



# Private Cost Manual



**PHILADELPHIA**  
**WATER**  
— DEPARTMENT —

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# Introduction

The Philadelphia Water Department (PWD) defines a Private Cost project as any development project with a scope of work impacting PWD infrastructure. Impact can range from relocating a fire hydrant to reconstructing public water and sewer systems to accommodate other elements of the project's scope. The term "Private Cost" refers to the project's funding source and is designated to any work not directly funded through PWD's capital program. Private Cost projects require input, guidance, and approval from PWD. Private Cost projects are reviewed and managed by engineers within PWD's Design Unit.

The PWD may accept and maintain water, sanitary, and stormwater facilities installed within the public right-of-way or dedicated easement by any private developer or agency provided that the facility is designed and constructed in accordance with PWD standards. A PWD inspector will ensure proper construction and installation of these facilities, and will issue final approval upon completion of the work.

The intent of the *Private Cost Manual* is to:

- Familiarize the Developer and Project Engineer with the procedures and standards associated with submitting a project for review to PWD. The plans serve as construction documents to be adhered to under the supervision of a PWD inspector, and will be on record as the contract documents associated with the constructed portion of PWD's infrastructure.
- Present the Private Cost Plan Review and approval process.
- Provide the Project Engineer with PWD standards, including but not limited to design, drawing, and construction requirements.
- Ensure that PWD and ultimately the citizens of Philadelphia receive infrastructure of the highest quality with a long and trouble-free service life.

# Terms and Abbreviations

The following is a compilation of terms, definitions, and abbreviations used throughout this manual:

## Abbreviations

- PWD* - Philadelphia Water Department
- PSD* - Philadelphia Streets Department
- SWPR* - Stormwater Plan Review
- GSI* - Green Stormwater Infrastructure
- HPFS* - High Pressure Fire System
- GPIS* - Guaranteed Paving Information System
- IWU* - Industrial Waste Unit
- ROW* - Right of Way
- PWD EDR* - Philadelphia Water Department Engineering Design Review
- PWD UR* - Philadelphia Water Department Utility Review
- PWD WTR* - Philadelphia Water Transport Records

## Terms & Definitions

- Private Cost* - Refers to any project where the design and construction of facilities to be owned and maintained by the Philadelphia Water Department is wholly funded through a non-PWD capital funding source.
- Private Cost Plan Review* - The process by which any party seeking the approval of contract drawings outlining the construction of water, sewer, or stormwater infrastructure will submit to the Design Unit for review, comment, and acceptance of the plans.
- Design Unit* - Branch of PWD's Engineering and Construction Division providing engineering support, a subset of which is dedicated to Private Cost related services.
- PWD Engineer* - Design Unit engineer assigned to review, comment, and accept the contract drawings and other documentation associated with a Private Cost Plan Review.
- Project Engineer* - Engineer-in-responsible-charge of the design and presentation of Private Cost Project documents, acting on behalf of the Developer.
- Developer* - The party initiating or otherwise causing the need for a Private Cost Project. This party is ultimately responsible for the satisfactory completion of the project to the approved construction documents.
- PWD Inspector* - PWD representative present during all construction operations related to PWD infrastructure; assures work performed is of acceptable quality and in compliance with PWD standards, maintains records of completed work, and coordinates with appropriate PWD units throughout construction.
- PWD Water and Sewer Design Manual* - The PWD Water and Sewer Design Manual presents standard requirements for the design, documentation, and installation of water, sewer, and storm water infrastructure. This manual serves as a minimum standard and is not a substitute for the Project Engineer's professional judgment or minimum standard of care.

## Terms & Definitions (cont'd)

*Right of Way (ROW)* - The surface of and space above and below any real property in the City in which the City has a regulatory interest, or interest as a trustee for the public, as such interests now or hereafter exist, including, but not limited to, all streets, highways, avenues, roads, alleys, sidewalks, pedestrian and vehicle tunnels and passageways, concourses, viaducts, bridges, and skyways under the control of the City, and any unrestricted public or utility easements established, dedicated, platted, improved or devoted for utility purposes

*(PWD) Water Conveyance* - Operational and maintenance arm of the Philadelphia Water Department responsible for the City's potable water conveyance system. All water main design drawings will be reviewed by the Water Conveyance group to guarantee all operating and maintenance needs are accounted for in the design.

