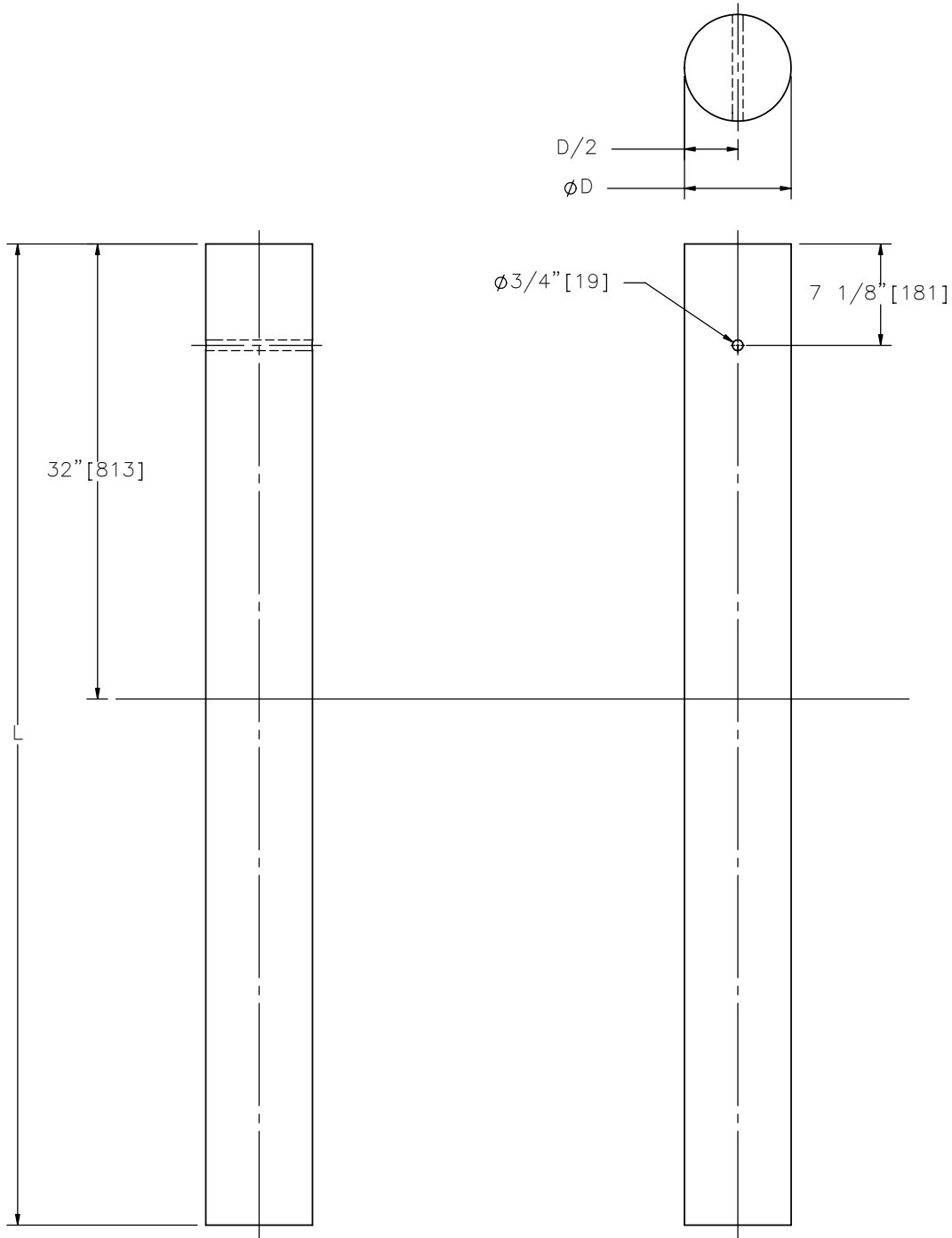


| Designator | Wood Type | L | D |
|------------|----------------------|------------|-------------|
| PDE17a | Douglas Fir | 69" [1753] | 7.25" [184] |
| PDE17b | Ponderosa Pine | 69" [1753] | 8.0" [203] |
| PDE17c | Southern Yellow Pine | 69" [1753] | 7.5" [191] |



ROUND POST FOR MGS GUARDRAIL SYSTEM



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SPECIFICATIONS

The round post for use in MGS guardrail systems (PDE17a-c) shall be manufactured of material that conforms to the guidelines shown below.

General

All posts shall meet the current quality requirements of the American National Standards Institute (ANSI) 05.1, "Wood Poles" except as supplemented herein:

Manufacture:

All posts shall be smooth shaved by machine. No "ringing" of the posts, as caused by improperly adjusted peeling machine, is permitted. All outer and inner bark shall be removed during the shaving process. All knots and knobs shall be trimmed smooth and flush with the surface of the posts. The guardrail posts will be a minimum of 69" [1750] long. The use of peeler cores is prohibited.

Ground-line:

The ground-line, for the purpose of applying these restrictions of ANSI 05.1 that reference the ground-line, shall be defined as being located 36" [914] from the butt end of each post.

