

**MIFFLINBURG BOROUGH**  
**UNION COUNTY, PENNSYLVANIA**  
**RESOLUTION NO. 2022-09**

A RESOLUTION OF THE BOROUGH OF MIFFLINBURG, UNION COUNTY, PENNSYLVANIA DECLARING ITS INTENT TO ADOPT CONSTRUCTION AND DESIGN STANDARDS FOR STORMWATER MANAGEMENT FACILITIES.

WHEREAS, pursuant to 8 Pa.C.S. § 3301.1(b), the Borough of Mifflinburg, Union County, Pennsylvania (the "Borough"), is authorized to adopt ordinances regulating land use, development, and subdivision in the Borough; and

WHEREAS, pursuant to 8 Pa.C.S. § 3301.1(c), the Borough is authorized to adopt resolutions for any purpose, including for setting forth certain rules, regulations, and standards pertaining to Borough ordinances; and

WHEREAS, the Borough has determined it to be in the best interest of the health, safety, and welfare of the residents of the Borough to enact certain construction and design standards for Stormwater Management Facilities pursuant to and in accordance with the Borough's Subdivision and Land Development Ordinance (Ch. 23 of the Mifflinburg Code of Ordinances); and

WHEREAS, the Borough desires to further clarify its existing regulations and provide for more specific construction and design standards for such Stormwater Management Facilities.

NOW, THEREFORE, the Council of the Borough of Mifflinburg, in a public session duly assembled, hereby RESOLVES as follows:

The Construction and Design Standards for Stormwater Management Facilities, attached hereto as Exhibit "A" is adopted and may be further amended by resolution from time-to-time as warranted.

In the event that any provision, section, sentence, clause, or part of this Resolution shall be held to be invalid, such invalidity shall not affect or impair any remaining provision, section, sentence, clause, or part of this Resolution. It is the intent of the Borough that such remainder shall remain in full force and effect.

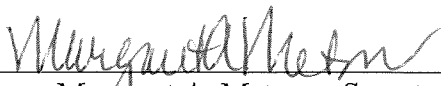
All Resolutions or parts of Resolutions of this Borough which shall be inconsistent with this current Resolution are expressly repealed.


This Resolution shall become effective February 15, 2022.

ADOPTED AND RESOLVED, this 18<sup>th</sup> day of January, 2022 by the Council of Mifflinburg Borough, Union County, Pennsylvania, at its regular meeting.

ATTEST:

BOROUGH OF MIFFLINBURG:

  
\_\_\_\_\_  
Margaret A. Metzger, Secretary

By:   
\_\_\_\_\_  
Richard J. Fry, President

Approved this 18<sup>th</sup> day of January 2022.

  
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David M. Cooney, Mayor

## EXHIBIT "A"

### Construction and Design Standards for Stormwater Management Facilities

#### 1. Pipe.

##### A. General.

- (1) All materials, unless specified otherwise, shall be supplied by producers listed in PENNDOT Bulletin 15, Approved Construction Materials.
- (2) Provide pipe and pipe fitting materials compatible with each other and of the type of pipe and size specifically indicated on the drawings. Pipe and joint materials for the type of pipe indicated on the drawings shall, unless otherwise indicated, conform to the material requirements herein specified.

##### B. PVC (Polyvinyl Chloride) Gravity Flow Pipe and Fittings, Type PSM SDR-35

###### (1) References

- (a) ASTM D 3034 – 4” through 15” diameter
- (b) ASTM F 679 – 18” to 27” diameter

###### (2) Materials

- (a) Stiffness: 50 psi minimum when measured at 5 percent deflection, ASTM D 2412.
- (b) Additives and Fillers: Not to exceed 10 parts by weight; 100 parts of resin in the compound.

