

GUIDELINES FOR DEVELOPER INSTALLED WATER MAIN PROJECTS



153 N. Emerson Avenue
Greenwood, IN 46143

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December 2021 Update Summary of Changes

Section 1 Updates:

- Introduction to the Developer Portal
- Designated Contact for INAW

Section 2 Updates:

- Updated to reflect the stages of the WME process
 - Design Stage
 - Review Stage
 - Agreement Stage
 - Fees
 - Construction Stage
 - Transfer of Ownership Stage

Section 3 Updates:

- Section 3.5
 - Show existing and proposed ROW
 - Restraints
 - Steel casing requirements for critical crossings
- Section 3.10
 - INAW may require different pipe material to eliminate excessive fittings
- Section 3.11
 - Water main material updates
- Section 3.18
 - Revised restraint requirements
- Section 3.21
 - Added District Specific Requirements

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1 General Information

1.1 Overview

This guide will provide a summary of the process and requirements for Developer installed water main extension (WME) and relocation projects. Developer will need to complete a **WME Application** and submit to Indiana American Water (INAW) Developer Services to get the process started. The WME Application is available on the Indiana American Water website (see Resource section) and is also attached to this guide as Appendix A.

1.2 Applicability

This guide is applicable to all Developer installed water main extension and relocation projects in all INAW service areas.

1.3 Developer Portal

Once the WME Application has been received, INAW Developer Services will set up the Developer Portal and send a link to the Developer's Team to set up their account. The Developer Portal will allow INAW to effectively collaborate with everyone on the Developer's Team. Through the Developer Portal, the Developer's Team will be able to upload and download the plans and track the progress of the project. All applicable documents related to the water main extension or relocation process will be available inside the Developer Portal. Please include all contact names and emails on the WME Application that will want access to the Developer Portal.

1.4 Designated Contact for Indiana American Water

INAW Developer Services will be the point of contact during the Design, Review, Agreement and Transfer of Ownership Stages. INAW Developer Services can be reached at inaw.developerservices@amwater.com. During the review process, INAW Developer Services will include your Local Operations Contact. Local Operations will oversee the Construction Stage of the process.

1.5 Resources

INAW's Developer Website contains valuable resources that are available to assist Developers in doing business with INAW. See link below.

<https://amwater.com/inaw/about-us/doing-business-with-us/developers>

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2 Developer Project Review Process

2.1 Design Stage

See Design Requirements in Section 3. The INAW Developer Services team is available to answer any questions throughout the design process.

2.2 Review Stage

The following items are required from the Developer for engineering review by an Indiana American Water. Developer needs to upload all documents to the Developer Portal for review.

Proposed Plans: The Developer shall upload proposed plans for water main installation to the Developer Portal and notify INAW Developer Services via email. PDF is the required file format.

Off-Site Main: An Off-Site Main is defined as the main installed to a development site where the Developer is not developing the land on one or both sides of the main. The Developer's property may front the main, but the services may not necessarily be connected directly to the Off-Site Main.

On-Site Main: An On-Site Main is defined as the main installed within a development where the properties on both sides of the main is being developed. Off-Site and On-Site Mains will be reviewed at the same time but will have separate agreements.

Overall Project Drawing: If the project is a part of a larger development, an overall site drawing must be submitted.

Preliminary Plat: Preliminary plat must be submitted along with the plans. The recorded plat will be required prior to project acceptance.

Engineer: Provide name and contact information of the engineer. The engineer must be a registered Professional Engineer (P.E.) in the State of Indiana.

Plan Review: The plans will be reviewed by INAW. If changes to the plans are necessary, an email will be sent to the Developer's Team advising them that a revise and resubmit memo has been uploaded to the Developer Portal. The Developer's Team shall address all comments and notify INAW Developer Services by email once the revised plans have been uploaded to the Developer Portal. Once the plan review has been completed, INAW Developer Services will notify the Developer's Team via email that the Completed Review memo has been uploaded to the Developer Portal. The project will then proceed to the Agreement Stage with the Completed Plan Review becoming Exhibit A of the Agreement.

Main Upsizing: INAW may require a larger main to be installed for future growth or other needs. In these situations, INAW will pay the Developer the actual cost difference between the smaller and larger main. If upsizing is involved in the project, it will be documented on the project agreement. INAW may require proof of material costs (such as invoices).