*(PWD) Collector Systems* - Operational and maintenance arm of the Philadelphia Water Department responsible for the City's drainage collection system. All sewer design drawings will be reviewed by the Collector Systems group to guarantee all operating and maintenance needs are accounted for in the design.

*(PWD) GSI Design* - Branch of PWD's Planning and Environmental Services division responsible for implementation of Green Stormwater Infrastructure (GSI) throughout the City by ensuring all PWD design standards and specification are appropriately considered and integrated into the design documents. All GSI design drawings will be reviewed by the GSI Design and Operations groups to guarantee appropriate application of the department's design standards and the continued operation and maintenance of existing and/or proposed facilities.

# Philadelphia Water Department Standards

It is the intent of PWD's design manuals, details, and specifications to give guidance on the orderly preparation of documents to be presented for approval as well as to communicate PWD's own design practices. Adhering to the methods, procedures, language, and examples in these documents promote consistency in the preparation of plans and supplementary construction documentation.

The *Private Cost Manual* serves only as a general guideline. Engineers and design professionals should not rely solely on these guidelines, and must always use professional judgment in the development of plans and specifications. It remains the responsibility of the design professional to develop plans based on sound engineering judgment while maintaining consistency with all laws and regulations. Compliance with these guidelines does not guarantee design acceptance by PWD. The Department will exercise its best professional judgment, on a case-by-case basis, in its review of each design application.

The water and sewer design standards are comprised of three (3) primary documents:

## ***Water and Sewer Design Manual***

<http://www.phillywaterdesign.org>

The PWD Water and Sewer Design Manual presents standard requirements for the design, documentation, and installation of water, sewer, and storm water infrastructure. This manual serves as a minimum standard and is not a substitute for the Project Engineer's professional judgment or minimum standard of care.

## ***Standard Details and Specifications for Sewers***

<http://www.phillywaterdesign.org/sewer-standard-details.html>

## ***Standard Details and Corrosion Control Specifications for Water Mains***

<http://www.phillywaterdesign.org/water-standard-details.html>

Separate resources exist for green stormwater infrastructure design:

## ***GSI Planning and Design Manual***

<http://philadelphiawater.org/gsi/planning-design/manuals.html>

This is a resource for planners and designers seeking guidance on the process for creating green stormwater infrastructure (GSI) for Philadelphia Water Department. The site is intended for use by providers of professional planning and engineering services contracted by Philadelphia Water Dept., partners and other agencies working with the Department, and Philadelphia Water Dept. staff.

# Submission, Review, and Approval Procedures

## Project Introduction

Private Cost projects are introduced to the PWD Design Unit from a number of internal and external sources:

- **PWD Stormwater Plan Review** – Stormwater Plan Review is a unit within the PWD responsible for reviewing development projects in the City of Philadelphia to ensure compliance with the Stormwater Regulations. As part of their Development Review process, Stormwater Plan Review will forward projects to the Design Unit to review and comment on potential impacts to PWD infrastructure. If a Private Cost Plan Review is required for a project, Stormwater Plan Review will inform the applicant of this requirement in their review response. For more information on Stormwater Plan Review’s Development Review process, see *section 2.5 in the Stormwater Management Guidance Manual*: <http://www.pwdplanreview.org/manual/chapter-2>
- **Philadelphia Streets Department** – As part of the Streets Department’s ROW Unit Plan Review process, PWD’s Design Unit is notified of projects that may impact PWD infrastructure within the public right-of-way or encroach on drainage or water main right-of-way.
- **Developer** – Developers will sometimes reach out to engineers in the PWD EDR group when they know a Private Cost Plan Review is necessary for their project. The Developer or Project Engineer acting on behalf of the Developer, is directed to formally submit through PWD Design Unit to initiate the Private Cost Plan Review process.
- **PWD GSI Maintenance** — GSI Maintenance is a group within PWD that maintains public Green Stormwater Infrastructure (GSI) throughout the city. If one of these GSI systems is impacted by development or utility work a Private Cost Plan Review may be necessary to restore the affected infrastructure.
- **PWD Stormwater Billing & Incentives** — This group reviews private Stormwater Retrofit projects and engages in partnership project opportunities between PWD and other entities. They also administer the Stormwater Management Incentives Program (SMIP) and Greened Acre Retrofit Program (GARP) programs, which provide funding and assistance to non-residential PWD customers and contractors. As part of their stormwater retrofit review, Stormwater Billing & Incentives will forward projects to the Design Unit to review and comment on potential impacts to PWD infrastructure. Also, projects that propose to manage right-of-way runoff on private property will submit to the Design Unit for review of the work proposed within the right-of-way.
- **PWD Utility Review** — Development projects seeking a Building Permit from the Department of Licenses & Inspections or any project proposing a new connection to PWD infrastructure must first obtain PWD approval of the Utility Plan. To initiate this review, submit the Utility Plan in PDF format to [pwdur@phila.gov](mailto:pwdur@phila.gov). For more information, see <https://www.pwdplanreview.org/>.

