



## **Transformer Vault Placement and Space Requirements**

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## **Transformer Vault Placement and Space Requirements**

*Whether you're constructing a new building or adding electric load to an existing one, Con Edison strongly encourages you to contact us early in the design process to discuss your transformer vault requirements. This step will help you to avoid unnecessary and costly design changes or delays that may result if these requirements are not incorporated into your final building design.*

*Typical transformer vault space requirements depend on the number of transformers required to supply electricity to your building. In addition, there may be an incremental customer cost to supply service at your requested point of entry. Your final service design will be developed after Con Edison receives your contractor work request and/or load letter with details of your entire building's new or additional electrical requirements.*

*The following information will assist you in planning for your building's electric service configuration and installation of sidewalk transformer vaults.*

Con Edison supplies service to buildings at our standard voltage of 120/208. In addition, 265/460-Volt or high-tension service is available, but may involve an incremental cost to the customer.

When transformer vaults are required to serve the building's load, it is essential that you consider the vault requirements before you proceed with the design of your building. This will mitigate costly design changes for you and/or delays to your project.

All Con Edison transformer vaults require natural ventilation and must have sidewalk gratings, as noted in the enclosed drawings, which identify the space requirements for sidewalk transformer vault installations. The gratings provide ventilation for the transformer as well as a means of entry for Con Edison personnel to maintain, remove, or install equipment.

Con Edison strives to install all transformer vaults in the sidewalk because it is the optimum location not only for installation, but also for maintenance and operation of the equipment. In addition, when a 265/460-Volt installation is installed, the transformer vaults are installed within the sidewalk area but a separate network compartment is required and is installed in a controlled environment within the building.

When transformer vaults are installed within the sidewalk area, many aspects of the operation must be taken into consideration in order to ensure that adequate space and clearance are provided to meet all New York City Department of Transportation (NYCDOT) and Con Edison requirements. The following requirements should be considered in locating the transformer vaults in the sidewalk area around your site:

### **NYCDOT Requirements**

- Doors and gratings in sidewalks are not permitted in front of any entrances, including building, store, and delivery.
- Typically, the NYCDOT requires a clear, unobstructed path (no gratings) between the building and the curb line, and a continuous passage along the sidewalk that has a five-foot solid concrete walking surface.
- If a customer proposes to place vaults in conflict with these NYCDOT requirements, he or she must first get approval from the NYCDOT.

For more information, visit the NYCDOT Web site at [www.nyc.gov/html/dot/pdf/hwyrules.pdf](http://www.nyc.gov/html/dot/pdf/hwyrules.pdf) and refer to section 2-13 m.

### **Con Edison Requirements**

#### **Clear access:**

- No trees, planters or street furniture can be installed near transformer vaults.
- The customer is to remove any trees or planters and relocate street furniture within proposed vault location.
- Trees or planters should be a minimum of 10 feet away; however, this distance may be greater to avoid tree branches growing over vaults.
- Street furniture should be at least five feet from transformer vaults.
- No awnings, building overhangs, or canopies can be installed over transformer vaults.
- Transformer vaults must be located at least five feet from fire hydrants.
- Transformer vaults should not be located in front of or behind bus-stop shelters.

#### **Driveway or loading dock:**

- The customer is to secure NYCDOT approval for transformer vault location.
- The customer must pay incremental Con Edison costs when vaults are located in driveways. These costs will include special grating designs, increased maintenance, etc.
- The customer must agree to provide Con Edison unrestricted, 24-hour access for maintenance and/or routine work. This agreement will be in writing and will be transferable to subsequent building owners.

#### **Future curbs:**

- Transformer vaults should be placed in the sidewalk area, which cannot be affected by a street widening.

#### **Contaminated sites:**

- Con Edison does not install transformer vaults in contaminated soil. If the soil is contaminated, the customer will be required to remediate the condition. When ground water is associated with a contaminated site, a containment structure is required to house the transformer vault.
- If the site is a dry location (no water condition), the customer may over-excavate and replace with clean fill.
- The customer will incur the cost to remediate the site, which would include the design and construction of the containment structure, and/or to over-excavate and replace with clean fill.
- The customer must provide Con Edison with soil borings, environmental study and building plans at the start of design. Con Edison approval on the proposed remediation method is required.

