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## DIVISION I  MISCELLANEOUS

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For free download, go to the City of Jefferson web site:

For comments or corrections please E-Mail at: jcengineering@jeffcitymo.org

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City of Jefferson
DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

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CITY OF JEFFERSON
STANDARD DRAWINGS
REVISED EDITION: 1/2020
Frame and Lid Type "M"

Frame and Lid Type "C"

Frame and Lid Type "L"

Frames and Solid Lids:
Type "M" Neenah R-1736, East Jordan V1383-3 or approved equal
Type "I" Neenah R-5900-F, Clay & Bailey 6010, Deeter 1154, East Jordan V1600-3 or approved equal
Type "C" Clay and Baily 2194, or approved equal
Type "L" Deeter 1828, Clay and Baily 2238, Neenah R-1975-A2, or approved equal

Type "M" and Type "I" lids shall have "City of Jefferson" cast into them.
Plan View of Steps

Section A–A

Residential Applications
1. Minimum riser shall be 4", and maximum shall be no more than 7 3/4"
2. Minimum tread shall be 10 3/4"

Commercial Applications
1. Minimum riser shall be 4", and maximum shall be no more than 7".
2. Minimum tread shall be 11"

Notes:
1. Positive drainage shall be achieved on all treads, not to exceed 1/8" per foot.
2. Expansion shall be placed at the top and bottom of the set of stairs when the sidewalk continues to the street or building.
1. Handrails are required on both sides of stairs and or ramps.
2. The top of the gripping surfaces of handrails shall be no less than 34" and no more than 38" vertically above the walking surface, stair nosing, and ramp surfaces. Handrails shall be at a consistent height above the walking surface or stair nosing.
3. At the top of a stair flight, handrail shall extend horizontally above the landing for a minimum of 12” beginning directly above the first riser nosing. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight.
4. At the bottom of a stair flight, handrail shall extend at the slope of the stair flight for a horizontal distance at least equal to one tread depth beyond the last riser nosing. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the hand rail of an adjacent stair flight.
5. Handrail gripping surfaces shall be continuous along their length and shall not be obstructed along their tops or sides. The bottoms of the handrail gripping surfaces shall not be obstructed for more than 20% of their length.
6. Handrail gripping surfaces with a circular cross section shall have an outside diameter of not less than 1 1/4" and not more than 2". Handrail gripping surfaces with a non-circular cross section shall have a perimeter of not less than 4" or more than 6 1/4". The longest cross sectional dimension shall be not exceed 2 1/4”.
7. Handrail gripping surfaces shall be continuous along their length and shall not be obstructed along their tops or sides. The bottoms of handrail gripping surfaces shall not be obstructed from more than 20 percent of their length.
8. Refer to U.S. Department of Justice "2010 ADA Standards for Accessible Design" for additional information and or requirements.

MATERIAL / FINISHES / INSTALLATION:

1. The material and finish requirements contained in this section are not meant to prohibit the use of manufactured railings which meet the requirements of ADA.
3. All fabricated railings shall be either 1 1/2" Ø schedule 40 steel tubing (1.90 OD x .145 wall), or 1 1/2" x 1 1/2" x 11 GA. (.120 wall) steel tubing. Pedestrian/Bicycle Guard Railing may exceed these dimensions.
4. All welds shall be continuous and shall be ground smooth. The railing shall be free of slag, burrs, or other defects.
5. Expansion joints shall be placed in railings after every third post. The joints shall be constructed as shown in the Expansion Detail. Additional expansion joints and or specifically designed mounting bracket/elements may be necessary if the railing is installed on a curve.
6. All posts shall have a 1/4" weep hole immediately above the concrete surface.
7. All fabricated railings shall have a hot dipped galvanized finish or shall be powder coated. If powder coated, the color shall be black unless otherwise approved by the engineer.
8. When installed the posts of all railings shall be plumb.
9. The railings may be bolted to the concrete surface or may be mounted with grout in sockets formed or drilled in the concrete. Refer to the mounting details for additional information.
Handrail shall not extend into main sidewalk.

Stair Railing Plan View

Handrail Layout

Stair Railing Profile View

Ramp Railing Profile View

A 6" curb may be used in place of the end of this bar.
Pedestrian/Bicycle Guard Railing

3/4" x 3/4" x 14 Ga. (.083 wall) pickets on 4 1/2" centers (typ.)*

4" max

28" for pedestrians
34" for bicycles

8' max between posts

36" for pedestrians
42" for bicycles

Mounting Detail B
plan view

Direction of railing

1/4" V

13"

16"

7"

8"

1/4" x 4" min x 4" min steel plate

1/2" x 6" U-bolt or 1/2" Ø 8" wedged anchor bolts with washers and hex nuts (all galvanized)

Non shrink grout as needed

Thickened concrete edge or wall

Mounting Detail B
section view

Non shrink grout

1/4" Ø weep hole

6" min

3" Ø socket

6" long sleeve centered about gap, outside of sleeve to be 1/16" smaller that inside of rail

Notes:
1. Expansion joins are required every 24 feet or every third post for stair and ramp railings.
2. Pedestrian/bicycle railing may be installed as separate units without expansion joints. Each unit shall be limited to a maximum of three posts. If this method is chosen the gap between each unit shall be 3 inches or less.
3. Other proprietary fasteners may be used upon City approval.

* The design professional shall determine the need for vertical pickets.
Erosion and Sediment Control Notes:

1. A MDNR Permit and SWPPP are required for projects/property disturbed that are over one (1) acre in size
2. Erosion and sediment control BMP installations must be inspected prior to grading operations commencing.
3. A blank SWPPP inspection form can be provided by the Department of Public Works for self-inspection documentation.
4. Refer to the Erosion and Sediment Control/Stormwater Quality Checklists and Stormwater Quality Benefits Summary for BMP items to be used or that can be included for the project.
5. Construction entrances shall be constructed and maintained to prevent mud and sediment from being tracked onto the adjacent streets/right of way. Grading work on the site shall cease until timely clean-up of the street occurs. Additional rock placement and other BMPs may be necessary to minimize offsite tracking of mud and sediment.
6. If feasible and without causing damage to adjoining property, divert off-site drainage around or away from the site of active construction. If the diversion causes water to flow across an adjoining property prior permission form the adjoining owner is required.
7. Accumulated water may not be directly pumped from ditches or ponded areas into the City infrastructure or down stream conveyances without first filtering out sediment through the use of geosynthetics, clean rock, or other means.