## Plan Submission and Design Review

Once it is known that a project requires a Private Cost Plan Review it is the responsibility of the Developer, or the Project Engineer acting on behalf of the Developer, to contact the Design Unit for instruction on moving forward with the review process. To initiate the Private Cost Plan Review process, submit electronically a complete set of construction documents and a transmittal letter to:

**PWD EDR**

**Attn: Vinu Varghese**

**1101 Market Street, 2nd Floor**

**Philadelphia, PA 19107**

**p: (215) 685-6332      e: [PWD.EDR@phila.gov](mailto:PWD.EDR@phila.gov)**

The Project Engineer will coordinate with the PWD Design Engineer assigned to the project throughout the design review process. The Project Engineer will submit drawings to the PWD Engineer, who will ensure the plans meet PWD design and drawing standards. The PWD Engineer also ensures the proposed work does not encroach existing ROWs or inhibit the continued operation & maintenance of existing infrastructure. This iterative process will continue until the PWD Engineer finds the plans to be acceptable.

Final approval of the plan set is contingent upon an internal review by PWD's Water Conveyance, Collector Systems, and GSI Design Units, as well as the Philadelphia Fire Department (review by Water Conveyance required for projects involving existing water mains; review by Collector Systems required for projects involving existing sewers; review by GSI Design required for projects involving green infrastructure; review by the Fire Department is required when fire hydrants are affected). Each party will provide their own review comments, which will be forwarded to the Project Engineer by the PWD Engineer. Once the comments have been addressed fully, the PWD Engineer will inform the Project Engineer of PWD's acceptance of the design and the project will move from PWD Design to Projects Control. Projects Control will draft an agreement to be entered into by the City and the Developer ensuring the work will be constructed according to the approved documents and bonded to insure the work is complete and acceptable to the Department.



## Final Submission

Once all the comments compiled from PWD’s internal review have been addressed and are reflected on the plans, the Project Engineer must submit to the PWD Engineer:

One (1) transmittal letter, including the point of contact for the developer,

One (1) printed copy of the plans, signed and sealed by a Professional Engineer registered in the Commonwealth of Pennsylvania,

One (1) electronic copy with: an electronic copy (PDF format) of the stamped plans and associated AutoCAD files, one (1) copy of the signed GPIS Notice, one (1) copy of the “Project Summary Report” generated from GPIS, one (1) copy of the Paving Restoration Letter, and one (1) copy of the corrosion control report (water only).

The PWD Engineer will transmit the signed copy of the plans along with a memorandum summarizing the work and acknowledging PWD Design Unit’s acceptance to the PWD Projects Control Unit. At this point, the project has officially moved from PWD Design to PWD Projects Control, bringing the Private Cost Plan Review process to a close and initiating Projects Control’s process.

