE CONDUCTORS PER INSTRUCTIONS CONTAINED ON PAGE 4-4-4.
7. IF LENGTH IS 10' OR LESS USE ONE PIECE GALVANIZED RIGID OR IMC STEEL CONDUIT. REFER TO DRAWING NOTE FOR CONDUIT EXCEEDING 10'.
8. ALL NEW, RELOCATED, OR UPGRADED RESIDENTIAL SERVICE CONNECTIONS WILL BE INSTALLED AS UNDERGROUND RESIDENTIAL SERVICE-LATERALS AT THE CUSTOMERS EXPENSE.

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
RIGID STEEL CONDUIT RISER ASSEMBLY
3'', 3 1/2'' & 4'' CONDUIT SIZE
SOLID WALL CONSTRUCTION
MAXIMUM LOAD 750 LBS.
REFERENCE: O.H. DETAIL 912A

REFER TO SECTION 5 FOR METER EQUIPMENT MOUNTING SPECIFICATIONS

NOTES:
1. CONTRACTOR SHALL IDENTIFY SERVICE ENTRANCE CONDUCTORS
   PER INSTRUCTIONS CONTAINED ON PAGE 4-4-4.
2. CT CABINET AND METER ENCLOSURE SHALL BE GROUPED
   TOGETHER EITHER INSIDE OR OUTSIDE THE BUILDING.

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY
OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
ANGLE SERVICE RISER
REFERENCE: O.H. DETAIL 918

MAXIMUM ALLOWABLE LOAD

<table>
<thead>
<tr>
<th>Hole</th>
<th>Maximum Load</th>
<th>Unsupported Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Hole</td>
<td>1100 LBS</td>
<td>50''</td>
</tr>
<tr>
<td>Center Hole</td>
<td>1225 LBS</td>
<td>45''</td>
</tr>
<tr>
<td>Bottom Hole</td>
<td>1375 LBS</td>
<td>40''</td>
</tr>
</tbody>
</table>

NOTES:

1. DTE PLANNER SHALL DETERMINE THE NEED, LOCATION AND TYPE OF SERVICE RISER INSTALLATION.


3. SEE PAGE 4-4-5 FOR CLEARANCES.

4. THE RISER WILL NOT BE ATTACHED TO A PARAPET WALL OR LOCATED NEAR BUILDING CORNER, DOOR OR WINDOW OPENINGS.

5. CONTRACTOR SHALL IDENTIFY SERVICE ENTRANCE CONDUCTORS PER INSTRUCTIONS CONTAINED ON PAGE 4-4-4.

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.

LEGEND:

A. 5/8'' X 1-3/4'' GALVANIZED BOLT, NUT AND EYENUT FURNISHED AND INSTALLED BY DTE.

B. SERVICE ENTRANCE CONDUIT (RIGID OR IMC) FURNISHED AND INSTALLED BY CONTRACTOR.

C. BUS SERVICE ENTRANCE FURNISHED AND INSTALLED BY CONTRACTOR.

D. SERVICE RISER FURNISHED AND INSTALLED BY CONTRACTOR. SEE DETAIL ON PAGE 4-4-42.

E. BACK PLATE FURNISHED AND INSTALLED BY CONTRACTOR. BACK PLATE WILL BE INSTALLED ON SIDE OF RISER OPPOSITE SERVICE DROP.

F. 5/8'' GALVANIZED BOLT, NUT AND WASHERS FURNISHED AND INSTALLED BY CONTRACTOR. 12'' FOR 8'' WALL, 16'' FOR 12'' WALL AND 20'' FOR 16'' WALL.
ANGLE SERVICE RISER ASSEMBLY

REFERENCE: O.H.L. DETAIL 918

BILL OF MATERIAL

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3'' X 3'' X 3/8'' X 7'-0'' ANGLE (CUT &amp; WELD)</td>
</tr>
<tr>
<td>2</td>
<td>2 1/2'' X 1/4'' X 37'' BAR</td>
</tr>
<tr>
<td>3</td>
<td>3/4'' X 1 1/2'' X 1/4'' X 37'' BAR</td>
</tr>
</tbody>
</table>

NOTES:

1. THE DESIGN CONSISTS OF A STEEL ANGLE CUT AND WELDED INTO RISER AND FITTED WITH STEEL MOUNTING PLATES AS SHOWN IN DRAWING AND BILL OF MATERIAL.

2. ALL PARTS SHALL BE GALVANIZED IN ACCORDANCE WITH THE AMERICAN SOCIETY FOR TESTING MATERIALS SPECIFICATIONS FOR ZINC (HOT GALVANIZED) COATINGS ON STRUCTURAL STEEL SHAPES.