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IDEM Notice of Intent Application: *The NOI should be for the current phase of the project that is under review (not for the whole project). The Indiana Department of Environmental Management (IDEM) requires that a “Notice of Intent to Construct a Water Main Extension” (NOI) letter be submitted for all water main extension projects, regardless of main size or length. Please verify with IDEM for the latest NOI version. IDEM will not accept outdated NOI forms and it will delay the processing time. Alternatively, you may contact Developer Services for the latest version of the NOI. Depending upon the length of the project, fees may be required. The Developer will be responsible for paying the fees directly to IDEM. The Developer must utilize a registered professional engineer to prepare the NOI. The following items on the IDEM NOI Application should be completed:

- Boxes 1 through 16
- Box 8, verify number with Developer Services
- Box 17, preference checked
- Box 18, marked appropriately
- Box 19
 - Responsible Person Signature
 - Engineer Signature
 - Developer Signature
- Box 25, sections E through I
 - Number of Residential or Commercial connections
 - Description of Commercial connections
 - Average Daily Demand
- Box 26, sections A and B

The NOI letter should be uploaded to the Developer Portal along with the project plans. INAW Developer Services will complete the Water Utility Information.

When the review has been completed, INAW will email the application to IDEM. All fees must be sent directly to IDEM after the NOI has been submitted. The NOI and NOI Confirmation letter will be saved in the Developer Portal for your records. The required 30-day waiting period begins upon IDEM’s receipt of the application. Construction may begin after the 30-day waiting period is complete. Construction must commence within 12 months of the submittal date of the NOI. If construction does not commence within that 12-month period, a new NOI submittal will be required. (Ref. IAC 8-3.5-10).

2.3 Agreement Stage

The Developer’s Team uploads the following documents to the Developer Portal for INAW Developer Services to prepare the Agreement: (all templates are available in the Developer Portal)

Estimated Cost Form: This form is a required attachment to the agreement. It is to provide the estimated costs for labor and materials. Please note that the materials shown on the Estimated Cost Form must match what is shown on the reviewed plans.

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Main Extension Project Sheet: This form has the Developer Contact information that will appear on the agreement and the PE's contact information. Any special agreement instructions, such as upsize information, will be documented on this form.

Easements: If required for project, provide original recorded easement documents. The easements must be on the INAW's standard easement document and must be granted to Indiana-American Water Company, Inc. The easement legal description and drawing are required exhibits to the agreement. Standard easement document template is available in the Developer Portal. The INAW Easement is a non-exclusive easement and may overlap other easements (including general utility easements). Where water main is installed in easement the Indiana American Water Standard Easement Document will be required.

Fire Hydrant Authorization: Locations of fire hydrants need to be authorized by the local fire department. Fire Department Review form must be signed by the fire department. If the fire department will not sign the document, please advise Developer Services and we will issue the agreement without the document, at the Developer's liability.

Agreement: The Agreement will be sent to Developer via DocuSign once all the required documents listed above have been received. The agreement will include the Completed Plan Review as Exhibit A and the Estimated Cost Form as Exhibit B.

Signed Agreement: When the signed agreement is returned to INAW, the Developer's Team will be notified via email that a pre-construction meeting may be scheduled along with contact information for the Local Operations. Someone from the Developer's Team must contact Local Operations to schedule the meeting.

FEES ASSOCIATED WITH THE AGREEMENT

Any Advance Fees (including Subsequent Connector Fee). If any fees are required to be paid in advance the fees will be calculated from the Estimated Cost and trued up at Transfer of Ownership stage. The fees must be paid prior to issuing the agreement.

Utility Fee: The Utility Fee covers costs related to engineering, administrative, inspection, legal, direct labor, direct labor overhead, and transportation that are incurred by INAW. The amount of this fee may change each year, based on the previous years' actual costs. INAW notifies the Indiana Utility Regulatory Commission (IURC) of the amount of the Utility Fee on an annual basis, as well as the method of calculation. The fee is a percentage of the final cost reported on the Final Actual Cost Form. INAW may require the Utility Fee to be paid prior to execution of the agreement, in which case the fee will be calculated as a percentage of the estimated cost reported on the Estimated Cost Form. The fee will then be trued-up during the Transfer of Ownership Stage by recalculating the fee using the project final cost as reported on the Final Actual Cost Form. The Utility Fee percentage is documented in the agreement.