**Flood plain or high-water table:**

- Con Edison will only install a submersible 120/208-Volt designed facility below grade in areas located in the flood plain or that have a water table above the floor of the vaults. Special construction methods, which may result in incremental customer costs, will be required to mitigate water impact on the facilities.
- Con Edison does not install 265/460-Volt transformer installations below grade in the flood plain. This installation is not a submersible design and must be installed at least one foot above the flood plain.

**Other location and design requirements:**

- Network compartments cannot be installed directly below a plaza area.
- No customer piping can be installed within transformer vaults or network compartments.
- Network compartments cannot be installed in the lowest point in the building's basement.

**Developer Agreements**

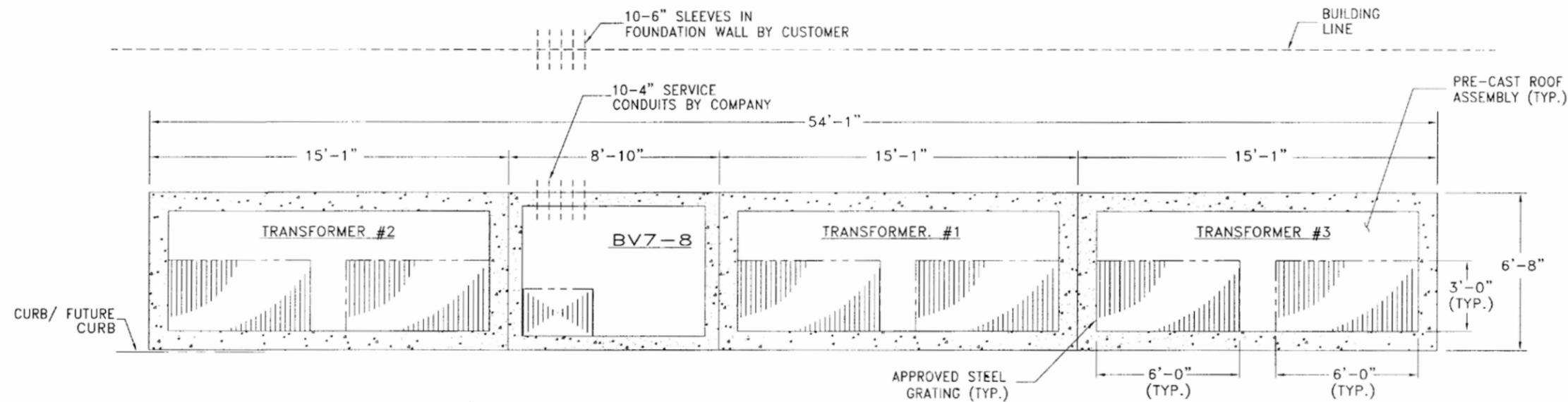
To facilitate your building's construction activities and provide you with full control of your service installation, we encourage you to install the transformer vaults and associated facilities under a developer's agreement. This agreement will allow you to maintain control of the site and all construction logistics, thereby eliminating the utility vaults from your critical path. In addition, under this agreement, we can establish your temporary service through your permanent facilities, thereby eliminating the need for you to have a separate temporary service. Con Edison will reimburse you at standard company prices to perform this work.

We recommend that you review these requirements and drawings to ensure that the planning of your new electric service facilities are incorporated into your new building design with minimal impact on your project.

We look forward to partnering with you on your project and the timely completion of its service facilities.

For additional information, contact the Con Edison project manager for your site at <http://q050-w5.coned.com/es/contacts.pdf>.

SPACE REQUIREMENTS FOR 120/208 VOLT SIDEWALK VAULT ARRANGEMENT WITH 1 SERVICE TAKE-OFF,  
TYPICAL SUPPLY TO A COMMERCIAL OFFICE BUILDING UP TO 150,000 sq/ft @ 8 WATTS PER sq/ft



NOTE:

CUSTOMER TO MAINTAIN THE AREA AROUND VAULTS CLEAR OF ANY FUTURE TREES FOR THE REMOVAL AND INSTALLATION OF EQUIPMENT

TRANSFORMER VAULTS TO BE ACCESSIBLE AT ALL TIMES.