Size:

The size of the posts shall be classified based on their diameter at the ground-line and their length and will be species specific. The ground-line diameter shall be specified by diameter in 0.25" [6] breaks. The length shall be specified in 12" [300] breaks. Dimension shall apply to fully seasoned posts. When measured between their extreme ends, the post shall be no shorter than the specified lengths but may be up to 3" [75] longer.

Scars:

Scars are permitted in the middle third as defined in ANSI 05.1 provided that the depth of the trimmed scar is not more than 1" [25].

Shape and Straightness:

All timber posts shall be nominally round in cross section. A straight line drawn from the centerline of the top to the center of the butt of any post shall not deviate from the centerline of the post more than 1.25" [32] at any point. Posts shall be free from reverse bends.

Splits and Shakes:

Splits or ring shakes are not permitted in the top two thirds of the post. Splits not to exceed the diameter in length are permitted in the bottom third of the post. A single shake is permitted in the bottom third, provided it is not wider than one-half the butt diameter.

Decay:

Allowed in knots only.

Holes:

Pin holes 0.0625" [1] or less are not restricted.

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Slope of Grain:

1 in 10.

Compression Wood:

Not allowed, in the outer 1" [25] or if exceeding one-quarter of the radius.

Timber Spacers:

When timber spacers are required, the timber species shall be the same as those furnished for the timber posts. The size and hole location shall be as shown on the plans, with a tolerance of 0.25" [6], Spacers shall be of medium grain, at least four (4) rings per inch on one end, and free from splits, shakes, compression wood or decay in any form. Individual knots, knot clusters or knots in the same cross section of a face are permitted, provided they are sound or firm, and are limited in cumulative width (when measured between lines parallel to the edges) to no more than one-half the width of the face. Wane or the absence of wood is limited to one-third of the face on no more than 10 percent of the lot. Slope of grain deviation is limited to one in six. The material may be rough sawn or surfaced, full size, hit or miss, with a tolerance of 0.25" [6] for all dimensions.

Treatment:

Treating – American Wood-Preservers' Association (AWPA) – Book of Standards (BOS) U1-05 use category system UCS: user specification for treated wood; commodity specification B; Posts; Wood for Highway Construction must be met using the methods outlined in AWPA BOS T1-05 Section 8.2. Each post treated shall have a minimum sapwood depth of 0.75" [19] as determined by examination of the tops and butts of each post. Material that has been air dried or kiln dried shall be inspected for moisture content in accordance with AWPA standard M2 prior to treatment. Tests of representative pieces shall be conducted. The lot shall be considered acceptable when the average moisture content does not exceed 25 percent. Pieces exceeding 29 percent moisture content shall be rejected and removed from the lot.

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Species Specific Criteria

Douglas Fir:

Knot diameter for posts of Douglas Fir shall not exceed 2" [51]. Ring density for the species shall be at least 6 rings-per-inch as measured over a 3" [76] distance. The diameter of the Douglas Fir posts shall be 7.25" [184] at the ground line with a upper limit of 8" [203].

Ponderosa Pine:

Knot diameter for posts of Ponderosa Pine shall not exceed 4" [102]. Ring density for the species shall be at least 6 rings-per-inch as measured over a 3" [76] distance. The diameter of the Ponderosa Pine posts shall be 8" [203] at the ground line with an upper limit of 8.75" [222].

Southern Pine:

Knot diameter for posts of Southern Pine shall not exceed 2.5" [64]. Ring density for the species shall be at least 4 rings-per-inch as measured over a 3" [76] distance. The diameter of the Southern Pine posts shall be 7.5" [190]. at the ground line with a upper limit of 8.25" [210].

The posts shall have cross-sectional properties as shown below:

| Post Material | Diameter in. (mm) | Area in. ² (10 ³ mm ²) | I _x in. ⁴ (10 ⁶ mm ⁴) | I _y in. ⁴ (10 ⁶ mm ⁴) | S _x in. ³ (10 ³ mm ³) | S _y in. ³ (10 ³ mm ³) |
|----------------------|----------------------|---|---|---|---|---|
| Douglas Fir | 7.25 (184) | 41.3 (26.6) | 135.6 (56) | 135.6 (56) | 37.4 (613) | 37.4 (613) |
| Ponderosa Pine | 8 (203) | 50.3 (32.4) | 201.1 (84) | 201.1 (84) | 50.3 (824) | 50.3 (824) |
| Southern Yellow Pine | 7.5 (191) | 44.2 (28.5) | 155.3 (65) | 155.3 (65) | 41.4 (679) | 41.4 (679) |

Dimensional tolerances not shown or implied are intended to be those consistent with the proper functioning of the part, including its appearance and accepted manufacturing practices.

INTENDED USE

This post may be used in the MGS Guardrail System for use with Round Posts (SGR28a-c). The PDBa-f timber blockout for use with the round post is attached to the RMW04a-b guardrail using a FBB07 guardrail bolt and nut.

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