Tie-In Fee: The Tie-In Fee, if any, covers the cost of INAW completing the tap to connect the Developer's newly installed water main into the Company owned water system. Estimated Tie-

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In Fee amount will be stated in the agreement and will be trued-up at Transfer of Ownership Stage.

Subsequent Connection Fee: If the new development has frontage along an existing water main installed within the last ten years, there may be a subsequent connector fee. The Subsequent Connector Fee will be required to be paid prior to the agreement being issued.

2.4 Construction Stage

The IDEM 30-Day waiting period for the NOI must be met.

The pre-construction meeting will be held with INAW, INAW's Inspector, the Developer's Team including: the Developer (or representative), the Contractor, and the designing Engineer. The following items must be complete prior to the start of construction:

- Provide the name and contact information of the water main installation contractor. The contractors must be on INAW's Pre-Qualified Contractors list. Pre-qualification is required prior to start of construction.
- Construction of road subgrade must be complete. Please note that some districts require curbs to be in place before main installation begins. This ensures that the main is located in the proper place and at the proper depth. The Local Operations can provide details on this requirement.
- Centerline or off-set stakes must be maintained until construction of the water main is complete.
- The Developer is responsible for all required permits and approvals, including all permit fees for the water mains and appurtenant facilities for the project. Developer must provide verification that all required permits have been obtained, prior to the start of construction. NOTE: INAW reviews the plans to ensure they meet our current Specifications. When crossing roads INAW allows several different methods. The Developer must obtain the Right-of-Way permit and follow the Right-of-Way owners' specifications for crossings. When conflicts arise between the INAW Specifications and the Right-of Way crossing requirements, the more stringent shall take precedence. INAW reserves the right to require casing to be installed even if not required by the Right-of-Way permit. **CASING WILL BE REQUIRED FOR CRITICAL CROSSINGS SUCH AS: ALL TUNNELS, INDOT ROW, AND RAILROAD CROSSINGS.**

The contractor will install the water main as per the reviewed plans and according to the INAW's Standards and Specifications, latest revision. Any changes to the reviewed plans will require additional review by INAW.

Developer will have the new main flushed, disinfected, and pressure tested. A representative from INAW must be present during this process. This representative will collect bacteriological samples and will send them to a State Certified Lab. The Developer's representative must complete the "Pressure and Leakage Tests for Main Extensions" form and have it signed by the INAW representative.

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An INAW representative will inspect the installation of the water main. The Developer's contractor will provide the inspector with a construction schedule so that the inspector can be available to inspect the installation. Failure to provide the inspector with a schedule, or adequately notify the inspector of any changes to the schedule, could be cause for the project or portions of the project to not be accepted.

2.5 Transfer of Ownership Stage

After construction and testing is complete, the Developer must submit all final paperwork within 30 days. To facilitate Transfer of Ownership the following items are required to be uploaded to the Developer Portal and INAW Developer Services notified via email that the documents are ready for review:

Record Drawings: The Developer will provide certified Record Drawings. The drawings must meet "Minimum Standards for Record Drawings" and must be stamped by a registered Professional Engineer. Developer's contractor is responsible for supplying red-line as-builts to the Developer's Engineer. INAW will not supply red-line drawings or GPS points from our inspector.

Certification by Engineer: This form is to be completed by the Developer's Engineer and must be stamped by a registered Professional Engineer. This document certifies the accuracy of the Record Drawings.

Plat Map: Recorded final plat must be submitted along with an address list with lot numbers for all subdivisions.

Final Actual Cost Form: This form documents the Developer's final actual costs for the project and it must be signed by the Developer. If the cost varies substantially from the Estimated Cost Form provided at the beginning of the project, an explanation of the difference may be requested. All materials listed on this form must match exactly to what is shown on the Record Drawings.

Transfer of Ownership: This document transfers ownership of the new water main and appurtenances from the Developer to INAW. The dollar amount at the top of the form must match the dollar amount on the Final Actual Cost Form. This form also warrants the project for one (1) year from the in-service date against defects. The Transfer of Ownership document must be signed and notarized by the Developer.

Fees: All fees applicable to the Agreement will be due within 30 days of the completed main extension testing. See section 2.3 for fee explanations.