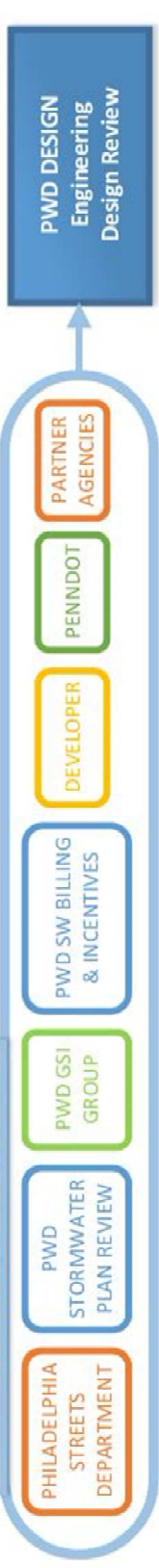
## Developer’s Agreement

The Projects Control Unit will process the plans for signature by the Water Commissioner and draft a “Developer’s Agreement” to be entered into by the Developer and PWD, ensuring the work is completed to PWD’s satisfaction. On Private Cost projects, an agreement is drafted, approved by the City of Philadelphia’s Law Department, and sent to the developer for their signature and submission of a performance bond, if necessary. When the signed agreement and performance bond are returned to Projects Control, the Notice To Proceed letter is issued to the Developer or their agent. At this point, PWD Construction and Water Transport Records receive a copy of the approved plans and Notice To Proceed letter, and the work may commence. PWD Projects Control Unit will return a signed copy of the plans and Developer’s Agreement to the Developer.

The Developer, upon receipt of the final approval letter, signed plans, and signed Developer’s Agreement, must instruct their contractor to contact PWD’s Construction Unit seven (7) days prior to construction to have a PWD inspector assigned to the project. Prior to accepting newly installed sewers, PWD must perform a post-construction video inspection; water mains must be pressure tested and disinfected before being put back in service (see “Construction Requirements” section for more information). A sample of the Developer’s Agreement can be found at: <http://www.phillywaterdesign.org/private-cost-contract-requirements.html>