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
OFFSET DOUBLE ANGLE SERVICE RISER
REFERENCE: O.H. DETAIL 918A & 921

MAXIMUM ALLOWABLE LOAD
2200 LBS WITH ADEQUATE WALL SUPPORT
BACK BRACING REQUIRED TO REDUCE TENSION ON INADEQUATE WALL OR WHEN LINE TENSION EXCEEDS 2200 LBS

LEGEND:
A. DOUBLE RISER BRIDGE FURNISHED AND INSTALLED BY CONTRACTOR.
B. ANGLE SERVICE RISERS FURNISHED AND INSTALLED BY CONTRACTOR.
C. 5/8” X 1 3/4” BOLT, NUT AND EYENUT FURNISHED AND INSTALLED BY DTE.
D. TWO 5/8” X 3 1/2” GALVANIZED BOLTS, NUTS AND 4 WASHERS FURNISHED AND INSTALLED BY CONTRACTOR.
E. BUS SERVICE ENTRANCE FURNISHED AND INSTALLED BY CONTRACTOR.
F. 5/8” GALVANIZED BOLTS, NUTS AND WASHERS FURNISHED AND INSTALLED BY CONTRACTOR. 12” BOLTS FOR 8” WALL, 16” BOLTS FOR 12” WALL AND 20” BOLTS FOR 16” WALL.
G. BACK PLATE FURNISHED AND INSTALLED BY CONTRACTOR.

NOTES:
1. THE DTE PLANNER SHALL DETERMINE THE NEED, LOCATION AND TYPE OF SERVICE RISER INSTALLATION.
3. SEE PAGE 4-4-5 FOR CLEARANCES.
4. THE RISER WILL NOT BE ATTACHED TO A PARAPET WALL OR LOCATED NEAR BUILDING CORNER, DOOR OR WINDOW OPENINGS.
5. CONTRACTOR SHALL IDENTIFY SERVICE ENTRANCE CONDUCTORS PER INSTRUCTIONS CONTAINED ON PAGE 4-4-4.

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
OFFSET ANGLE SERVICE RISER

BILL OF MATERIAL

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3'' X 3'' X 3/8'' X 7'-3'' ANGLE (CUT &amp; WELD)</td>
</tr>
<tr>
<td>2</td>
<td>3'' X 3/8'' X 4'' BAR</td>
</tr>
<tr>
<td>3</td>
<td>2 1/2'' X 1/4'' X 37'' BAR</td>
</tr>
<tr>
<td>4</td>
<td>3'' X 3'' X 3/8'' X 54'' ANGLE</td>
</tr>
</tbody>
</table>

RISER ASSEMBLY
GALVANIZE AFTER FABRICATION

NOTES:
1. THE DESIGN CONSISTS OF A STEEL ANGLE CUT AND WELDED INTO AN OFFSET RISER AND FITTED WITH STEEL MOUNTING PLATES FOR SINGLE USERS, AND A BRIDGE FOR DOUBLE USERS AS SHOWN IN DRAWING AND BILL OF MATERIAL.
2. ALL PARTS SHALL BE GALVANIZED IN ACCORDANCE WITH THE AMERICAN SOCIETY FOR TESTING MATERIALS SPECIFICATIONS FOR ZINC (HOT GALVANIZED) COATINGS ON STRUCTURAL STEEL SHAPES.

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
STRAIGHT I BEAM SERVICE RISER
REFERENCE: O.H. DETAIL 919 & 921

<table>
<thead>
<tr>
<th>MAXIMUM ALLOWABLE LOAD WITHOUT BACK GUY</th>
<th>A.</th>
<th>B.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOP HOLE 1100 LBS 70' UNSUPPORTED LENGTH</td>
<td>1100 LBS 70'</td>
<td>1100 LBS 70'</td>
</tr>
<tr>
<td>CENTER HOLE 1225 LBS 65' UNSUPPORTED LENGTH</td>
<td>1225 LBS 65'</td>
<td>1225 LBS 65'</td>
</tr>
<tr>
<td>BOTTOM HOLE 1375 LBS 60' UNSUPPORTED LENGTH</td>
<td>1375 LBS 60'</td>
<td>1375 LBS 60'</td>
</tr>
</tbody>
</table>

NOTES:
1. THE DTE PLANNER SHALL DETERMINE THE NEED, LOCATION AND TYPE OF SERVICE RISER INSTALLATION.
3. SEE PAGE 4-4-5 FOR CLEARANCES.
4. THE RISER WILL NOT BE ATTACHED TO A PARAPET WALL OR LOCATED NEAR BUILDING CORNER, DOOR OR WINDOW OPENINGS.
5. CONTRACTOR SHALL IDENTIFY SERVICE ENTRANCE CONDUCTORS PER INSTRUCTIONS CONTAINED ON PAGE 4-4-4.