Final Inspection: After all documents have been received, Developer Service will notify Operations to conduct a final inspection of the main and its appurtenances. The inspection will include making sure that the valves and hydrants are to finished grade, the hydrants are painted properly, the valves are operational, the valve boxes are straight and the main is able to be located via the installed tracer wire. The inspection will also include verification that the Record Drawings match what was installed.

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Acceptance Letter. When all the above requirements have been met, an acceptance letter is emailed to the Developer. This letter includes the amount of the Refundable Advance Account, described below. The Developer Portal will then be closed to the Developer. Please ensure you have all save copies of all the documents you may need.

Main Released for Taps. At this time, the Local Operations team will be notified that the main is now released for taps. Please note that there is a fee for all meter sets. The Developer will need to contact the Customer Service Center to pay the fee and set up the accounts, 1-800-492-8373. The local Operations team will not be able to set meters until this fee is paid.

Refundable Advance Account. The Developer has the opportunity to recover an amount up to, but not exceeding, their original investment in the main extension. The Refundable Advance Account is established in the amount of the actual cost of the main, as reported on the Final Actual Cost Form, plus the Utility Fee paid.

Subsequent Connection Fees. For Off-Site main projects, the subsequent connector fee documented on the agreement will be revised based on the final actual costs of the project. A copy of the revised agreement page will be sent to the Developer along with the Acceptance Letter.

Main Upsizing. If a main upsizing is involved in the project, and documented on the agreement, any reimbursement check will be issued after the Transfer of Ownership. Unless Developer notifies Developer Services at time agreement is signed, the Utility Fee, Tie-In Fee and Taxes will be trued-up with the Main Upsize reimbursement.

2.6 Revenue Refunds

A one-time revenue refund is issued for each new service connected to the main installed for the water main extension project. As described below, revenue refunds are based on connections to the main and the Developer may or may not receive the entire Refundable Advance amount back in refunds. The refund period expires ten (10) years from the in-service date of the project, as documented on the acceptance letter, or when the balance in the Refundable Advance Account is depleted.

Residential refunds are calculated by using the average annual revenue for a residential customer. This is an average of all the residential customers in each district with the same size meter; therefore, it is different for every district. This one-year average revenue amount is multiplied by three (3) to establish a three-year average revenue amount.

Commercial, Industrial, Irrigation, and Multifamily Refunds are calculated by using the actual first twelve (12) months of revenue for the service. The first twelve (12) months of revenue is multiplied by three to establish a three-year revenue.

Private fire services are also refunded. This is calculated by the size of the service (not the size of the tap) and is calculated by using the first twelve (12) months of revenue for the private fire service

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surcharge. The first twelve (12) months of revenue is multiplied by three (3) to establish a three-year revenue.

Example of Commercial Refund:

2" Domestic Meter—First 12 months actual revenue = \$3,600 x 3 years = \$10,800

2" Irrigation Meter—First 12 months actual revenue = \$5,000 x 3 years = \$15,000

8 Private Fire Service -- \$122.31 per month * 36 months = \$4,403.16

Total Refund for this premise would be \$30,203.16

2.7 Subsequent Connection Fees

Subsequent Connection Fees will be established for Off-Site main projects and will be documented on the agreement. The fee is calculated by taking the total estimated cost of the main (including utility fees) and dividing it by the amount of serviceable frontage along the new main. Serviceable frontage includes all main that can be tapped for service, on both sides of the street. This fee is paid by any property owner, not a part of the development, who desires to connect to this main to receive water service. The fee is paid per foot of frontage that the property owner has on the main. This fee is collected by INAW and immediately refunded to the Developer. The Utility has the right at any time to construct other new main extensions and appurtenant facilities connecting to the main extension installed by the Developer. Neither the connection of any such new main extension nor any service connection furnished from it shall be subject to subsequent connector fees. The Developer will not be entitled to any refund based on the new main extension or service connection from it.

Example of Subsequent Connection Fees:

Developer A installs 1000 feet of off-site 12 inch main at a total cost of \$100,000. The main services 1000 feet on both sides of the road for a total serviceable area of 2000 feet.

The cost per foot would be calculated as \$100,000/2000 feet = \$50 per linear foot of main.

Developer B wants to develop the property across the road and has 200 feet of frontage.

INAW would collect \$10,000 (200 feet x \$50 per foot) from Developer B and then send a check to Developer A for \$10,000. If Developer B has any meters directly connected to the main that Developer A installed, then Developer A would also get a revenue refund for the meters connected.