# Private Design Review Process

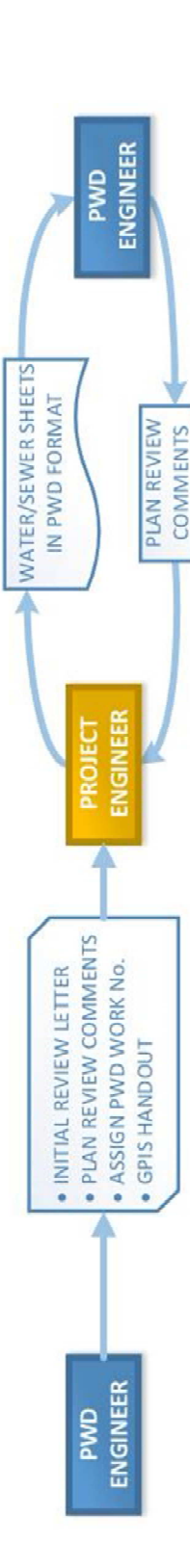
## PROJECT INTRODUCTION SOURCES



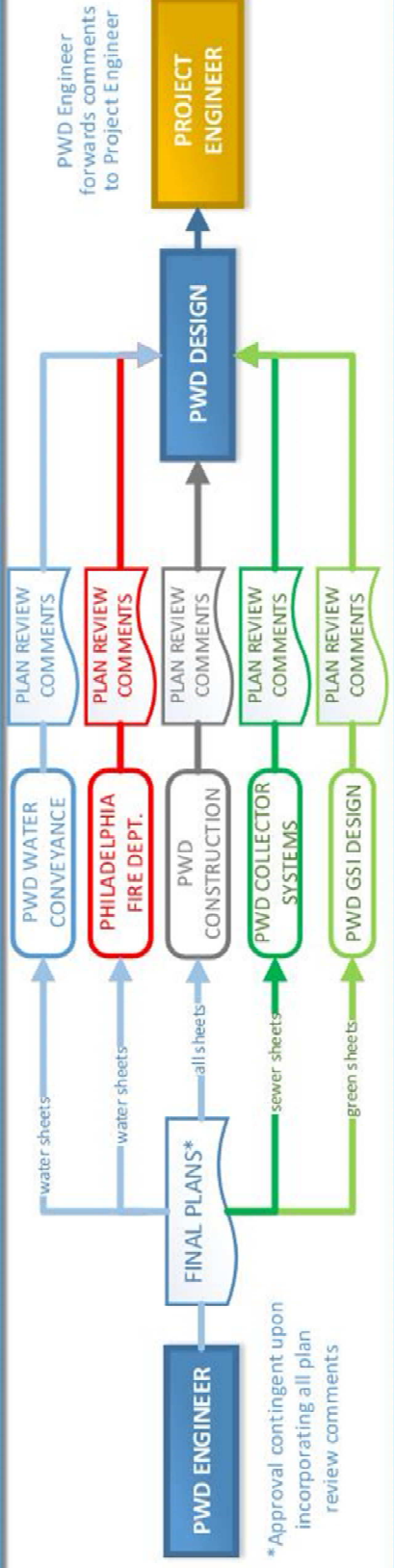
**1**  
Project Introduction



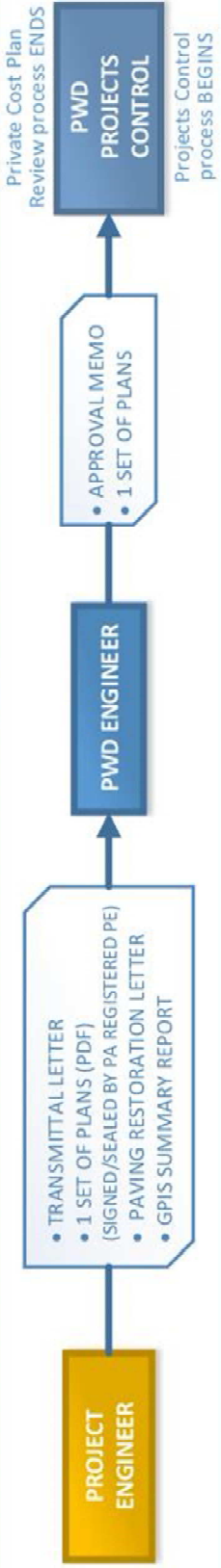
**2**  
Plan Submission



**3**  
Design Review



**4**  
PWD Internal Approval



**5**  
Final Submission

## Design and Drawing Standards

This section provides a general overview of PWD's technical design standards, contract drawing standards, and the supplemental documentation necessary for a complete Private Cost Plan Review submission to be accepted and approved by PWD. The *Water and Sewer Design Manual* provides detailed explanations and examples of PWD standard design practices and drawing standards along with a catalogue of reference information for designing water and sewer infrastructure in the City of Philadelphia. For green stormwater infrastructure design guidelines, the *GSI Planning and Design Manual* serves the same function.

Access PWD's *Water and Sewer Design Manual* at:

<http://www.phillywaterdesign.org/>

Access PWD's *GSI Planning and Design Manual* at:

<http://www.philadelphiawater.org/gsi/planning-design/manuals.html>

All plans submitted for Private Cost Plan Review must include the following information:

- Existing and proposed streets, rights-of-way, and property lines
- Existing and proposed buildings, curb adjustments, or any permanent structures located in the public or PWD drainage/water main rights-of-way such as stairs or window wells.
- All existing and proposed utilities, labeling the location, size, and depth of each utility; water and sewer material information should be included in the labels. Existing utility information in the project area can be obtained through PA One Call.
- All areas to be maintained by a Homeowners Association or other Non-City entity shall be clearly defined on the plans. All piping and/or drainage structures that are to be maintained by the owner must be labeled as 'PRIVATE'.

**The submitted plans are expected to be a complete and accurate presentation of the existing and proposed conditions of the project site. It is the responsibility of the Project Engineer to ensure a professional standard of care in verifying the accuracy of the presented information**

## Water Main Design Standards Overview

### Water Main Drawing Standards

<i>Sheet Size</i>	:	Arch D (24"x36")
<i>Plan Scale</i>	:	1" = 20'
<i>Cross Section</i>	:	At least one cross section per sheet at most critical section Scale: 1/4" = 1' ; 1/8" = 1' for large streets
<i>Profile</i>	:	Not required on water sheets unless otherwise directed by PWD
<i>Title Block</i> (see example on p.16)	:	Three signatures must appear in the title block on the first sheet: <ul style="list-style-type: none"><li>• Project Engineer</li><li>• General Manager of PWD Planning &amp; Engineering</li><li>• PWD Water Commissioner</li></ul> <p><i>Note: All subsequent sheets must have the Project Engineer's signature</i></p>
<i>Water Notes</i>	:	<i>General Water Main Notes</i> —These notes, located in the appendix of this document, should appear on a dedicated notes sheet or on the first plan sheet in the set.  <i>Standard Water Notes</i> —These notes, located in PWD's <i>Water and Sewer Design Manual Appendix II.i</i> , should appear on each plan sheet with proposed water main.
<i>PWD Work No.</i>	:	Issued by PWD. Must appear in the Title Block on all sheets.
<i>Corrosion Control</i> (if applicable)	:	Plan and Detail sheets provided by a PWD approved corrosion control Consultant must be included in the full set of plans.