NOTE:
DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
OVERHEAD SERVICE

STRAIGHT I BEAM SERVICE RISER DETAILS

REFERENCE - OHL MANUAL DETAIL 919

BILL OF MATERIAL

<table>
<thead>
<tr>
<th>ITEM</th>
<th>REQ'D</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>5'' 1 - 9' 3''</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>1 3/8'' X 3/8'' X 4 1/2'' BAR</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>4'' E - 4' 3''</td>
</tr>
</tbody>
</table>

* ALL HOLES DRILLED TO 3/4''

NOTE:
ALL PARTS SHALL BE GALVANIZED IN ACCORDANCE WITH THE AMERICAN SOCIETY FOR TESTING MATERIALS SPECIFICATIONS FOR ZINC (HOT GALVANIZED) COATINGS ON STRUCTURAL STEEL SHAPES.
ASTM DESIGNATION - A123

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
OFFSET I BEAM SERVICE RISER
REFERENCE: O.H. DETAIL 919 & 921

MAXIMUM ALLOWABLE LOAD WITHOUT BACK GUY

<table>
<thead>
<tr>
<th>Hole</th>
<th>Load (lbs)</th>
<th>Unsupported Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top</td>
<td>1100</td>
<td>70''</td>
</tr>
<tr>
<td>Center</td>
<td>1225</td>
<td>65''</td>
</tr>
<tr>
<td>Bottom</td>
<td>1375</td>
<td>60''</td>
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</table>

LEGEND:
A. BACK GUY FURNISHED AND INSTALLED BY CONTRACTOR. (WHEN TENSION EXCEEDS LOADS SHOWN, A BACK GUY IN LINE WITH THE SERVICE DROP WILL BE REQUIRED.)
B. 5/8'' X 6'' EYEBOLT FURNISHED AND INSTALLED BY DTE.
C. 5/8'' GALVANIZED BOLTS, NUTS AND WASHERS FURNISHED AND INSTALLED BY CONTRACTOR.
D. I-BEAM RISER AND BACKUP MEMBER FURNISHED AND INSTALLED BY CONTRACTOR. SEE DETAIL DRAWING ON PAGE 4-4-44.

NOTES:
1. THE DTE PLANNER SHALL DETERMINE THE NEED, LOCATION AND TYPE OF SERVICE RISER INSTALLATION.
3. SEE PAGE 4-4-5 FOR CLEARANCES.
4. THE RISER WILL NOT BE ATTACHED TO A PARAPET WALL OR LOCATED NEAR BUILDING CORNER, DOOR OR WINDOW OPENINGS.
5. CONTRACTOR SHALL IDENTIFY SERVICE ENTRANCE CONDUCTORS PER INSTRUCTIONS CONTAINED ON PAGE 4-4-4.

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
OFFSET I BEAM SERVICE RISER DETAILS
REFERENCE - OHM MANUAL DETAIL 919

BILL OF MATERIAL

<table>
<thead>
<tr>
<th>ITEM</th>
<th>REQ'D</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>5' 1 - 9' 6'</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>1 3/8&quot; X 3/8&quot; X 4 1/2&quot; BAR</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>4' E - 4' 3'</td>
</tr>
</tbody>
</table>

* ALL HOLES DRILLED TO 3/4"

NOTE:
ALL PARTS SHALL BE GALVANIZED IN ACCORDANCE WITH THE AMERICAN SOCIETY FOR TESTING MATERIALS SPECIFICATIONS FOR ZINC (HOT GALVANIZED) COATINGS ON STRUCTURAL STEEL SHAPES. ASTM DESIGNATION - A123

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
SERVICE DROP SUPPORT POLE
BUS SERVICE ENTRANCE THRU WALL

REFERENCE: O.H. DETAIL 917 & 921

NOTES:
1. THE DTE PLANNER SHALL DETERMINE THE NEED, LOCATION AND TYPE OF
SERVICE RISER INSTALLATION.
2. OBTAINING SUFFICIENT SERVICE ATTACHMENT HEIGHT IS BEST ACCOMPLISHED
BY INSTALLING ADEQUATE SERVICE RISERS. SERVICE POLES SHOULD BE USED
ONLY WHEN THE USE OF A SERVICE RISER IS NOT POSSIBLE.
3. SEE PAGE 4-4-5 FOR CLEARANCES.
4. CONTRACTOR SHALL IDENTIFY SERVICE ENTRANCE CONDUCTORS PER INSTRUCTIONS
CONTAINED ON PAGE 4-4-4.

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY
OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
SERVICE DROP SUPPORT POLE
BUS SERVICE ENTRANCE THRU ROOF

REFERENCE: O.H. DETAIL 917 & 921

NOTES:
1. THE DTE PLANNER SHALL DETERMINE THE NEED, LOCATION AND TYPE OF SERVICE RISER INSTALLATION.
2. OBTAINING SUFFICIENT SERVICE ATTACHMENT HEIGHT IS BEST ACCOMPLISHED BY INSTALLING ADEQUATE SERVICE RISERS. SERVICE POLES SHOULD BE USED ONLY WHEN THE USE OF A SERVICE RISER IS NOT POSSIBLE.
3. SEE PAGE 4-4-5 FOR CLEARANCES.
4. CONTRACTOR SHALL IDENTIFY SERVICE ENTRANCE CONDUCTORS PER INSTRUCTIONS CONTAINED ON PAGE 4-4-4.

