

HOLLAND BOARD OF PUBLIC WORKS (HBPW)

SPECIFICATION FOR DEVELOPMENT REQUIREMENTS

HBPW: MJG

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07/11/2023

PART 1 - DESCRIPTION

1.1 SUMMARY

Section includes requirements and process for plans and specifications for new developments larger than a single family home.

PART 2 - PROCESS

2.1 WITHIN CITY LIMITS

- A. Owner and Owner's Engineer to follow the City's Planning Commission. The HBPW will participate in that process by reviewing the site plans and utility impact study as submitted to the City. The HBPW will approve the site plans as to the feasibility of a proposed project.
- B. The Owner and the Owner's Engineer will then use the site plan approval to develop utility construction plans. The construction plans will be reviewed and approved by the HBPW prior to the HBPW submitting the plans to EGLE for permitting, if the project involves public main extensions. Design of the utilities to follow the guidelines as described in this specification.
- C. Construction will begin with a preconstruction meeting with the Contractor and HBPW staff. Owner will be invoiced for HBPW inspection of public utility extensions. At the completion of construction, the Owner or Owner's Engineer to provide completed easements, record drawings and bill of sale. The requirement of Owner's Engineer providing the record drawings is different from developments in the Townships.

2.2 TOWNSHIPS

- D. Owner and Owner's Engineer to follow the Township's Planning and Zoning Process. The HBPW will participate in that process by reviewing the plans approved by the Township. Using the utility impact study, as described below, the HBPW will approve the plans as submitted to the Township. The Owner's Engineer and the Township will use the HBPW's approval to submit the plans to EGLE for permitting. Design of the utilities to follow the guidelines as described in this specification. Owner will be invoiced by the Township for Township inspection of public utility extensions. Owner or Owner's Engineer to provide completed easements, bill of sale, and any other documentation required by the Township. The Township will develop the record drawings for sanitary sewer laterals witnesses, lengths and depths of sewer, water service witnesses and main line valve witnesses. Major changes will be completed by design engineer.

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PART 3 - IMPACT STUDY

3.1 WATER

- A. Developer's Engineer to submit information regarding projected demands on the existing water system. Water demand can be determined using an REU methodology or by process demand. The BPW will use the projected demands on the water system to approve the site and the project can move to detailed design.

3.2 SANITARY

- A. Proposed development shall include the proposed additional flow into the existing sewer. Proposed sewer flows may be calculated with a Residential Equivalent Unit (REU) methodology.
- B. Existing sewer capacity shall be metered or estimated with REU methodology and sewer capacity shall be evaluated for the contributing area to the sewer defined as the area served by minimum sized sewer until the sewer collection system upsizes. Maps of the sewer collection will be generated with MissDig Design requests.
- C. Downstream sewers shall not exceed 80% of the capacity of flowing full at peak hourly flow. Developments that increase the sewer flow past 80% capacity of flowing full, may be required at the BPW's discretion to upsize downstream sewer at the Developer's cost.
- D. Downstream Lift Stations shall not exceed 80% of the capacity of flowing full at peak hourly flow. Developments that increase the Lift Station flow past 80% capacity of flowing full, may be required at the BPW's discretion to upsize the downstream lift station at the Developer's cost.
- E. Commercial discharge waste profile must approved by the BPW wastewater plant prior to discharge. Proposed site plans should indicate the proposed waste profile to address any waste profile concerns before construction starts.
- F. Construction Ground Water Discharge- Proposed construction dewatering to be discharged to the Sanitary sewer shall have a proposed flow rate and waste profile approved by the BPW wastewater plant prior to discharge. Actual discharge shall be metered with the metering witnessed by BPW staff.

PART 4 – DESIGN

- A. Design and layout of Utilities to follow current 10 States Standards. Developments in Townships should also consider Road Commission requirements for utility location within Right Of Way.
- B. Upsizing
 - 1. A developer shall pay for the size water main needed to provide fire flows. If a developer desires to oversize to eliminate his/her cost for off-site looping he/she shall pay the oversize cost to his/her property line up to 50% of his/her dead end length. Oversizing only applies to mains larger than

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eight-inches (8") in residential areas and twelve inches (12") in commercial and industrial areas.

2. A developer shall pay for the size sanitary main needed to provide flows. The BPW shall pay oversizing above the developer needs if determined to be beneficial to the sanitary sewer collection system.

4.1 WATER

B. General

- A. Proposed Water Mains to follow current HBPW Standards of Construction for materials, bury depth, allowable deflection and construction methods.

C. Mains

A. Alignment

1. Water mains shall be in Public ROW or minimum 20 foot wide easement.
2. Water main should be kept under proposed roadway pavement.
3. PVC water main shall not change proposed alignment by deflection.

B. Looping

1. Water main looping shall be required when dead ends cannot provide fire flows as described in Section 2.1 part A. The developer shall pay the entire cost of looping including on-site and off-site water mains when the loop is necessary to provide adequate fire flows to his/her development.
2. Dead ends which can meet fire flow standards shall be minimized by looping whenever practical to assure maximum quality and reliability. The loop shall be considered practical when the length of additional water main required to loop the dead end is 50% or less than the dead end itself.
3. Water mains shall be extended to meet the property line of neighboring undeveloped land when requested by the BPW. In these cases, dead ends are allowed on a temporary basis awaiting future development.
4. A developer shall pay the entire cost for a water main extended to the property line to meet and connect to an existing water main adjacent to the development. The location of this extension shall be at a location determined by the BPW. If the BPW cannot determine the best location for the water main extension, the developer shall provide adequate funds and right-of-way to allow the BPW to extend the water main at a future date.
5. For projects within City Limits The BPW shall pay costs for looping outside the boundary of the development and that portion inside the development exceeding 50% in length of the original dead end when BPW requests the loop for other than meeting fire flow standards within the development.