###### (3) Joints and Fittings

- (a) Solvent Cement: Solvent cement per ASTM D 2564.
- (b) Elastomeric gasket joints ASTM D 3212: Gaskets per ASTM F 477.
- (c) Fittings - ASTM D 1784

##### C. Smooth-Lined Corrugated High Density Polyethylene (HDPE-SB) Solid or Perforated Pipe and Fittings, Gravity Flow Storm Drainage Application 8” diameter and larger:

(1) References:

- (a) AASHTO M 294-94: Standard Specification for Corrugated Polyethylene Pipe, 12" to 36" Diameter.
- (b) AASHTO MP6-95: Standard Specification for Corrugated Polyethylene Pipe, 42" and 48" Diameter.
- (c) ASTM D2321-89: Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
- (d) ASTM D3350: Standard Specification for Polyethylene Plastic Pipe and Fittings Materials.
- (e) ASTM F477-93: Specifications for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

(2) Material Properties:

- (a) Pipe and fitting materials shall be made from virgin high-density polyethylene compounds which conform to the requirements of ASTM D3350 resin cell classification 335420C or ASTM 01248 Type III, Class C, Category 4, Grade P33.

(3) Joints and Fittings:

- (a) Joint Requirements: Joints shall consist of a bell and spigot type joint with an O-ring rubber gasket meeting ASTM F477 placed on the spigot end. The bell end shall engage a minimum of two (2) corrugations to provide sufficient longitudinal strength, preserve pipe alignment, and prevent separation at the joints.
- (b) Fittings Requirements: Pipe fittings shall be manufactured to conform to AASHTO M294. They shall not reduce or impair the overall integrity of function of the pipe line. Only fittings supplied or recommended by the pipe manufacturer shall be used.

D. Reinforced-Concrete Sewer Pipe and Fittings: Comply with ASTM C 76-94, Class III, Wall B, and AASHTO M-170, for gasket joints.

(1) Gaskets: ASTM C 443

E. Corrugated-Aluminum Pipe: ASTM B 745/B 745M, Type I, made from ASTM B

744/B 744M, aluminum-alloy sheet for banded joints.

- (1) Fittings: Fabricated to types indicated and according to same standards as pipe.
  - (2) Connecting Bands: Standard couplings made for corrugated-aluminum pipe to form soil-tight joints.
- F. Pipes, trenching and backfill shall be in accordance with RC-30 of Roadway Construction Standard Drawings or other detail approved by the Borough Engineer.
- G. Pipe thickness and reinforcement shall be in accordance with approved engineering calculations. Minimum gauge for metal pipes shall be 16 gauge.
- H. Minimum pipe size for drainage facilities shall be 15 inches in diameter for on-site collection. Pipes utilized for upstream conveyance of off-site flows shall have a minimum size of 18 inches.
- I. Provide six inches minimum cover from top of pipe to subgrade.
- J. Pipes shall be inspected by the Borough prior to backfilling.
- K. Manholes or inlets shall be used for all pipe deflections in excess of 5°.

## **2. Inlets.**

- A. Precast Concrete Inlets: precast reinforced concrete, of depth indicated. The top section shall match the frame and grate for the inlet type specified.
- (1) Materials
    - (a) Base Section: 6" minimum thickness for floor slab and 6" minimum thickness of walls and base riser section for rectangular structures and 5" minimum thickness of walls and base riser section for 48" circular structures and having a separate base slab or a base section with integral floor.
    - (b) Riser Sections: 6" minimum thickness for rectangular structures and 5" minimum thickness for 48" circular structures and lengths required to provide the depth indicated.
    - (c) Top Section: Flat slab type with opening to match grade rings and frame and grate.
    - (d) Grade Rings: Provide maximum of 2 reinforced concrete rings as required and necessary. Match dimensions of frame and grate.
    - (e) Gaskets: ASTM C 443, rubber.