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
OVERHEAD SERVICE TERMINAL CABINET

NOTES:
1. THIS CABINET SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR WHEN THE NUMBER OF LOAD CONDUCTORS PER PHASE AT ONE SERVICE POINT EXCEED THE FOLLOWING:

<table>
<thead>
<tr>
<th>CUSTOMER'S WIRE SIZE</th>
<th>NO. OF S.E. CONDUCTORS PER PHASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/0</td>
<td>4 (NORMALLY)</td>
</tr>
<tr>
<td>250 kcmil OR 4/0</td>
<td>3</td>
</tr>
<tr>
<td>500 kcmil</td>
<td>2</td>
</tr>
</tbody>
</table>

2. THE CABINET WILL ACCOMMODATE ONE TO FIVE SETS OF CUSTOMER'S LOAD WIRING FROM ONE TO THREE SINGLE OR THREE PHASE DTE SERVICE DROPS.

3. ELECTRICAL GRADE COPPER OR ALUMINUM BUS ARE ACCEPTABLE AS CURRENT CARRYING CONDUCTORS.

4. BRUSHING, BUFFING OR POLISHING PLATED ALUMINUM WILL REMOVE THE PROTECTIVE PLATE, THEREBY CAUSING UNDUE OXIDATION OF THE ALUMINUM.

CUSTOMER'S WIRE SIZE

- MAXIMUM BUS SIZE
  - 1/4" X 4" COPPER OR 1/4" X 5" ALUMINUM

SEALING DEVICE

LOAD LUGS SUPPLIED BY CUSTOMER CONTRACTOR

TAPE 2 LAYERS WITH NO. 33 SCOTCH TAPE OR EQUAL

SIDE VIEW OF CABINET

DETAIL 946

SIZE OF CABINET 34" H X 28" W X 10" D

CUSTOMER'S CONDUITS

FURNISHED BY CUSTOMER

INDENT CONNECTORS AND BOLTS TO BE ORDERED BY SERVICE PLANNER. SEE DETAIL 921 FOR INSTALLATION INSTRUCTIONS.

CUSTOMER'S WIRE SIZE

NO. OF S.E. CONDUCTORS PER PHASE

SERVICE DROP IS CONTINUOUS TO TERMINAL BUS

SERVICE TERMINAL CABINET FOR MIN. SERVICE DROP CLEARANCES REFER TO PAGE 1-11-26 (SIM-ESIG 4-4-5) FOR MAX SERVICE DROP CLEARANCES

DETAIL 946

SERVICE TERMINAL CABINET

OVERHEAD SERVICE

FEB 16

SIM-ESIG

DTE ELECTRIC COMPANY
SERVICE ENTRANCE CABLE (SINGLE PHASE ONLY)
CUSTOMER WIRE SIZE #8 AWG MIN.
DETAL 952

SERVICE MAY BE FROM TRANSFORMER POLE.

U-GUARD FURNISHED AND INSTALLED BY DTE IF INDIVIDUAL CONDUCTORS ARE INSTALLED BY THE CONTRACTOR.

CONTRACTOR SHALL ALLOW ENOUGH WIRE TO REACH TOP OF SECONDARY RACK PLUS 24' FOR TAPPING AND WILL ALSO SEAL END OF CONDUIT IF PRESENT.

SE CABLE, RIGID METAL CONDUIT, IMC, RIGID NONMETALLIC CONDUIT OR EMT SUITABLE FOR THE LOCATION FURNISHED AND INSTALLED BY CONTRACTOR.

METER ENCLOSURE TO SUIT FURNISHED AND INSTALLED BY CONTRACTOR.

METER ENCLOSURE TO SUIT FURNISHED AND INSTALLED BY CONTRACTOR.

WEATHERPROOF SWITCH OR CIRCUIT-BREAKER FURNISHED AND INSTALLED BY CONTRACTOR.

WEATHERPROOF RECEPTACLE FURNISHED AND INSTALLED BY CONTRACTOR MUST COMPLY WITH NEC ARTICLE 305.

N.E.C. APPROVED GROUNDING CONDUCTOR AND ELECTRODE FURNISHED AND INSTALLED BY CONTRACTOR.

CUSTOMER'S LOAD WIRES SHALL NOT BE ATTACHED TO POLE.