In addition to the symbols, labels, and information required on the plans as stated in the PWD *Water and Sewer Design Manual*, the following pertinent information unique to Private Cost Plan Review submissions should be shown on the plans:

- Proposed and existing building(s) and surface features,
- Proposed service laterals with labels (service type, size, and pipe material),
- Proposed curb adjustments,
- Meter pits, backflow prevention, valves/curbstops

Projects proposing water main reconstruction will require a corrosion control study to be performed by a PWD approved corrosion control consultant.

## Corrosion Control Requirements

The corrosion control engineering service shall be paid for by the Developer directly to the PWD approved corrosion control consultant. An electronic copy of the corrosion control report and corrosion control plans (if required) must be provided to the PWD Engineer to receive final approval.

Once the water main design is found to be substantially complete, the water sheets must be provided to a PWD approved corrosion control consultant for the design of special corrosion control measures. The corrosion consultant will perform a field investigation and draft a report outlining the results and their recommendation for corrosion control measures: either “standard” corrosion control—sand backfill and coating of joints—or “special” corrosion control measures, in which case specifications, cost estimates, and/or plans will be provided for inclusion in the contract documents. All corrosion control labor, equipment, and materials must be furnished and installed in accordance with PWD Standard Specification W-23, found in the appendix of PWD’s *Standard Details and Corrosion Control Specifications for Water Mains*. Any cathodic protection system installed or repaired must be tested in accordance with NACE standards and PWD *Standard Specification W23.11*.

**See PWD *Water and Sewer Design Manual* for more information regarding PWD Approved Corrosion Consultants.**

## Sewer Design Standards Overview

### Sewer Drawing Standards

<i>Sheet Size</i>	:	Arch E1 (30"x42")
<i>Plan Scale</i>	:	1" = 20'
<i>Cross Section</i>	:	At least one cross section per sheet at most critical section Scale: ¼" = 1'; ⅛" = 1' for large streets
<i>Profile</i>	:	Scale: Horizontal : 1" = 20' Vertical : 1" = 5'
<i>Title Block</i>	:	<i>See Water Main Drawing Standards</i>
<i>Sewer Notes</i>	:	<i>General Sewer Notes</i> —These notes, located in the appendix of this document, should appear on a dedicated notes sheet or on the first plan sheet in the set.  <i>Standard Sewer Notes</i> —These notes, located in PWD's <i>Water and Sewer Design Manual Appendix II.m</i> , should appear on each plan sheet with proposed sewer infrastructure.
<i>PWD Work No.</i>	:	Issued by PWD. Must appear in the title block on all sheets.
<i>Benchmark Info</i>	:	Indicate nearest Highway District Benchmark location and City Datum elevation conversion. <i>See Water and Sewer Design Manual</i> for more information.
<i>Soil Boring Logs (if applicable)</i>	:	Boring locations should be marked on the plans and the relevant boring logs attached as a separate sheet.
<i>Green Stormwater Infrastructure (GSI) (if applicable)</i>	:	If the scope of the work includes any Green Stormwater Infrastructure it should be drawn and labeled on the plans in half tone, see PWD's <i>Water &amp; Sewer Design Manual Appendix II.n</i> for GSI symbology.

In addition to the symbols, labels, and information stated in the PWD *Water and Sewer Design Manual*, the following information unique to Private Cost Plan Review submissions should be shown on the plans:

- Proposed and existing building(s) and surface features,
- Proposed curb adjustments,
- Proposed service laterals with labels (service type, size, FAIs and material),
- Label connections (type, size, material, and invert elevation),
- Manhole labels (MH #, Rim El., Inv. In El., Inv. Out El., Change in size and/or grade if applicable),
- Prop. Concrete Collars (Inv. El.),
- Details for manholes, connections, special foundations, or any unique structures not found in PWD's *Standard Details and Specifications for Sewers*

## Boring Requirements

For new sewer construction, a complete soil investigation shall be performed with borings taken at least once for every 150 feet of sewer along the proposed alignment. The results will be evaluated as follows:

- In cases where the standard penetration resistance value (or N-value) is consistently 17 blows per foot or greater, pile supports are not required. Where soil conditions are poor, the sewer along with the laterals, inlet pipes, inlets and manholes will require pile supported foundations in their design and construction.
- In areas of moderately poor soils, other means of support may be required. Each case shall be evaluated on an individual basis.

