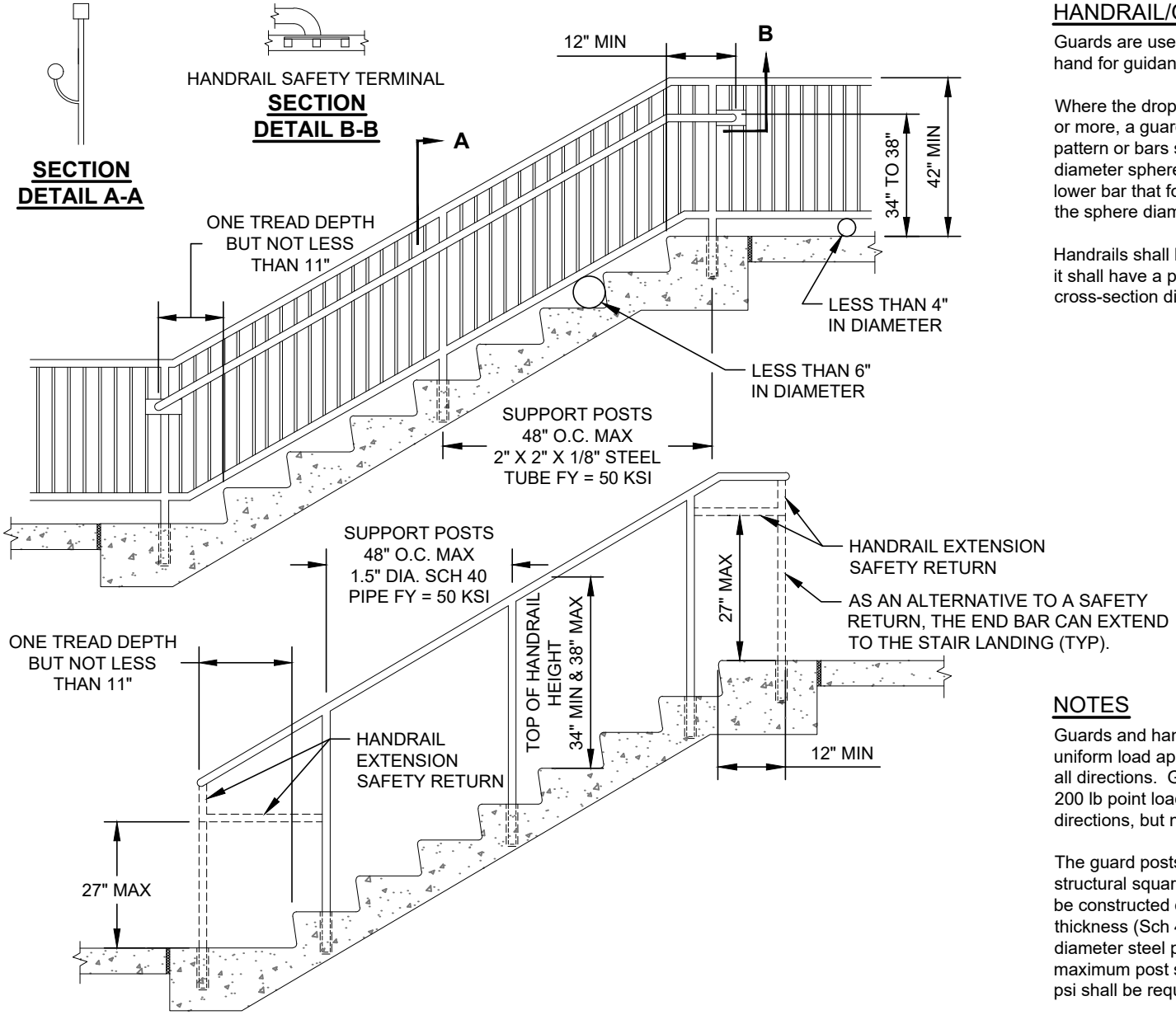

HANDRAIL/GUARD COMBINATION:

Guards are used for fall protection. Handrails are for grasping by the hand for guidance and support.

Where the drop off from the side of the stair or walking surface is 30" or more, a guard is required in addition to the handrail. Intermediate pattern or bars shall be provided within the guard to prevent a 4" diameter sphere from passing through, except where the guard has a lower bar that forms a triangle with the stair riser and the tread, here the sphere diameter can be increased to less than 6".

Handrails shall have an outside diameter of 1 1/4" to 2". If not circular, it shall have a perimeter dimension of 4" to 6 1/4" with a maximum cross-section dimension of 2 1/4".

HANDRAIL:

Stairways shall have handrails on each side (IBC 1011.11), except as allowed by the Tacoma Municipal Code Title 2 Chapter 2 Section 2.01.060

Handrails shall return to a wall, guard, or the walking surface, or shall be continuous to the handrail of an adjacent flight of stairs or ramp run.

Where handrails are not continuous between flights, the handrails for the top extension at stairs shall extend horizontally, not less than 12 inches, beyond the top riser, and the handrails for the bottom extension at stairs shall extend for a horizontal distance equal to one tread depth beyond the bottom tread nosing.

NOTES

Guards and handrails shall be designed to carry a 50 lbs/linear foot uniform load applied to the top bar of the guard or handrail in any and all directions. Guards and handrails shall also be designed to carry a 200 lb point load at any location along the top bar in any and all directions, but not simultaneously with the uniform load.

The guard posts and top rail can be constructed of 2" X 2" X 0.125" structural square tube, and a post spacing of 60" maximum. Or it can be constructed of 1.5" nominal diameter steel pipe with a 0.145" wall thickness (Sch 40) with a 42" maximum post spacing, or 1.5" nominal diameter steel pipe with a 0.20" wall thickness (Sch 80) with a 48" maximum post spacing. In all cases a steel yield strength of fy=50,000 psi shall be required.

RVDR REVIEWED BY EW		APPROVED FOR PUBLICATION	CITY OF TACOMA
PUBLIC WORKS	ENVIRONMENTAL SERVICES	kurtis kingsolver 04/19/2021	PEDESTRIAN RAILINGS GUARDS AND HANDRAILS
TACOMA POWER	TACOMA WATER	CITY ENGINEER DATE	STANDARD PLAN NO. SU-11

KURTIS DEAN KINGSOLVER STATE OF WASHINGTON 31229 REGISTERED PROFESSIONAL ENGINEER