Clearance areas shall be free of obstructions such as shrubs, trees and cactus. Final grade within the 10-foot and 72-inch working areas shall be smooth and free of tripping hazards such as curbs and river rock.
### Minimum Clearances

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<tr>
<th>Construction Standard</th>
<th>Pad Usage</th>
<th>Pad Dimension</th>
<th>To Buildings</th>
<th>To Fences</th>
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**Figure 1** - Clearance Dimensions

**Figure 2** - Slope Criteria

**Figure 3** - Fire Wall Height

**Figure 4** - Fire Wall Length

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**Methods**

Minimum Clearance Requirements for Pad - Mounted Transformers
CONSTRUCTION NOTES:
1. THE FINAL GRADE AT THE PAD POSITION SHALL BE COMPACT AND LEVEL TO ENSURE A MAXIMUM 2-DEGREE TILT OF THE PAD, FOR EXAMPLE, A 42-INCH SQUARE PAD SHALL BE LEVEL WITHIN 1-1/2 INCHES FROM SIDE-TO-SIDE AND FRONT-TO-BACK.

2. THE FINAL GRADE WITHIN THE 10-FOOT OPERATING AREA SHALL BE SMOOTH AND STABLE ENOUGH TO PROVIDE A SUITABLE WALKING AND WORKING SURFACE. TRIPPING HAZARDS SUCH AS CURBS OR RIVER ROCK ARE NOT ACCEPTABLE IN THIS LOCATION.

3. WHEN AN ENCLOSURE IS INSTALLED NEAR A SIDEWALK OR CURB, SET THE BOTTOM OF THE PAD AT THE SAME GRADE AS THE TOP OF THE SIDEWALK OR CURB FOR BETTER APPEARANCE AND DRAINAGE. FRONT OF PAD SHOULD BE 12" TO 18" MINIMUM FROM BACK OF SIDEWALK.

4. SLOPE CRITERIA AS SHOWN GIVES RECOMMENDED NORMAL FRONTAL SLOPE LIMITS. CONSIDERATION FOR EXCEPTIONS BY TURNING TRANSFORMERS AWAY FROM FACING THE STREET AND/OR EXCEEDING THESE SLOPE LIMITS REQUIRES SPECIAL DIVISION ENGINEERING AND OPERATIONS APPROVAL, PRIOR TO CONSTRUCTION.

ENGINEERING NOTES:
A. ALL DIMENSIONS ARE MEASURED FROM THE EQUIPMENT PAD EDGE.

B. A MINIMUM 30-FOOT VERTICAL CLEARANCE IS REQUIRED FROM FINISHED GRADE IN APS EQUIPMENT AREAS TO ABOVE SURROUNDING UNOBSTRUCTED STAGING AREAS. THE 30-FOOT VERTICAL CLEARANCE SHALL ALSO APPLY TO CUSTOMERS OVERHEAD STRUCTURES ABOVE BURIED APS ELECTRICAL FACILITIES / RIGHT-OF-WAY. REMOVABLE OVERHEAD STRUCTURES SUCH AS SHADE CANOPIES ARE EXEMPTED.

C. SIDE-BY-SIDE TRANSFORMERS REQUIRE A MINIMUM 24-INCH HORIZONTAL CLEARANCE. DUPLEX TRANSFORMERS SET ON A SINGLE PAD ARE AN EXCEPTION.

D. A MINIMUM 72-INCH X 72-INCH X 72-INCH CLEAR WORKING SPACE SHALL BE PROVIDED FOR HOTSTICK TOOL OPERATION. SEE FIGURE 1. PREFERABLY STREETLIGHT POLES SHOULD BE INSTALLED OUTSIDE OF THIS WORKING SPACE, BUT IF FIELD CONDITIONS PRELUDE THIS, THEN STREET LIGHT POLES MAY BE INSTALLED IN THIS SPACE.

E. AN ELEVATION CHANGE WITHIN THE 10-FOOT FRONTAL OPERATING AREA SHALL NOT EXCEED 24-INCHES IN ANY DIRECTION. GRADE PROFILE CHANGES MUST REMAIN WITHIN THE SHAD ED AREA SHOWN. SEE FIGURE 2.

F. A MINIMUM 36-INCHES HORIZONTAL PAD CLEARANCE IS REQUIRED FROM GAS REGULATORS, GAS METERS AND ELECTRIC METERS.

G. A MINIMUM 60-INCHES HORIZONTAL PAD CLEARANCE IS REQUIRED FROM FIRE HYDRANTS EXCEPT THE CITY OF PHOENIX REQUIRES A 72-INCH CLEARANCE.

H. A MINIMUM 60-INCH WIDE, OPEN AND CONTINUOUSLY UNOBSTRUCTED ACCESS AND EXIT PATH SHALL BE PROVIDED TO FROM ALL OPERATING AREAS OF ANY UNIT(S) TO FACILITATE EASE OF ENTRY AND DEPARTURE.

REFERENCES:
1. NESC 2007, RULE 127.