

# Water & Sewer Main Extensions: How to Get First Round Approval

Application and Checklist Training

With Thomas B. Barnick



# Expedited Checklist Overview

- ▶ Expedited Checklist
- ▶ Fees, including deviations
- ▶ COSA, MFE, or Exempt
- ▶ Required Documentation
- ▶ Satisfaction of Requirements

**DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER MAIN CERTIFIED CHECKLIST**

Project Name \_\_\_\_\_

Location \_\_\_\_\_ County \_\_\_\_\_

Public Supply Owner \_\_\_\_\_

Developer \_\_\_\_\_

Address \_\_\_\_\_

Engineer \_\_\_\_\_

Address \_\_\_\_\_

Will this project trigger a Sanitation Act review under MCA 76-4? ☐ Yes ☐ No

If so, has a Municipal Facilities Exclusion form been filed? ☐ Yes ☐ No

**REQUIRED DOCUMENTATION:**

*Checklists submitted without all of the required documentation will be considered incomplete and will not be processed until all of the required information has been submitted.*

**Included?**

**Y No**

☐ ☐ Three sets of plans and specifications stamped and signed by the professional engineer responsible for the design of the project.

☐ ☐ An engineering report presenting, at a minimum, the information required in section 1.1.1 through 1.1.14. of DEQ-1. The engineering report must include all applicable analysis and supporting assumptions, such as fire flows, etc.

☐ ☐ A map showing the location of the proposed water main in relation to the rest of the distribution system and the sewer collection system.

☐ ☐ Owner certification that a professional engineer will be retained for construction inspection and will certify completion in accordance with the approved plans and prepare as-builts for submittal to the Department within 90 days of project completion.

☐ ☐ Review Fee as specified in ARM 17.38.106.

☐ ☐ Capacity Certification (one of the following is required):

☐ This is a water main extension that is part of a water utility master plan approved by the department within the past ten years. A copy of the applicable portion of this master plan is included; or

☐ This is a water main replacement of an existing pipe and the pipe diameter is equal to or greater than the existing pipe. An approval letter from the owner of the system providing service is included; or

☐ All other extensions: An approval letter from a professional engineer (other than the design engineer) who is employed directly or retained by the owner of the public water system providing service to the proposed water main is included. The letter must state the system approves of the extension and the system has adequate capacity and pressure to accommodate the extension. Signature on the Municipal Facilities Exclusion checklist does not fulfill this requirement.

**DESIGN STANDARDS**

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# Sanitation Act Review

Will this project trigger a Sanitation Act review under MCA 76-4?

☐ Yes ☐ No

If so, has a Municipal Facilities Exclusion form been filed?

☐ Yes ☐ No

- ▶ This item is important and will be a large factor in the success of the contracts
- ▶ If checking no to Sanitation Act Review, documentation is required
- ▶ Provide a Preliminary Plat or Certificate of Survey
- ▶ Consult DEQ or contact county sanitarians if there are any questions at all if the project will require COSA, MFE, or exempt from review.

# Required Documentation

- ▶ Certified checklist form; stamped and signed.
- ▶ Three sets of plans and specifications; stamped and signed.
- ▶ An engineering report as specified by DEQ-1 and/or DEQ-2.
- ▶ Map showing existing and proposed water/sewer system.
- ▶ Owner certification of engineering services retention.
- ▶ Capacity certification

## REQUIRED DOCUMENTATION:

*Checklists submitted without all of the required documentation will be considered incomplete and will not be processed until all of the required information has been submitted.*

### Included?

Y No

- ☐ ☐ Three sets of plans and specifications stamped and signed by the professional engineer responsible for the design of the project.
- ☐ ☐ An engineering report presenting, at a minimum, the design capacity and flow requirements in Section 32 of Circular DEQ 2. The engineering report must include all applicable analysis and supporting assumptions.
- ☐ ☐ A map showing the location of the proposed sewer main in relation to the rest of the collection system and the water distribution system.
- ☐ ☐ Owner certification that a professional engineer will be retained for construction inspection and will certify completion in accordance with the approved plans and prepare as-builts for submittal to the Department within 90 days of project completion.
- ☐ ☐ Review Fee as specified in ARM 17.38.106.
- ☐ ☐ Capacity Certification (one of the following is required):
  - ☐ This is a sewer main extension that is part of a wastewater utility master plan approved by the department within the past ten years. A copy of the applicable portion of this master plan is included; or
  - ☐ This is a sewer main replacement of an existing pipe and the pipe diameter is equal to or greater than the existing pipe. An approval letter from the owner of the system providing service is included; or
  - ☐ All other extensions: An approval letter from a professional engineer (other than the design engineer) who is employed directly or retained by the owner of the public wastewater system providing service to the proposed sewer main is included. The letter must state the system approves of the extension and the system has adequate capacity to accommodate the extension. Signature on the Municipal Facilities Exclusion checklist does not fulfill this requirement.