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
NOTES:
1. NO LINE OR LOAD CONDUCTORS THRU CENTER OF CT MOUNTING AREA.
2. IF 3Φ 120/240V, POWER LEG ON CENTER BUS, 1Φ USE RIGHT AND LEFT BUSES.
3. SERVICE EQUIPMENT OTHER THAN METER BOX IS MAINTAINED BY CUSTOMER.
4. METER BOX MUST BE INSTALLED 42'' MINIMUM HEIGHT TO CENTER OF METER FACE FROM GRADE AND 6' MAXIMUM TO TOP OF METER BOX.
5. SERVICE DISCONNECT AND RACEWAYS MUST BE RAINPROOF. THE DISCONNECT IS SIZED, FURNISHED AND INSTALLED BY CUSTOMER.
6. A GROUND ROD MUST BE INSTALLED IN COMPLIANCE WITH N.E.C. ARTICLE 250.
7. SUPPORT CHANNEL OR ANGLES SHOULD BE BOLTED TO POST WITH 1/2'' BOLTS AND WASHERS, 3/8'' U BOLTS OR PIPE HANGER CLAMPS DESIGNED FOR THAT USE.
8. ADDRESS MUST BE PERMANENTLY MARKED ON METER ENCLOSURE. USE PERMANENT LETTERS OR STICKERS.
9. DTE POLE WILL BE SET ADJACENT TO BACK SIDE OF SUPPORT CHANNELS AND CENTERED IN REAR OF BOARD TO AVOID CUSTOMER'S POLE FALLING IN DECO LINE POLE HOLE DURING INSTALLATION. NO ATTACHMENTS TO POLE WILL BE ALLOWED TO FACILITATE MAINTENANCE AND REPLACEMENT OF THE POLE IN THE FUTURE.

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
PERMANENT SERVICE NEXT TO LINE POLE

1. **Scope.**
   
   (a) This specification covers the method to be used for the installation of service, meter equipment, and wiring adjacent to a joint use or non-joint use line pole.
   
   (b) All material and workmanship must comply with specifications acceptable to DTE Electric.

2. **Limited Use.** This type of construction will be used *only* where no other meter location is readily available. A DTE Electric Planner shall approve each installation.

3. **Rules and Regulations.** When this equipment is fed from a foreign owned joint use pole, permission of the other utility company may be necessary.

4. **Installation of Equipment.**
   
   (a) The outdoor meter enclosure shall be securely fastened to the support channel using galvanized metal nuts, bolts, and washers.
   
   (b) Equipment on the support assembly must meet minimum requirements for clearance above finished grade and provide adequate access to the adjacent pole (see 4-9-2).
   
   (c) Service disconnect must be located adjacent to meter to provide overcurrent protection for customer-owned underground cable (see 4-9-2).

5. **Connection to Meter Equipment.**
   
   (a) Line conductors to meter enclosure will be furnished and installed by DTE Electric.
   
   (b) Load conductors shall leave the equipment via underground construction. *No overhead load conductors are permitted.*
   
   (c) Service and load connections shall be made in accordance with established practice for the type of meter equipment used.
PERMANENT SERVICE
METER EQUIPMENT NEXT TO LINE POLE

3-WIRE SINGLE PHASE 120/240 VOLT
4-WIRE THREE PHASE 120/240 VOLT
3/0 & 350kcmil SERVICES

ONLY UNDERGROUND CONDUCTORS TO LOAD ARE PERMITTED
FROM THIS TYPE OF INSTALLATION

3'-6" MIN.
6' MAX.
3'-6" MIN.
18"
9'
9'
3' MINIMUM

NOTES:
1. SEE PAGE 3-4-6 FOR PEDESTAL DETAILS.
2. SERVICE DISCONNECT MUST BE GROUPED WITH METER.
3. UNDERGROUND SERVICE CABLE FURNISHED AND INSTALLED BY DTE.
4. SEE 5-3-18 FOR PROPER CONDUIT PLACEMENT AND CONDUCTOR TRAINING

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.

DTE ELECTRIC COMPANY

COMMENTS:

FEB 16

4-9-2
OUTDOOR SERVICE
400 TO 800 AMPS

CUSTOMER CONDUCTORS SUFFICIENT TO REACH DTE SECONDARY RACK PLUS 36''
MAXIMUM CONDUCTOR SIZE 500 KCMIL

3' MIN WATER HEATER CONTROL FURNISHED & INSTALLED BY DTE ELECTRIC

SUPPORT CHANNEL (ANGLE IRON, BEELINE, UNISTRUT) WEATHERPROOF SEAL ON CONDUIT ENTRY

SERVICE DISCONNECT #2 METER ENCLOSURE

METER ENCLOSURE FURNISHED BY CUSTOMER

NOTE #1 & #2 CT CABINET FURNISHED & INSTALLED WATER HEATER CONTROL ON CONDUIT ENTRY

SERVICE DISCONNECT 1-1/4'' METAL CONDUIT 3' MINIMUM BETWEEN CABINETS

3' MINIMUM BETWEEN CABINETS

GROUNDING ELECTRODE CONDUCTOR

3' MINIMUM BETWEEN CABINETS CONCRETE TO STABILIZE POLE

NOTES:
1. NO LINE OR LOAD CONDUCTORS THRU CENTER OF CT MOUNTING AREA.
2. IF 30 120/240V, POWER LEG ON CENTER BUS, 10 USE RIGHT AND LEFT BUSES.
3. SERVICE EQUIPMENT OTHER THAN METER BOX IS MAINTAINED BY CUSTOMER.
4. METER BOX MUST BE INSTALLED 42'' MINIMUM HEIGHT TO CENTER OF METER FACE FROM GRADE AND 6' MAXIMUM TO TOP OF METER BOX.
5. SERVICE DISCONNECT AND RACEWAYS MUST BE RAINTIGHT. THE DISCONNECT IS SIZED, FURNISHED AND INSTALLED BY CUSTOMER.
6. A GROUND ROD MUST BE INSTALLED IN COMPLIANCE WITH N.E.C. ARTICLE 250.
7. SUPPORT CHANNEL OR ANGLES SHOULD BE BOLTED TO POST WITH 1/2'' BOLTS AND WASHERS. 3/8'' U BOLTS OR PIPE HANGER CLAMPS DESIGNED FOR THAT USE.
8. ADDRESS MUST BE PERMANENTLY MARKED ON METER ENCLOSURE. USE PERMANENT LETTERS OR STICKERS.
9. DTE ELECTRIC POLE WILL BE SET ADJACENT TO BACK SIDE OF SUPPORT CHANNELS AND CENTERED IN REAR OF BOARD TO AVOID CUSTOMER'S POLE FALLING IN DTE LINE POLE HOLE DURING INSTALLATION. NO ATTACHMENTS TO POLE WILL BE ALLOWED TO FACILITATE MAINTENANCE AND REPLACEMENT OF THE POLE IN THE FUTURE.

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
FARM SERVICE INSTALLATIONS

1. **Definition.** *Farm Service* is the term applied to a wiring method used on a farm to provide service to the various outlying buildings from a central distribution pole (maypole).

2. **Application and Design.** A farm service is used when the farm buildings are grouped in such a way that service from a centrally located distribution pole provides maximum voltage to each building. In many cases, one of the buildings is the most central point and can serve as the best source of power. DTE Electric recommends that electrical equipment be mounted on a building or support assembly whenever possible to avoid pole replacement problems. *When only small loads are connected in outbuildings and no additional load is planned, farm service is usually not justified since voltage drop is not a factor. In such cases, the barn and other buildings can readily be served with small size wire run overhead or underground from the residence.*

3. **Service Ampacity.** The service should be large enough for present and future connected load. All new services should be a minimum of 200 amperes. Additional capacity can be installed initially for less than the cost of adding or changing the wiring at a later date. Therefore, it is important for the farmer to plan for possible future loads.

4. **Wiring Methods and Materials.** The particular wiring method and the materials to be used will depend upon a number of factors: The size of the load to be served, the size of the farm, possibility of future load growth, location of farm buildings, and whether the wiring is to be overhead or underground.

   (a) **Overhead Wiring.** To provide a well-planned overhead distribution system, a layout should be selected that will cover all of the farmer’s electrical requirements.

   (b) **Underground Wiring.** Farmers wishing to avoid overhead conflicts or clearance problems may want underground distribution to the individual loads.

5. **Standby Generator Connection.** When a standby generator connection is desired on a farm maypole installation, a double-throw weatherproof switch must be used as shown on page 4-12-1.

6. **Replacement of Farm Maypoles.** When it becomes necessary to replace a farm service pole, the customer will be responsible for transferring the customer-owned equipment to a support assembly at that time (see 4-11-3). The DTE Electric Planner will coordinate the work of the customer’s contractor and the DTE Electric crew.
WIRING SPECIFICATION FOR FARM SERVICE INSTALLATIONS

1. Scope.
   
   (a) This specification covers the method used for the installation of service, meter equipment, and wiring for a farm service.

   (b) All material and workmanship must comply with DTE Electric specifications.

2. Mounting Outdoor Metering Equipment.  The outdoor metering equipment shall be securely fastened to a support assembly. Attaching parts for mounting this equipment will be furnished and installed by the customer.

3. Connections to Outdoor Metering Equipment.  Service and load connections shall be installed in accordance with established practice for the type of equipment used.

4. Disconnecting Equipment.  A properly grounded, weatherproof dead front service disconnect, circuit breaker, or double-throw switch is required on all new installations.

5. Water Heater Wiring.  For water heater installation guidelines, see pages 7-23-1, 7-24-3, and 7-24-4. When a water heater is to be supplied by the emergency generator, refer to page 4-12-1 for wiring specifications.