2.8 Connection Fees and System Development Fees

Indiana American Water charges two different fees for every new meter connection: The Connection Fee (CF) and a System Development Charge (SDC). These fees are published in the tariffs and can be found at the website link below:

<https://amwater.com/inaw/customer-service-billing/your-water-rates>.

Connection Fees (CFs): CFs pay for the cost to install new service line connections and meter settings for new customers requesting service. INAW will continue to install these facilities with the exception that new customers will continue to install meter pits and vaults for meter sizes 2 inches in diameter and larger per existing Rules and Regulation because the construction of these larger size meter pits often requires Developer specific considerations that are more

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efficient for Developers to manage. The CFs will vary for these larger meters depending on what INAW installs and what the Developer is approved to install.

CFs include the cost of tapping the water main, installing the new service line, and installing the meter pit, meter, and related appurtenances, for all service connection sizes except for the cost of meter pits and vaults, and related appurtenances for meter sizes of 2 inches in diameter and larger.

CFs were implemented because it is appropriate for new customers to pay for the costs of new service connections they request, rather than existing customers to continue to pay for these costs in their rates. In the future, rates for all customers will be less than they would otherwise be if existing customers were to continue to pay for the connection costs for new customers.

System Development Charges (SDCs): SDCs are a one-time charge paid by a new customer that reflects the cost of constructing system capacity. They are also paid by existing customer requesting to increase their water meter size. In this case, the customer would pay the difference between the SDC fee for their existing meter size and the SDC fee for the requested larger meter size. The SDCs vary depending on the meter size. While the CFs may be reduced because the Developer installed a portion of the meter connection, the SDCs will stay the same as published in the Tariffs.

SDCs were implemented because it is appropriate that capacity related costs be equitably distributed between existing and new customers. The previous rate design without SDCs allocated all capacity costs to existing customers and no costs to new customers through SDCs. Implementation of SDCs will equitably distribute capacity costs to new customers at the time they connect to the system. In the future, rates for all customers will be less than they would otherwise be if existing customers were to continue to pay for the capacity costs for new customers.

SDCs include the costs of major backbone infrastructure components that are necessary to provide service to customers including source of supply facilities, treatment facilities, pumping facilities, storage tanks, and water transmission mains.

Use the link below to view the current Indiana American Water Rates and Fees:

<https://www.amwater.com/inaw/customer-service-billing/your-water-rates>

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3 Design Requirements

3.1 Purpose

This section of the guide provides the minimum design requirements for the review of the water main extension and relocation projects. The design shall be performed in accordance with generally accepted engineering standards and practices, all applicable local and state regulations, and Indiana American Water's Standards and Specifications. Any deviation from Indiana American Water's Standards and Specifications will require written approval specific to the request. The Developer's Engineer is responsible for the design of the project. See section 3.21 for operational district specific requirements.

3.2 General Drawing Requirements

Drawings provided for Indiana American Water's review must include the following sheets.

1. Title Sheet providing a location map and contact information
2. General Layout Sheet(s) providing an overall view of the project extents
3. Plan & Profile Sheet(s) providing a detailed view of the water main project
4. Standard Details Sheet(s) applicable to the water main only

All drawings must be on 22-inch by 34-inch or 24-inch by 36-inch sheets with north arrow-oriented plan up or right. The north arrow and scale must be provided on each sheet. All drawings must be sealed by a registered Professional Engineer prior to Indiana American Water's acceptance of the plans. Except for images, which may be plotted in color, all drawing lines and text shall be plotted in black & white or grayscale.

3.3 Title Sheet

Provide a location map with a scale not to exceed 1 inch = 2,000 feet showing all neighboring properties, streets, streams, etc. within a one-mile radius of the project site. Include development or project name and the contact information for the Developer and Developer's Engineer.

3.4 General Layout Sheet(s)

Provide an overall view of the project at a scale not to exceed 1 inch = 100 feet identifying the water main alignment and size, fire hydrant locations, valve locations, right-of-way boundaries, easement boundaries, lot lines, and building setback lines. All boundaries and lines are to be clearly identified.

On developments with multiple phases, provide a preliminary drawing identifying the different phases, proposed street names, and current development phase to be reviewed.

3.5 Plan and Profile Sheet(s)

Provide a plan view of the project at a scale not to exceed 1 inch = 40 feet and include the following items:

1. Show proposed water mains and all appurtenances, including nominal diameter, length, and type of material, and pressure class/rating.