# Review Fees

- Fee Schedule with accurate fees included
- Deviations
- Payment

| Plan Review Fee Record                        |                                 | Date Plans Received   | Account Number                                    | EQ Number            |         |
|---|---------------------------------|---|---|----------------------|---------|
| Invoice Number                                | Receipt Number                  | Check Number  | Total Received                                    |                      |         |
| PWSID   | Public Water Supply Name        |   |   | Total fee Determined |         |
|   |                                 |   |   | \$410.00             |         |
| County  | Nearest City                    | DEQ Review Engineer   |   | Total Fee Due        |         |
|   |                                 |   |   | \$410.00             |         |
| Project Name: Example project                 |                                 |   |   |                      |         |
| Design Engineer Name / Firm / Address         |                                 |   | Owner Name / Address                              |                      |         |
| Name  |                                 |   | Name  |                      |         |
| Address                                       |                                 |   | Address   |                      |         |
| City  |                                 |   | City  |                      |         |
| Schedule I - DEQ 1                            |                                 |   | Schedule II - DEQ 2                               |                      |         |
| Policies                                      |                                 |   | Chapter 10 Engineering Reports and Facility Plans |                      |         |
| Ultra Violet Disinfection \$875               |                                 |   | Engineering Reports (minor) \$350                 |                      |         |
| Point-of-Use / Point-of-Entry Treatment \$875 |                                 |   | Comprehensive Facility Plan (major) \$1,750       |                      |         |
| Section 1.0 Engineering Report \$350          | Chapter 30 Design of Sewers     |   |   |                      |         |
| Section 3.1 Surface Water                     | Number of Lots 2 X \$90         |   |   | \$180                |         |
| quality and quantity                          | \$875                           | Non-standard Specifications                                     |   |                      | \$520   |
| structures                                    | \$875                           | Collection System (lineal feet) 200 X \$0.30                    |   |                      | \$60.00 |
| Section 3.2 Groundwater \$1,050               | Slipping (lineal feet) X \$0.20 |   |   | \$0.00               |         |
| Section 4.1 Microscreening \$350              | Chapter 40                      |   |   |                      |         |
| Section 4.2 Clarification                     |                                 | Force Mains (lineal feet) X \$0.30                              |   |                      | \$0.00  |
| Standard clarification                        | \$875                           | Pumping Station 1000 gpm or less                                |   |                      | \$875   |
| solid contact units                           | \$1,750                         | Pumping Station greater than 1000 gpm                           |   |                      | \$1,750 |
| Section 4.3 Filtration                        |                                 | Chapter 60 Screening Grit Removal                               |   |                      |         |
| rapid rate                                    | \$2,190                         | Screening Devices & Comminutors                                 |   |                      | \$520   |
| pressure filtration                           | \$1,750                         | Grit Removal  |   |                      | \$520   |
| diatomaceous earth                            | \$1,725                         | Flow Equalization   |   |                      | \$875   |
| slow sand                                     | \$1,750                         | Chapter 70 Settling   |   |                      | \$1,400 |
| direct filtration                             | \$1,750                         | Chapter 80 Sludge Handling                                      |   |                      | \$2,800 |
| biologically active filtration                | \$1,750                         | Chapter 90 Biological Treatment                                 |   |                      | \$4,200 |
| membrane filtration                           | \$1,750                         | Non-aerated Treatment Ponds                                     |   |                      | \$1,400 |
| micro and ultra filtration                    | \$1,750                         | Aerated Treatment Ponds   |   |                      | \$2,450 |
| bag and cartridge filtration                  | \$520                           | Chapter 100 Disinfection  |   |                      | \$1,120 |
| Section 4.4 Disinfection                      | \$875                           | Chapter 120 Irrigation & Rapid Infiltration Systems             |   |                      | \$1,220 |
| Section 4.5 Softening                         | \$875                           | Appendix A Septage (per design)                                 |   |                      | \$1,220 |
| Section 4.6 Ion Exchange                      | \$875                           | Appendix C Alternative (non-standard) Sewer System (per design) |   |                      | \$1,220 |