   
   (a) The contractor shall install outdoor metering equipment, cable, conduit, disconnecting equipment, etc., in an approved manner.

   (b) Bolts, screws, nails, and straps used to attach equipment shall be galvanized steel or other non-corroding metal.

   (c) Equipment must meet minimum requirements for clearance above grade and provide adequate access to any nearby DTE Electric poles.

   (d) Customer’s overhead load wires may not be attached to any DTE Electric pole supporting a transformer or primary wires.
OUTDOOR FARM SERVICE
METER EQUIPMENT NEXT TO LINE POLE

3-WIRE SINGLE PHASE 120/240 VOLT
4-WIRE THREE PHASE 120/240 VOLT
3/0 & 350kcmil SERVICES

ONLY UNDERGROUND CONDUCTORS TO LOAD ARE PERMITTED
FROM THIS TYPE OF INSTALLATION

CONDUIT FURNISHED AND INSTALLED BY DTE

METER ENCLOSURE FURNISHED INSTALLED BY CONTRACTOR

SERVICE DISCONNECT REQUIRED AT METER LOCATION

UNDERGROUND CABLE AND PROTECTIVE CONDUIT FURNISHED AND INSTALLED BY CONTRACTOR

GROUND ROD PER N.E.C. ARTICLE 250

NOTES:
1. SEE PAGE 3-4-6 FOR PEDESTAL DETAILS.
2. SERVICE DISCONNECT MUST BE GROUPED WITH METER.
3. UNDERGROUND SERVICE CABLE FURNISHED AND INSTALLED BY DTE.

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
OUTDOOR FARM SERVICE
400 TO 800 AMPS

CUSTOMER CONDUCTORS SUFFICIENT TO REACH DTE SECONDARY RACK PLUS 36’

MAXIMUM CONDUCTOR SIZE
500 KCMIL

3’ MIN WATER HEATER CONTROL FURNISHED & INSTALLED BY DTE ELECTRIC

WEATHERPROOF SEAL ON CONDUIT ENTRY

SUPPORT CHANNEL (ANGLE IRON, BEELINE, UNISTRUT)

WEIGHTED ELECTRODE

6’ MAX

6’ X 6’ POST

5’ MIN

GROUNDING ELECTRODE CONDUCTOR

3’ MINIMUM BETWEEN CABINETS

3’ MINIMUM BETWEEN CABINETS

36’

CONCRETE TO STABILIZE POLE

NOTES:
1. NO LINE OR LOAD CONDUCTORS THRU CENTER OF CT MOUNTING AREA.
2. IF 3Ø 120/240V, POWER LEG ON CENTER BUS. 1Ø USE RIGHT AND LEFT BUSES.
3. SERVICE EQUIPMENT OTHER THAN METER BOX IS MAINTAINED BY CUSTOMER.
4. METER BOX MUST BE INSTALLED 42’ MINIMUM HEIGHT TO CENTER OF METER FACE FROM
GRADE AND 6’ MAXIMUM TO TOP OF METER BOX.
5. SERVICE DISCONNECT AND RACEWAYS MUST BE RAIINTIGHT. THE DISCONNECT IS SIZED,
FURNISHED AND INSTALLED BY CUSTOMER.
6. A GROUND ROD MUST BE INSTALLED IN COMPLIANCE WITH N.E.C. ARTICLE 250.
7. SUPPORT CHANNEL OR ANGLES SHOULD BE BOLTED TO POST WITH 1/2’ BOLTS AND
WASHERS. 3/8’ U BOLTS OR PIPE HANGER CLAMPS DESIGNED FOR THAT USE.
8. ADDRESS MUST BE PERMANENTLY MARKED ON METER ENCLOSURE. USE PERMANENT LETTERS
OR STICKERS.
9. DTE ELECTRIC POLE WILL BE SET ADJACENT TO BACK SIDE OF SUPPORT CHANNELS AND CENTERED
IN REAR OF BOARD TO AVOID CUSTOMER’S POLE FALLING IN DECO LINE POLE HOLE DURING
INSTALLATION. NO ATTACHMENTS TO POLE WILL BE ALLOWED TO FACILITATE MAINTENANCE AND
REPLACEMENT OF THE POLE IN THE FUTURE.

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY
OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
STAND-BY ELECTRIC GENERATOR CONNECTIONS

THE USE OF STAND-BY ELECTRIC GENERATORS INTRODUCES CERTAIN HAZARDS. IF NOT CORRECTLY CONNECTED, A STAND-BY GENERATOR CAN FEED POWER TO DTE LINES. THIS POWER MAY CAUSE PERSONAL INJURY OR EQUIPMENT DAMAGE TO ALL CUSTOMERS SERVED BY THE DTE LINES INVOLVED. TO ELIMINATE THESE HAZARDS, THE GENERATOR MUST BE ISOLATED FROM THE DTE SERVICE LINES. A DOUBLE-THROW SWITCH MUST BE INSTALLED. SEE N.E.C. ARTICLE 702-5 (2014).

