Transformer Pad, Installation and Grounding, Three-Phase, 75-300 kVA

1. Scope

This standard provides the requirements for the installation of transformer pads for 75 through 300 kVA three-phase padmount transformers. The document includes civil construction and grounding work.

2. Application

This document provides direction to SCL contractors and customers about how to properly install a transformer pad and its grounding for SCL pad mount transformers.

3. Construction Notes

3.1. Four-inch diameter steel pipe barrier posts or eight-inch curbs are required as specified. The barrier shall be a minimum of four feet from the front edge of the transformer to allow door swing. Barriers on the other three sides of the transformer shall be a minimum of three feet from the transformer to allow for adequate passage.

3.2 Conduits shall not extend above the surface of the pad.

3.3 Elbows shall be either rigid galvanized steel or PVC encased in four inches of concrete.

3.4 All metallic conduits shall have a grounding bushing or a bushing plus a ground clamp.

3.5 Ground bus must form a complete rectangle as shown in Figure 1 and when tested, provide a resistance to ground of 25 ohms or less.

3.6 If grounding is under concrete or asphalt, all connections shall be done by exothermic welding (CADWELD or better).

3.7 Three-inch high capital letters, “SCL,” shall be cast in the concrete pad surface, facing the outside, centered between the long side of the conduit opening and the nearest outside edge of the pad.

4. Material List

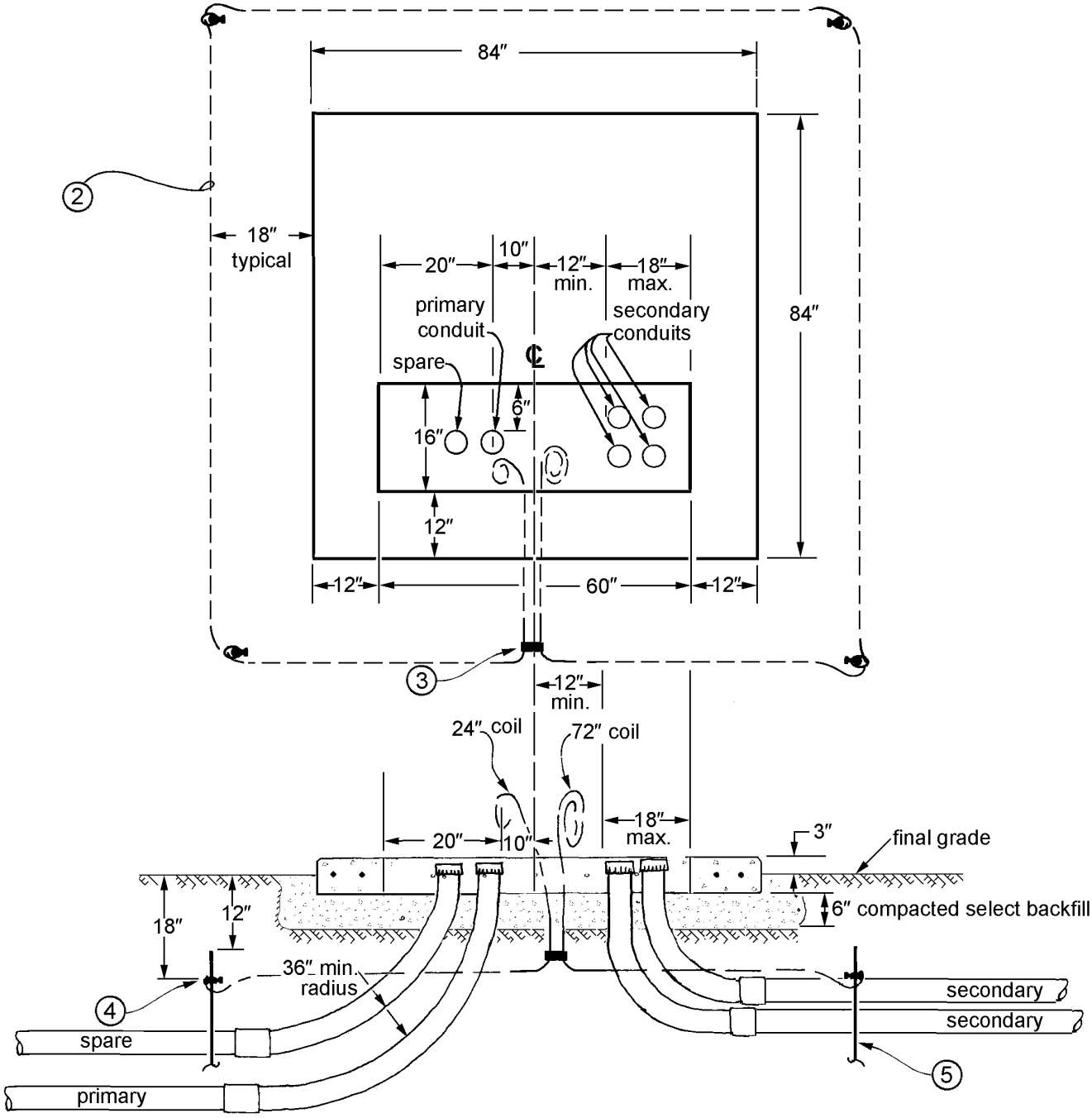
Item	Quantity	Description	Stock No.	Material Standard
1	1	Transformer pad, 84 in by 84 in, utility vault 77-1660	None	None
2	55 ft	Wire, #2 bare, 7-strand, soft-drawn copper	610434	6103.90
3	1	Connector, 2-bolt parallel tap	669379 E	6693.70
4	4	Connector, 5/8 in-#2 ground rod clamp	564012 E	6762.7
5	4	Ground rod, 5/8 in by 8 ft	564238 E	6762.25

5. References

Lu, Curtis; SCL Standards Engineer, subject matter expert and originator (curtis.lu@seattle.gov)

SCL Construction Guideline U10-1.5; “Transformer Pad Construction and Grounding, 150 through 300 kVA, 3Φ” (canceled)

Figure 1


84″
2
18″
typical
20″
10″
12″
min.
18″
max.
primary
conduit
secondary
conduits
84″
spare
6″
16″
12″
12″
60″
12″
3
12″
min.
24″ coil
72″ coil
20″
10″
18″
max.
3″
final grade
6″ compacted select backfill
18″
12″
36″ min.
radius
4
secondary
secondary
spare
primary
5