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2. Show existing and proposed right-of-way boundaries and dimensions, easement boundaries and dimensions, lot lines, and building setback lines.
3. Identify all fire hydrants, valves, fittings, including vertical bends, fitting bend angle, above/below ground blow-off assemblies, anchor collars, steel casing, and all other appurtenances.
4. Identify restrained pipe length.
5. If an alternate method of installation, such as horizontal directional drill or jack-and-bore, is required, identify the extents to which it applies.
6. When steel casing is required for a street or railroad crossing per INAW, local, or state requirements, include the size, length, and wall thickness of the casing. **CASING WILL BE REQUIRED FOR CRITICAL CROSSINGS SUCH AS: ALL TUNNELS, INDOT ROW, AND RAILROAD CROSSINGS.**
7. When connecting to existing water mains, show the nearest existing valve and fire hydrant. If it cannot be shown to scale, include the approximate distance.

Provide a profile view along the water main alignment at a horizontal scale that matches the plan view and include the following items:

1. Show the existing and proposed grades, and water main depth.
2. Identify all utilities and buried infrastructure (sewer, sewer lateral, etc.)
3. Show proposed water main and all appurtenances. (Fittings, valves, hydrants, casing)

All sheets must include INAW's Water Utility Installation Notes that is available in the Developer Portal.

All revisions made during the review process needs to be clearly indicated on the plans.

3.6 Standard Details Sheet(s)

Provide details that are applicable to the water main installation only. INAW's Standard Details pertinent to the development must be included on the plans. Deviations from INAW's standard details must be clearly noted for review. The details can be found in the Developer Portal link above. AutoCAD files are available in the Developer Portal.

3.7 Size of Water Mains

The water main shall be designed in accordance with 327 IAC 8-3.2. The water main shall be sized to provide, at a minimum, the maximum daily domestic demand plus fire protection demand while maintaining a minimum residual pressure of 20 psi throughout the existing distribution system. The minimum size of water main supplying water to fire hydrants shall be 8-inch. When necessary, hydraulic modeling will be performed by INAW to determine the required size of water main. Indiana American Water may require an upsize of the water main for future growth or other needs.

3.8 Location of Water Mains

Water mains shall be located outside of paved areas and at least 3-feet from any pavement. In accordance with 327 IAC 8-3.2-9, maintain the required 10-feet of horizontal separation and 18-inches of vertical separation from sanitary and storm sewers, and maintain 8-feet of horizontal separation from sanitary and storm structures. Where water and sewer separation cannot be

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maintained, identify the location on the drawings for review by INAW. Maintain 3-feet between water mains and all other utilities such as, other water mains, gas, telephone, electric, etc. Water mains shall maintain a minimum of 20-foot horizontal clearance from the edge of any building or structure. Water mains shall not be located under structures or earthen mounds. Water main shall be designed to allow for safe operation, and to prevent costly future maintenance, relocation, or replacement.

3.9 Depth of Water Mains

Water mains shall be installed at the minimum depth specified in 327 IAC 8-3.2-17 and a maximum of 24-inch deeper than the minimum depth. Depth of main is to be measured from the proposed final grade. In the event that a conflict requires the water main to be installed deeper than the maximum depth, Indiana American Water will review and provide guidance.

3.10 Alignment of Water Mains

Water mains shall be designed in straight alignments in order to minimize unnecessary offsets and fittings, while also meeting the requirements described in section 3.8 and 3.12. When curvature is required, the water main deflection may not exceed the requirements set forth in INAW's Technical Specifications. Deflection of PVC pipe joints or bending of PVC pipe is not allowed. Alternate water main material which allows for joint deflection or bending of pipe may be required when water main alignment requires an excessive use of fittings.

3.11 Water Main Material

Ductile Iron (Class 52 for typical distribution mains 12-inch and smaller, see Indiana American Water's Technical Specifications for other sizes), PVC (C900 DR14), and HDPE (DR 11, DR 9 for pipe sizes under 4 inches) are acceptable pipe material. Certain areas such as INAW's Northwest Indiana and Muncie districts are known to have corrosive soils, and so only non-metallic pipe will be allowed. INAW may require an increase in pipe wall thickness for critical water mains.

Refer to INAW's Technical Specification sections 15105, 15120, and 15125 for additional information.