Auger Boring Specifications may be provided upon request.

**See PWD *Water and Sewer Design Manual* for more information regarding pile criteria.**

# GSI Design Standards Overview

## Green Stormwater Infrastructure Drawing Standards

<i>Sheet Size</i>	:	Arch E1 (30"x42")
<i>Plan Scale</i>	:	1" = 10'
<i>Cross Section</i>	:	One cross section per sheet minimum at most critical section Scale: ¼" = 1'
<i>Profile</i>	:	Scale: Horizontal : 1" = 10' Vertical : 1" = 5'
<i>Title Block</i>	:	See <i>Water Main Drawing Standards</i>
<i>GSI Notes</i>	:	<i>General GSI Notes</i> —These notes, located in the appendix of this document, should appear on a dedicated notes sheet or on the first plan sheet in the set.
<i>PWD Work No.</i>	:	Issued by PWD. Must appear in the title block on all sheets.
<i>Benchmark Info</i>	:	Indicate nearest Highway District Benchmark location and City Datum elevation conversion. See <i>Water and Sewer Design Manual</i> for more information.
<i>Soil Boring Logs (if applicable)</i>	:	Boring locations should be marked on the plans and the relevant boring logs attached at the end of the plans.
<i>Green Stormwater Infrastructure Labels</i>	:	SMPs must be labeled in conformance to PWD's standard list of SMP types defined in the <i>GSI Planning and Design Manual</i> . GSI Maintenance will assign unique IDs to components such as inlets, pipes, cleanouts, etc. that must be included on final design plans.

In addition to the symbols, labels, and information stated in the PWD *GSI Planning and Design Manual*, the following information unique to Private Cost Plan Review submissions should be shown on the plans:

- Proposed and existing building(s) and surface features,
- Proposed curb adjustments,
- Proposed service laterals with labels (service type, size, and pipe material),
- Label connections (type, size, and material if applicable),
- Manhole labels (MH #, Rim El., Inv. In El., Inv. Out El., Change in size and/or grade if applicable),
- Prop. Concrete Collars (Inv. El.),
- SMPs: common drains, retention/detention basins, underground piping, swales, seepage pits,
- Details for manholes, connections, special foundations, or any unique structures not found in PWD's *GSI Planning and Design Manual*



# Standard PWD Titleblock

NOTICE:  
PURSUANT TO THE REQUIREMENTS OF PENNSYLVANIA ACT 121 OF 2008,  
THE CONTRACTOR SHALL CONTACT THE PENNSYLVANIA ONE CALL SYSTEM AT 1-800-242-1776 OR BIT,  
AT LEAST 3 DAYS PRIOR TO EXCAVATION.

HIGHWAY DISTRICT NO. XX WARD NO. XX  
SURVEY DISTRICT NO. XX WATER PLATE NO. XX DRAINAGE PLAT NO. XX  
ONE CALL SERIAL NO. XXXXXXXX GPS NO. G2DXX-XXXX

**PRIVATE COST**  
WATER MAIN RELOCATION

ON STREET  
FROM  
CROSS STREET TO CROSS STREET

Scale(s) on current sheet

CITY OF PHILADELPHIA  
WATER DEPARTMENT

FOR [ENGINEERING FIRM]  
GENERAL MANAGER, PLANNING AND ENGINEERING  
WATER COMMISSIONER

APPROVED  
APPROVED  
APPROVED

WORK NO. X-90XXX-XX (X SHEETS)  
SHEET NO. W-X OF X SHEETS

PA REGISTERED  
PREPARED FOR  
( DEVELOPING AGENCY )  
BY  
( ENGINEERING FIRM )  
CONSULTING ENGINEERS  
PHILA., PA  
MONTH DAY YEAR  
DATE

PROJECT MANAGER DATE

Placeholder for project contact signature. Must be signed & dated on final submission

Relevant plan information, to be provided by PWD Engineer upon request

Include all relevant One Call serial numbers provided on PA One Call ticket

Include GPS application number corresponding to project application

Private Cost work description

Placeholder for PE seal, project stakeholder information, and date

ON, TO, and FROM Streets as shown on current plan sheet

PWD Signatories ( first sheet only )

PWD Work No. & total # of sheets in set

Current (W/S/G) sheet out of total sheets of that type (Water, Sewer, Green)