# Engineering Report: DEQ-1, Section 1.1

## Water Main Extensions

- ▶ General Information: Section 1.1.1
- ▶ Extent of Water Works: Section 1.1.2
- ▶ Site Conditions: Section 1.1.4
- ▶ Water Use Data: Section 1.1.5
- ▶ Flow Requirements: Section 1.1.6
- ▶ Project Sites: Section 1.1.12

### Preferred Report Formatting

#### 1. General Information: Section 1.1.1

- a. *description of the existing water works and sewer facilities;*  
(An appropriate description)
- b. *identification of the municipality or area served;*  
(This project is in X town, served by X water district)
- c. *name and mailing address of the owner, developer and official custodian; and*  
(this is best included on the report cover sheet)
- d. *professional engineer's seal.*  
(Again, this should be on the cover)

#### 2. Extent of Water Works: Section 1.1.2

- a. *description of the nature and extent of the area to be served;*  
(Appropriate description. Can be one or two sentences)
- b. *provisions for extending the water works system to include additional areas; and*  
(If this doesn't apply, you can just say Not Applicable)
- c. *Discussion of the future requirements for service, including existing and potential industrial, commercial, institutional, and other water supply needs.*  
  
(Discussion of future development goes here. If no future development, just a sentence stating that no future development will connect to the proposed main is good enough)

# Engineering Report: DEQ-2, Section 11.1 & 11.2

## Sewer Main Extensions

- ▶ Problem Defined: Section 11.11
- ▶ Impact on Existing Facilities: Section 11.13
- ▶ Project Description: Section 11.14
- ▶ Drawings: Section 11.15
- ▶ Design Criteria: Section 11.16
- ▶ Site Information 11.17
- ▶ Facility plans and planning: Sections 11.21-11.23
- ▶ Hydraulic Capacity: Section 11.24

# Detailed Plans: DEQ-1, Section 1.2

## Water Main Extensions

- ▶ General Layout: Section 1.2.1
- ▶ Detailed Plans: Section 1.2.2



# Specifications

- ▶ Typically, refer to MPWSS
- ▶ Custom specs must meet DEQ requirements



# Deviations

## DEQ-1, Section 1.7 and DEQ-2, Section 24.1

- ▶ Allowed on a case-by-case basis
- ▶ Reviewed by a DEQ Deviation Review Committee
- ▶ Procedures:
  - ▶ DEQ-1, Section 1.7.1.d
  - ▶ DEQ-2, Section 24.1

# Relevant Requirements

- ▶ Circular DEQ-1
  - ▶ Chapter 1
  - ▶ Chapter 8
- ▶ Circular DEQ-2
  - ▶ Chapter 10
  - ▶ Chapter 30
  - ▶ Chapter 40\*
  - ▶ Appendix C\*



# Design Standards Checklists

Check "yes" when all the requirements of the section are satisfied. Check "N/A" when the section is not applicable and explain why the section is not applicable.

|   |                              |                              |   |
|---|------------------------------|------------------------------|---|
| <b>Section 8.1.1</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 8.1.2</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 8.1.3</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 8.1.4</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 8.2.1</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 8.2.2</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 8.2.3</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 8.2.4</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 8.3</b><br>If N/A, Explain _____   | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 8.4.1</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 8.4.2</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 8.4.3</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 8.4.4</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 8.5.1</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 8.5.2</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 8.6</b><br>If N/A, Explain _____   | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |

## DESIGN STANDARDS

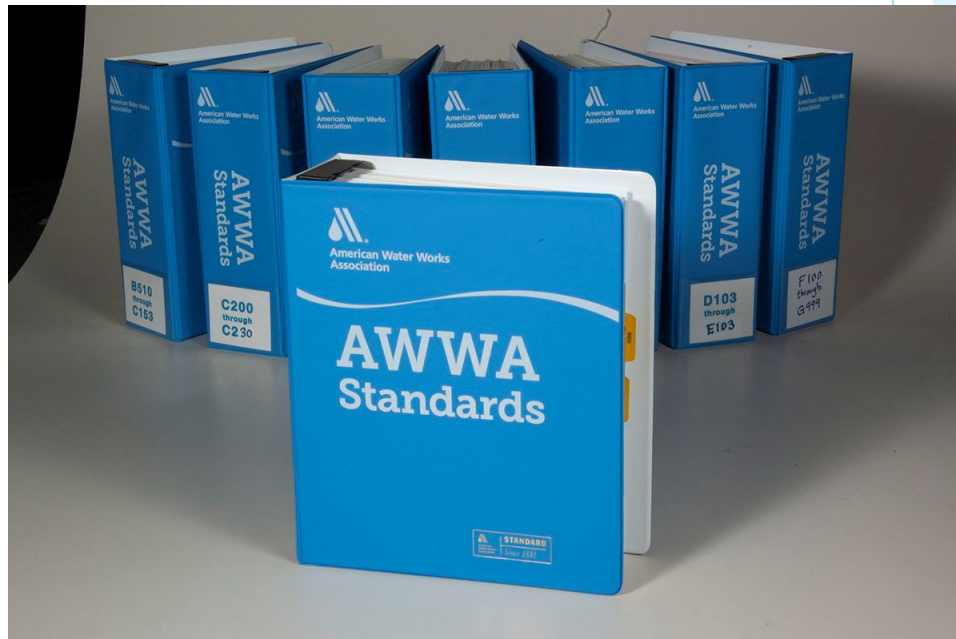
Check "yes" when all the requirements of the section are satisfied. Check "N/A" when the section is not applicable and explain why the section is not applicable.

|   |                              |                              |   |
|---|------------------------------|------------------------------|---|
| <b>Section 31</b><br>If N/A, Explain _____    | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 33.1</b><br>If N/A, Explain _____  | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 33.2</b><br>If N/A, Explain _____  | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 33.3</b><br>If N/A, Explain _____  | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 33.41</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 33.42</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 33.43</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 33.44</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 33.45</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 33.46</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 33.47</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 33.6</b><br>If N/A, Explain _____  | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 33.7</b><br>If N/A, Explain _____  | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 33.81</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 33.82</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |
| <b>Section 33.83</b><br>If N/A, Explain _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> Deviation (include Deviation Form) |

# Materials: DEQ-1, Section 8.1

## Water Main Extensions

- ▶ Material Selection: Section 8.1.1.a-f
- ▶ Permeation by Organic Compounds: Section 8.1.2.a-b
- ▶ Used Materials: Section 8.1.3
- ▶ Joints: Section 8.1.4



# Water Main Design: DEQ-1, Section 8.2, 8.3

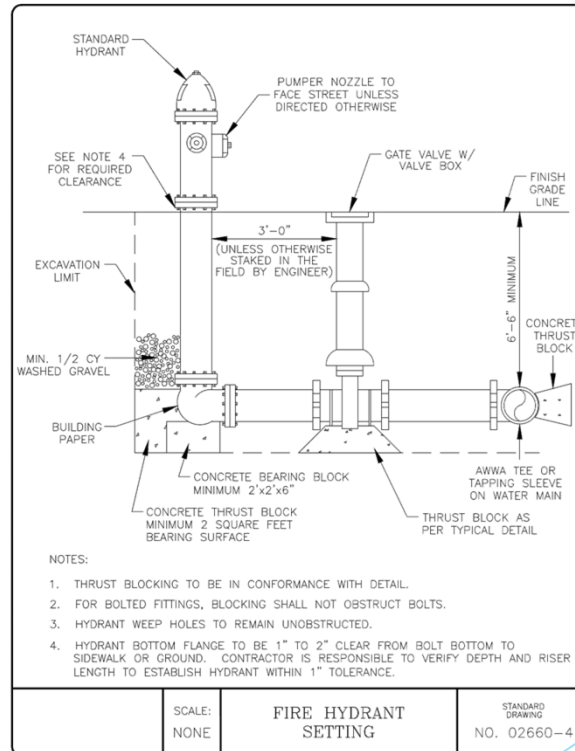
## Water Main Extensions

- ▶ Pressure: Section 8.2.1
- ▶ Diameter: Section 8.2.2
- ▶ Fire Protection: Section 8.2.3
- ▶ Dead Ends: Section 8.2.4
- ▶ Valves: Section 8.3