3.12 Easements

Water mains shall be installed within an easement that is at least 20-foot wide. Water mains 20-inch and larger shall be installed within an easement that is at least 40-foot wide. Whenever possible, water mains are to be centered within the easement or at a minimum 5-feet off the right-of-way in order to meet the requirements described in section 3.10 above. INAW allows water mains to be installed within the right-of-way for On-Site Mains in residential development; however, INAW reserves the right to require the water main to be installed within an easement.

3.13 Frontage

In accordance with 170 IAC 6-1.5-29, water main must cover the entire frontage of development. In the case of a corner lot, both frontages must be covered. If the property has more than two frontages, INAW will evaluate the property for frontage requirements during the preliminary review and communicate the requirements to the Developer.

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3.14 Valves

Sufficient in-line valves shall be installed to minimize service interruptions and safety hazards during maintenance. Distribution main valve spacing shall not exceed 500-feet when within a developed area and 1,000-feet when within an undeveloped area.

The appropriate number of valves at each water main intersection shall be determined using an N-1 formula where N represents the number of branches. For example: at a four-way intersection, a minimum of three valves are required.

Gate valves shall be installed on 3-inch to 12-inch water main. Butterfly valves shall be installed on water main sizes greater than 12-inch.

Refer to INAW's Technical Specification sections 15150 and 15155 for additional information.

3.15 Air Release Valve

If required, include air release valve assemblies at high points along the water main as per AWWA Standard C512-15 and Manual M51.

Refer to INAW's Technical Specification section 15190 for additional information.

3.16 Fire Hydrants

Fire hydrants shall be installed on the same side of the road as the water main. In accordance with 327 IAC 8-3.2-15, fire hydrants shall be spaced such that the maximum distance as measured along the water main does not exceed 600-feet. Fire hydrant locations must be reviewed and accepted by the local fire department. All fire hydrant laterals shall be 6-inch Ductile Iron pipe. PVC and HDPE hydrant laterals are not acceptable.

Refer to INAW's Technical Specification section 15180 for additional information.

3.17 Dead-End Water Mains: Blow-Offs & Temporary Fire Hydrants

In accordance with 327 IAC 8-3.2-13, all dead-end mains shall terminate with a flushing device. Water mains 4-inch and under shall terminate with a blow-off assembly per INAW's Standards and Specifications. Water main 6-inch and larger shall terminate with a temporary fire hydrant assembly per INAW's Standards and Specifications.

Refer to INAW's Technical Specification sections 15190 for additional information.

3.18 Thrust Restraint

The Developer is responsible for the design of all thrust restraint systems. Water main shall be restrained using the appropriate pipe joint restraints. All fittings shall be restrained using mechanical joint retainer glands. Length of restrained pipe must be clearly shown on the plans. Thrust blocks are not an acceptable means of thrust restraint, except when required in connecting to the existing water main and for installation of fire hydrants.

GUIDELINES FOR DEVELOPER INSTALLED PROJECTS

Refer to INAW's Technical Specification sections 15105 and 15120 for pipe joint restraint requirements of ductile iron and PVC pipe.

3.19 Private Fire Services and Private Fire Hydrants

Private Fire Services and Private Fire Hydrants shall be shown on the plans for reference only. The size and location are to be reviewed through a separate Private Fire Service Application process and are not a part of the water main extension/relocation review process. Private Fire Service Applications will not be accepted prior to the review of the water main extension/relocation.

3.20 Service Lines

Residential domestic service lines shall be excluded from the plans. Commercial and industrial domestic service lines shall be shown on the plans for reference only. All domestic and irrigation service line sizes and locations are to be reviewed by the Local Operations Team and are not a part of the water main extension/relocation review process.

3.21 District Specific Requirements

1. Southern Indiana Operations
 - a. Minimum cover shall be 42"
 - b. For residential cul-de-sacs, 4" C900 PVC DR14 will be required
2. Newburgh
 - a. Minimum cover shall be 42"
 - b. For residential cul-de-sacs, 4" C900 PVC DR14 will be required
 - c. No HDPE water main will be accepted
3. Muncie
 - a. Water mains 12" and smaller shall be non-metallic (PVC or HDPE) b.
4. Northwest Indiana
 - a. Water mains 12" and smaller shall be non-metallic (PVC or HDPE)
 - b. All taps shall be made by INAW (such as tie-ins, domestic and fire services)