INSTALLATION OF SPECIAL SIDEWALK FINISH IN AND AROUND VAULT AREA OTHER THAN STANDARD CONCRETE SHALL BE CUSTOMER'S RESPONSIBILITY AND IF IT BECOMES NECESSARY AT ANY FUTURE DATE TO REMOVE THE GRATING THE REPLACEMENT OF SAID FINISH IF DISTURBED WILL BE THE RESPONSIBILITY OF THE CUSTOMER

NO AWNINGS, BUILDING OVERHANGS OR CANOPIES TO BE INSTALLED OVER TRANSFORMER VAULTS.

VAULTS TO BE LOCATED AT LEAST 5'-0" FROM FIRE HYDRANTS

GRATINGS IN FRONT OF ENTRANCEWAYS, DRIVEWAY OR LOADING DOCK REQUIRE D.O.T. APPROVAL

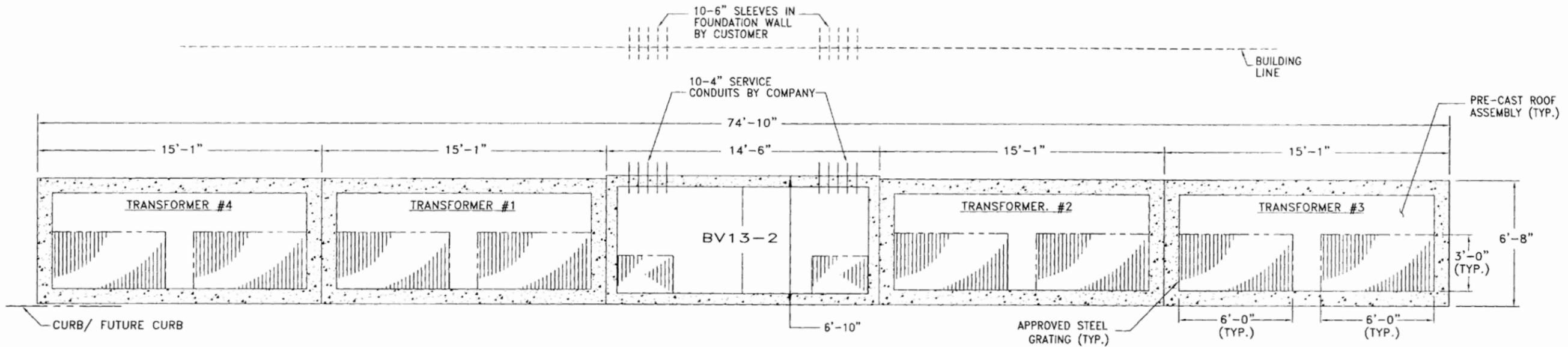
MUST ESTABLISH CURB/ FUTURE CURB LOCATION BASED UPON D.O.T. INFORMATION

REMEDICATION OF CONTAMINATED SITE WILL BE BY THE CUSTOMER AT THEIR EXPENSE

SOIL BORINGS IN THE AREA OF THE VAULTS MUST BE SUBMITTED TO CON EDISON AT START OF DESIGN

CONSOLIDATED EDISON CO.  
OF NEW YORK, INC.

SPACE REQUIREMENTS FOR 120/208 VOLT SIDEWALK VAULT ARRANGEMENT WITH 2 SERVICE TAKE-OFF,  
TYPICAL SUPPLY TO A COMMERCIAL OFFICE BUILDING UP TO 300,000 sq/ft @ 8 WATTS PER sq/ft



**NOTE:**

CUSTOMER TO MAINTAIN THE AREA AROUND VAULTS CLEAR OF ANY FUTURE TREES FOR THE REMOVAL AND INSTALLATION OF EQUIPMENT

TRANSFORMER VAULTS TO BE ACCESSIBLE AT ALL TIMES.