- (f) Protective Coatings: One-coat, coal-tar epoxy; 15-mil minimum thickness, unless otherwise indicated; factory or field applied to exterior vertical surfaces and bottom.
  - (g) Pipe Connectors: ASTM C 270-91a, "Standard Specification for Mortar for Unit Masonry" requirements. Mortar joints shall be smooth and flush with manhole walls.
  - (h) Channel and Bench: Concrete.
  - (i) Corner intersections of pipes and structures are prohibited.
- B. Inlet Steps: Wide enough for an adult to place both feet on one step and designed to prevent feet from slipping forward, backward or sideward off the step. Steps shall be provided in all structures of 5' or more in depth between top of grate and invert elevation.
- C. Frames and Grates: As shown on the Drawings, either structural steel, or gray, malleable, or ductile iron as specified in Section 1105.02(h) of PA DOT Publication 408 and shown in PennDOT Publication 72 - RC 45M standards for structural steel grate bicycle safe top approved for HS-25 loading.
- (1) Materials
    - (a) Coat structural steel with bituminous paint in the shop or in the field, prior to placement. Cover frames and grates completely with no pin holes or voids.
    - (b) All grates shall be bicycle safe.
  - (2) Unless shown otherwise on Drawings, provide Type M inlet concrete top unit for non-paved areas and Type C inlet structural steel top unit for paved areas with curbing.
- D. Yard Inlets: Yard inlets shall be manufactured by Nyloplast, a division of Advanced Drainage Systems, Inc., unless otherwise approved in writing by the Borough.
- (1) Landscape Area: Inlet frame shall have 10" opening to inlet. Grate shall be 10" domed grate opening, ductile iron, light duty rating (Grade 70-50-05), meeting ASTM A536 as manufactured by Neenah Foundry, unless otherwise approved in writing by the Borough.
  - (2) Pavement Area: Inlet frame shall have 12" square opening to inlet. Grate shall be 12" lockable, hinged pedestrian grate opening, cast iron frame with ductile iron grate, light duty rating Grade 70-50-05 and A48-Class

30B, meeting ASTM A536 as manufactured by Neenah Foundry, unless otherwise approved in writing by the Borough.

**3. Manholes (Storm Sewer Only).** Conforming to requirements as detailed in PennDOT RC-39 and specified in ASTM C478 except as follows:

- A. Concrete: Composition and compressive strength conforming to ASTM C478 except increase compressive strength to 4500 psi (at 28 days) in precast bases.
- B. Casting and Curing: Wet cast and steam curing process in accordance with Section 3.6.11 and 3.7.2 of AWWA C302.
- C. Manhole Steps: Factory installed in manhole components, pre-aligned vertically, spaced on equal centers, and located the minimum distance from ends of risers and top sections.
- D. Manhole Seals: Manhole component joints factory formed for self-centering concrete-to-concrete bearing utilizing sealing compound materials specified.

**4. Headwalls – Endwalls – Cutoff Wall**

- A. General: Construct reinforced concrete, headwall or endwall with apron, tapered sides with guard bars and with rip rap outlet protection or erosion blanket, as indicated on the drawings.
- B. Head Walls: Precast or Cast-in-place reinforced concrete, with apron and tapered sides conforming to PA DOT Publication 72 RC-31.
- C. End Section: Conforming with Section 616 of PA DOT Publication 408.

**5. Miscellaneous Structures and Facilities.** Miscellaneous structures and facilities shall be constructed in accordance with Pennsylvania Department of Transportation Publication 408 and Roadway Construction Standards where applicable or, as approved by the Borough.

**6. Detention Ponds.**

- A. Detention ponds or any other surface water detention or retainage basin shall be maintained by the property owner or private entity and guaranteed by way of a separately executed maintenance and upkeep agreement between the Borough and the property owner. Such agreement shall include language for perpetuity of said maintenance agreement in the event the development entity transfers assets.
- B. Pond Bottom. The minimum slope of any surface on the bottom of any pond shall

be 1.5%. Low-flow channels shall be constructed from any pipe or swale leading into the pond to the principal spillway.

C. Access. All facilities shall have stabilized access roads, gates, fences and easements where necessary for the proper maintenance, repair and utilization of the stormwater facilities.

D. Topsoil and Seeding. All pond areas including bottoms, side slopes and top of berms shall be provided with a minimum four inches of topsoil and shall be mulched and seeded with Formula B in accordance with PennDOT Publication 408, Section 804.

7. **Underground Infiltration Facilities.** Underground infiltration facilities shall be designed in accordance with Standards and Specification for Infiltration Practices. The minimum infiltration rate of the soil must be field verified.

8. **Swales.**

A. The minimum longitudinal slope shall be 0.005 feet/feet.

B. The maximum side slopes shall be 3:1 for grass lined swales and 2:1 for rock lined swales.

C. All grass lined swales shall be provided with a minimum of four inches of topsoil. Swales shall be mulched and seeded with Formula B in areas that will be mowed and Formula D in areas with limited access that will not be mowed, in accordance with PennDOT Publication 408, Section 804.