Legends:

**N** - 0 VOLTS TO GROUND

**L** - 120 VOLTS TO GROUND

**P** - 208 VOLTS TO GROUND

Double-throw switch to suit

**DTE SUPPLY**

10 3 WIRE

120/240 VOLT A.C.

**APPROVED WATER HEATER METER**

FURNISHED AND INSTALLED BY CONTRACTOR

**REMOTE CONTROL**

FURNISHED AND INSTALLED BY DTE ELECTRIC

**E-72 CONTACTOR AND WEATHERPROOF ENCLOSURE**

FURNISHED BY DTE INSTALLED BY CONTRACTOR

**DOUBLE-THROW SWITCH**

FURNISHED AND INSTALLED BY CONTRACTOR

FROM GENERATOR

**TO WATER HEATER LOAD**

WATER HEATER LOADS

* FROM 7.1 KW

THRU 16.5 KW

*UP TO AND INCLUDING 7 KW

NOTES:

1. A DOUBLE-THROW SWITCH MUST BREAK THE DTE ELECTRIC SUPPLY BEFORE CLOSING TO THE STAND-BY GENERATOR. IF LOCATED OUTDOORS, IT NEED NOT BE FUSIBLE BUT IT MUST BE WEATHERPROOF. A POLE TOP SWITCH IS NOT ACCEPTABLE.

2. SWITCH SIZE WILL BE DETERMINED BY AMPERE CAPACITY OF THE LARGEST CONDUCTOR TO BE CONNECTED. SWITCH MAY CONTROL THE ENTIRE LOAD OR ANY PORTION THEREOF. THE PORTION CONTROLLED WILL BE DETERMINED BY THE LOCATION OF SWITCH, SIZE AND IMPORTANCE OF LOAD AND CAPACITY OF STAND-BY GENERATOR.

3. IF THE SWITCH IS LOCATED AT THE MAYPOLE, ADEQUATE ARRANGEMENTS FOR SPACE AND SUPPORT MUST BE MADE. USE A STUB POLE AND CROSS BARS. (SEE PAGES 4-11-2 AND 4-11-5.)

4. A 3 PHASE GENERATOR MAY HAVE A VERY LIMITED CAPACITY FOR SINGLE PHASE LOADS, SUCH AS LIGHTING AND ELECTRIC HEATING EQUIPMENT. CONSULT MANUFACTURER OF THE GENERATOR FOR LIMITATIONS.

5. METER ENCLOSURES TO BE INSTALLED BEFORE THE DOUBLE-THROW SWITCH.

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
TYPICAL SECONDARY AUTOMATIC THROWOVER SCHEME

LOAD

LOAD

METER CURRENT TRANSFORMERS

120/208 V 30Y
PADMOUNT TRANSFORMER

120/208 V 30Y
PADMOUNT TRANSFORMER

METER CURRENT TRANSFORMERS

NORMALLY OPEN ELECTRICALLY INTERLOCKED TIE SWITCH

50 KVA EMERGENCY GENERATOR

EMERGENCY DISTRIBUTION PANEL

NOTES:
1. METERING MUST BE CONNECTED TO MAINTAIN NORMAL METERING REGARDLESS OF THROWOVER SWITCH OPERATION.
2. RACEWAYS FOR UNMETERED WIRES WILL NOT BE USED FOR METERED WIRES.
3. UNMETERED SWITCH ENCLOSURES AND WIRING TROUGHS MUST BE SEALABLE.
4. THIS ARRANGEMENT CAN ALSO BE USED FOR THE TWO METERS REQUIRED IF THE ACCOUNT IS ON THE COMMERCIAL SPACE CONDITIONING RATE.

PRIMARY FEED TO THE TRANSFORMERS WILL BE FROM ALTERNATE SOURCES. FAILURE OF ONE FEED WILL OPERATE THE AUTOMATIC THROWOVER CONTROL TO FIRST OPEN THE FAILED FEED AND THEN CLOSE THE TIE SWITCH. IF BOTH FEEDS HAVE FAILED, THE AUTOMATIC THROWOVER CONTROL, AFTER A DELAY, WILL START THE GENERATOR AND THROW OVER THE EMERGENCY PANEL FEED. ANY OPERATION WILL TRIP A SIGNAL, USUALLY A LIGHT, SOMETIMES WITH AN AUDIO SIGNAL. CONTROL MUST BE MANUALLY RESET.

DTE ELECTRIC COMPANY ASSUMES NO RESPONSIBILITY FOR INJURY OR DAMAGE ARISING FROM THE USE OF THIS SPECIFICATION DIAGRAM.
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