INSTALLATION OF SPECIAL SIDEWALK FINISH IN AND AROUND VAULT AREA OTHER THAN STANDARD CONCRETE SHALL BE CUSTOMER'S RESPONSIBILITY AND IF IT BECOMES NECESSARY AT ANY FUTURE DATE TO REMOVE THE GRATING THE REPLACEMENT OF SAID FINISH IF DISTURBED WILL BE THE RESPONSIBILITY OF THE CUSTOMER

NO AWNINGS, BUILDING OVERHANGS OR CANOPIES TO BE INSTALLED OVER TRANSFORMER VAULTS.

VAULTS TO BE LOCATED AT LEAST 5'-0" FROM FIRE HYDRANTS

GRATINGS IN FRONT OF ENTRANCEWAYS, DRIVEWAY OR LOADING DOCK REQUIRE D.O.T. APPROVAL

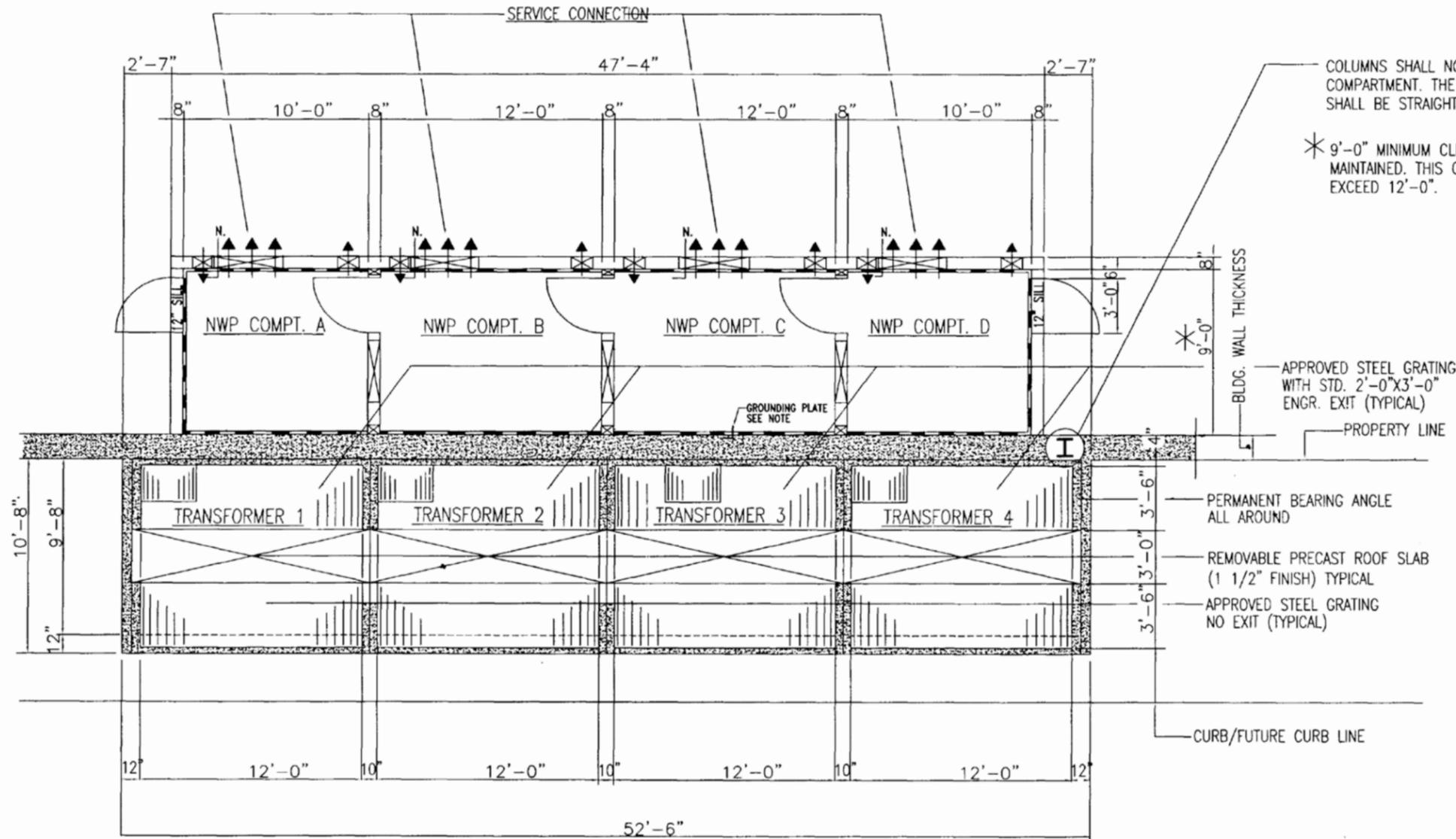
MUST ESTABLISH CURB/ FUTURE CURB LOCATION BASED UPON D.O.T. INFORMATION

REMEDICATION OF CONTAMINATED SITE WILL BE BY THE CUSTOMER AT THEIR EXPENSE

SOIL BORINGS IN THE AREA OF THE VAULTS MUST BE SUBMITTED TO CON EDISON AT START OF DESIGN

CONSOLIDATED EDISON CO.  
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TYPICAL SPACE REQUIREMENT FOR 4-BANK 265/460 VOLT SIDEWALK VAULT ARRANGEMENT  
 TYPICAL SUPPLY TO A COMMERCIAL OFFICE BUILDING UP TO 775,000 sq/ft @ 8 WATTS PER sq/ft



COLUMNS SHALL NOT PENETRATE INTO THE NWP COMPARTMENT. THE FACE OF THE NWP COMPARTMENT SHALL BE STRAIGHT WITH NO PROTRUSIONS.

\* 9'-0" MINIMUM CLEARANCE SHALL BE MAINTAINED. THIS CLEARANCE SHALL NOT EXCEED 12'-0".

NOTE:  
 CUSTOMER TO MAINTAIN THE AREA AROUND VAULTS CLEAR OF ANY FUTURE TREES FOR THE REMOVAL AND INSTALLATION OF EQUIPMENT.  