# Hydrants & Air Relief: DEQ-1, Section 8.4-6

## Water Main Extensions

- ▶ Location and Spacing: Section 8.4.1
- ▶ Valves and Nozzles: Section 8.4.2
- ▶ Hydrant Leads: Section 8.4.3
- ▶ Hydrant Drainage: Section 8.4.4
- ▶ Air Relief Valves: Section 8.5.1
- ▶ Relief Valve Piping: Section 8.5.2
- ▶ Valve, Meter, & Blow off Chambers: Section 8.6





# Installation of Mains: DEQ-1, Section 8.7

## Water Main Extensions

- ▶ Standards: Section 8.7.1
- ▶ Bedding: Section 8.7.2
- ▶ Cover: Section 8.7.3
- ▶ Blocking: Section 8.7.4
- ▶ Anchoring of Fusible Pipe: Section 8.7.5
- ▶ Pressure and Leakage Testing: Section 8.7.6
- ▶ Disinfection: Section 8.7.7
- ▶ External Corrosion: Section 8.7.8
- ▶ Separation from other utilities: Section 8.7.9



# Separation of Wet Utilities: DEQ-1, Section 8.8

## Water Main Extensions

- ▶ General: Section 8.8.1
- ▶ Parallel Installation: Section 8.8.2
- ▶ Crossings: Section 8.8.3
- ▶ Force Mains: Section 8.8.4
- ▶ Sewer Manholes: Section 8.8.5
- ▶ Other Contamination Sources: Section 8.8.6

# Crossings & Cross Connections: DEQ-1, Section 8.9-10

## Water Main Extensions

- ▶ Above Water Crossings: Section 8.9.1
- ▶ Underwater Crossings: Section 8.9.2
- ▶ Cross Connections: Section 8.10.1
- ▶ Cooling Water: Section 8.10.2
- ▶ Interconnections: Section 8.10.3

# Wrapping up: DEQ-1, Section 8.11-15

## Water Main Extensions

- ▶ Lead Control: Section 8.11.1
- ▶ Booster Pumps: Section 8.11.2
- ▶ Service Meters: Section 8.11.3
- ▶ Water Loading Stations 8.13
- ▶ Water Main Abandonment: Section 8.14
- ▶ Temporary Water Distribution: Section 8.15

# Design of Sewers: DEQ-2, Section 31,32

## Sewer Main Extensions

- ▶ Separation of Clear Water: Section 31
- ▶ Design Capacity and Design Flow: Section 32

# Details and Construction: DEQ-2, Section 33

## Sewer Main Extensions

- ▶ Minimum Size: Section 33.1
- ▶ Depth: Section 33.2
- ▶ Buoyancy: Section 33.3
- ▶ Slope: 33.4
- ▶ Alignment: Section 33.5
- ▶ Changes in Pipe Size: Section 33.6
- ▶ Materials: Section 33.7
- ▶ Installation: Section 33.8
- ▶ Joints and Infiltration: Section 33.9
- ▶ Casing Piping: Section 33.10

# Manholes: DEQ-2, Section 34

## Sewer Main Extensions

- ▶ Location: Section 34.1
- ▶ Drop Type: Section 34.2
- ▶ Diameter: Section 34.3
- ▶ Flow Channel: Section 34.4
- ▶ Bench: Section 34.5
- ▶ Watertightness: Section 34.6
- ▶ Inspection and Testing: Section 34.7
- ▶ Corrosion Protection: Section 34.8
- ▶ Electrical: Section 34.9

# Near Streams: DEQ-2, Section 36

## Sewer Main Extensions

- ▶ Cover Depth for Stream Crossings: Section 36.11
- ▶ Horizontal Location: Section 36.12
- ▶ Structure: Section 36.13
- ▶ Alignment: Section 36.14
- ▶ Construction Materials: Section 36.21
- ▶ Siltation and Erosion: Section 36.22
- ▶ Aerial Crossings: Section 37

# Protection of Water Supply: DEQ-2, Section 38

## Sewer Main Extensions

- ▶ Cross Connections Prohibited: Section 38.1
- ▶ Relation to Water Works: Section 38.2
- ▶ Relation to Water Mains: Section 38.3
- ▶ Sewer Services and Plumbing: Section 39

Typically requires  
a deviation



# Additional Considerations: DEQ-2 Sewer Main Extensions

- ▶ Pumping Stations: Chapter 40
- ▶ Force Mains: Chapter 49
- ▶ Alternative Collection Systems: Appendix C



# As-Builts and Records

- As-Builts must be provided within 90 days of completion for Agency records

# Questions?

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Bozeman Field Office

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