C. Sizing

1. The minimum size for new water main is 8 inches in diameter for Residential areas and 12 inches in diameter for Industrial areas.

D. Valves

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1. Main Line valves should be placed in each direction on every main line tee or cross. The BPW may request mid-block valves in areas of long uninterrupted main to limit customer outages.

E. Hydrants

1. Hydrants shall be placed at 400 ft Intervals, with preferred locations at street corners and green spaces.

F. Restraint

1. Required restraint lengths must be shown on the Construction plans.
2. Hydraulics
3. Proposed public main shall meet the following flow targets.

Type	Flow (GPM) @ 20 PSI
Residential	1,250
Commercial/Industrial	2,000

4. Public Main extensions shall keep the delivered service pressure between 40 and 80 psi. Pressure Reducing Valves or Booster Stations should be included in the design where necessary.

D. Services

1. Service size and location shall be shown on the plan. Location of NFPA required PIV shall be shown on fire services.
2. Domestic Services are to be a minimum 1 inch K-copper.
3. Domestic services shall not be tapped to Transmission Mains without written permission of the HBPW. Cost to the developer will not be considered when determining the tapping location and style for water system connections.
4. Domestic Service Curb boxes should be planned to be located out of driveways,
5. Fire Services are to be a minimum 6 inch Ductile Iron.
6. Domestic service to be tapped from Fire Services where applicable per the Fire Service Standard Detail.

4.2 SANITARY

A. General

1. Proposed Sanitary Mains to follow current HBPW Standards of Construction for materials, Manholes, allowable deflection and construction methods.

E. Alignment

1. Sewer mains shall be in Public ROW or centered in a minimum 30 foot wide easement. Sewer mains over fifteen feet (15') in depth may require a wider easement for future maintenance.

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2. Sewer mains shall be kept under proposed pavement.

F. Size

1. Proposed sanitary mains shall be no smaller than 8 inches in diameter.

G. Services

1. Proposed sanitary laterals shall be no smaller than 6 inches in diameter.
2. Proposed sanitary laterals shall be located outside of driveways.
3. If the proposed sewer is more than twelve feet deep, a main line riser shall be used.
4. Proposed sewers should result in a lateral depth of 9 feet at the ROW line to allow for service to the lowest level of a residence.
5. If 9 feet of depth at the ROW cannot be achieved, proposed laterals shall have no less than 4 feet of cover at the property line.
6. New sanitary lateral service connections cannot be tapped into MH's.

H. Lift Stations

1. New Lift Stations require more in-depth planning and review than normal site plans. The addition of new lift stations requires adequate time and coordination to ensure a proposed lift station meets HBPW standards and specifications and that process. The addition of new lift stations is not included in this specification.

I. Manholes

1. Monitoring manholes shall be shown on the plan, with ROW or easement limits noted, to prove location on private property.
2. Manhole spacing should not exceed 500 feet. Manholes must be installed at all changes in horizontal alignment and major drop connections. Manholes shall not be deeper than thirty-five (35) feet. Manholes are also required at changes in pipe diameter. Vehicular access to manholes is required.
3. No internal drops in the sanitary sewer manholes.

PART 5 – CONSTRUCTION PLANS

5.1 GENERAL PLAN REQUIREMENTS

- A. Construction Plan Sets shall have Water and Sanitary Sewer on a separate plan sheet from other utilities and site work.
- B. Construction plans shall be reviewed and approved by the BPW prior to construction. Site Plan Approval **does not** equal Construction plan approval.
- C. Construction plans shall be submitted to the HBPW in digital format for HBPW's submission to EGLE for permitting. Allow sufficient time for EGLE permitting review.

5.2 WATER

- A. Submittals from Contractor shall be received and approved prior to start of construction.

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- B. Signed and Sealed plans in digital format along with design info necessary for State permitting. HBPW will submit for permits.

5.3 SANITARY

- A. Monitoring manholes shall be shown on the plan, with ROW or easement limits noted, to prove location on private property.

PART 6 - CONSTRUCTION

6.1 CONSTRUCTION

- A. A Pre-construction meeting will be held for all sites. The meeting must be scheduled with BPW personnel at least 3 days prior to the start of construction. New utility assets placed without a pre-construction meeting will be removed from the ground at the Developer or Contractor's cost.
- B. Submittals from Contractor shall be received and approved prior to start of construction.
- C. Trunkage and Frontage fees must be paid prior to the start of construction.
- D. Meter fees must be paid prior to the setting of meters.
- E. Service Applications are required for new water main taps of all sizes and sewer taps of all sizes, and any required meters. Service application must be received a minimum of 2 weeks prior to the start of construction.
- F. All construction must meet current BPW specifications for construction.
- G. Water services 2 inches and smaller in diameter require a City or Township plumbing permit for work on private property.
- H. Sanitary laterals require a City or Township plumbing permit.

6.2 CONSTRUCTION INSPECTION

- A. The BPW will review each project and bill the owner for appropriate costs associated with BPW inspection. The costs can be estimated at \$4.50 per foot of proposed water main and \$4.50 per foot of proposed sanitary main. Fees will be updated regularly and calculated at the current rates at time of submission of site plan.

PART 7 - DOCUMENTATION

7.1 DOCUMENTS

- A. Owner will be required to provide the following documentation at Owner's cost:
 1. Record Drawing per current HBPW specifications.
 2. Developer Inspection Records.
 3. Contractor Submittals.
 4. Bill of Sale for extended public utilities.
 5. Easement for extended public utilities outside of the public Right Of Way.

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6. Owner's Engineer to certify by letter that the project is complete and is in accordance with the approved plans and specifications prior to maintenance being performed by BPW staff.

END OF SECTION