 TRANSFORMER VAULTS TO BE ACCESSIBLE AT ALL TIMES.

INSTALLATION OF SPECIAL SIDEWALK FINISH IN AND AROUND VAULT AREA OTHER THAN STANDARD CONCRETE SHALL BE CUSTOMER'S RESPONSIBILITY AND IF IT BECOMES NECESSARY AT ANY FUTURE DATE TO REMOVE THE GRATING THE REPLACEMENT OF SAID FINISH IF DISTURBED WILL BE THE RESPONSIBILITY OF THE CUSTOMER.

NO AWNINGS, BUILDING OVERHANGS OR CANOPIES TO BE INSTALLED OVER TRANSFORMER VAULTS.

VAULTS TO BE LOCATED AT LEAST 5'-0" FROM FIRE HYDRANTS.

TRANSFORMER VAULTS & N.W.P. COMPARTMENTS TO BE CLEAR OF ALL FOREIGN PIPING.

CUSTOMER TO REMOVE, RELOCATE, OR REROUTE AT HIS EXPENSE, ALL PIPES, CONDUITS, MATERIALS AND EQUIPMENT FROM SPACE TO BE OCCUPIED BY N.W.P. COMPT'S. AND TRANSFORMER VAULTS OR INTERFERING WITH THEIR CONSTRUCTION.

ALL EXTERIOR DOORS OF N.W.P. COMPARTMENTS TO BE ACCESSIBLE AT ALL TIMES.

THIS INSTALLATION MUST BE BUILT ABOVE FLOOD PLAIN.

GRATINGS IN FRONT OF ENTRANCEWAYS, DRIVEWAY OR LOADING DOCK REQUIRE D.O.T. APPROVAL.

MUST ESTABLISH CURB/FUTURE CURB LOCATION BASED UPON D.O.T. INFORMATION. TRANSFORMER VAULTS WILL BE SET AT OR BEHIND FUTURE CURB.

REMEDICATION OF CONTAMINATED SITE WILL BE BY THE CUSTOMER AT THEIR EXPENSE.

SOIL BORINGS IN THE AREA OF THE VAULTS MUST BE SUBMITTED TO CON EDISON AT START OF DESIGN.

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