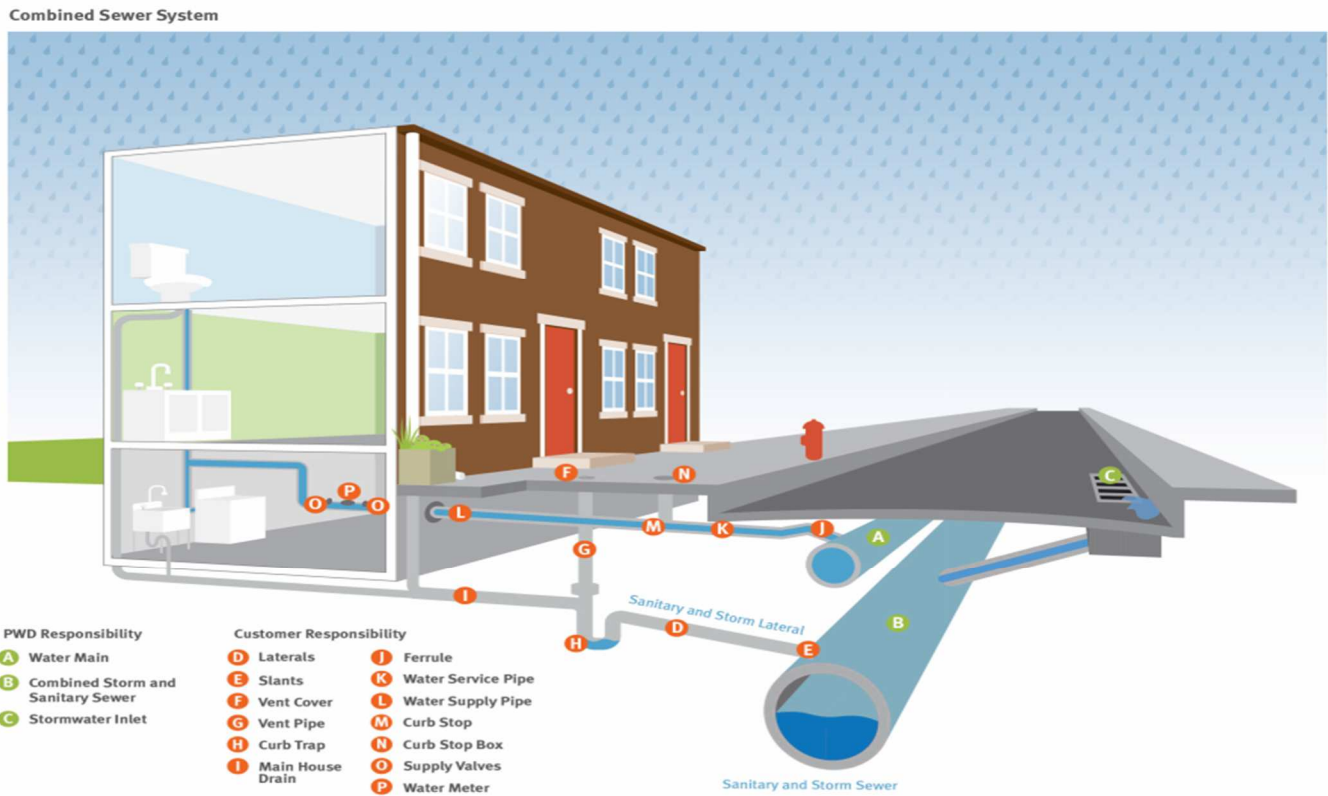
## Additional Design Considerations

### Lead Service Line Replacement Program

In the case of lead pipes, Philadelphia Water Department is committed to helping customers remove their lead service lines. This policy is intended to account for any inadvertent impact on the customer from a partial lead service line replacement (to the curb stop). Additional information about the Lead Service Line Replacement Program can be found here:

<http://www.phila.gov/water/wu/drinkingwater/lead/Pages/programs.aspx>

**Private Cost Projects that impact water service lines are subject to the procedures outlined in PWD’s Lead Service Line Replacement Program**



*Typical Water and Sewer System Components — The picture above exhibits the standard arrangement of water and sewer utilities for a typical residential home in Philadelphia. This exhibit shows a combined system where both storm and sanitary drainage goes into one common sewer pipe in the street.*

## ADA Ramp Design and Pavement Adjustments

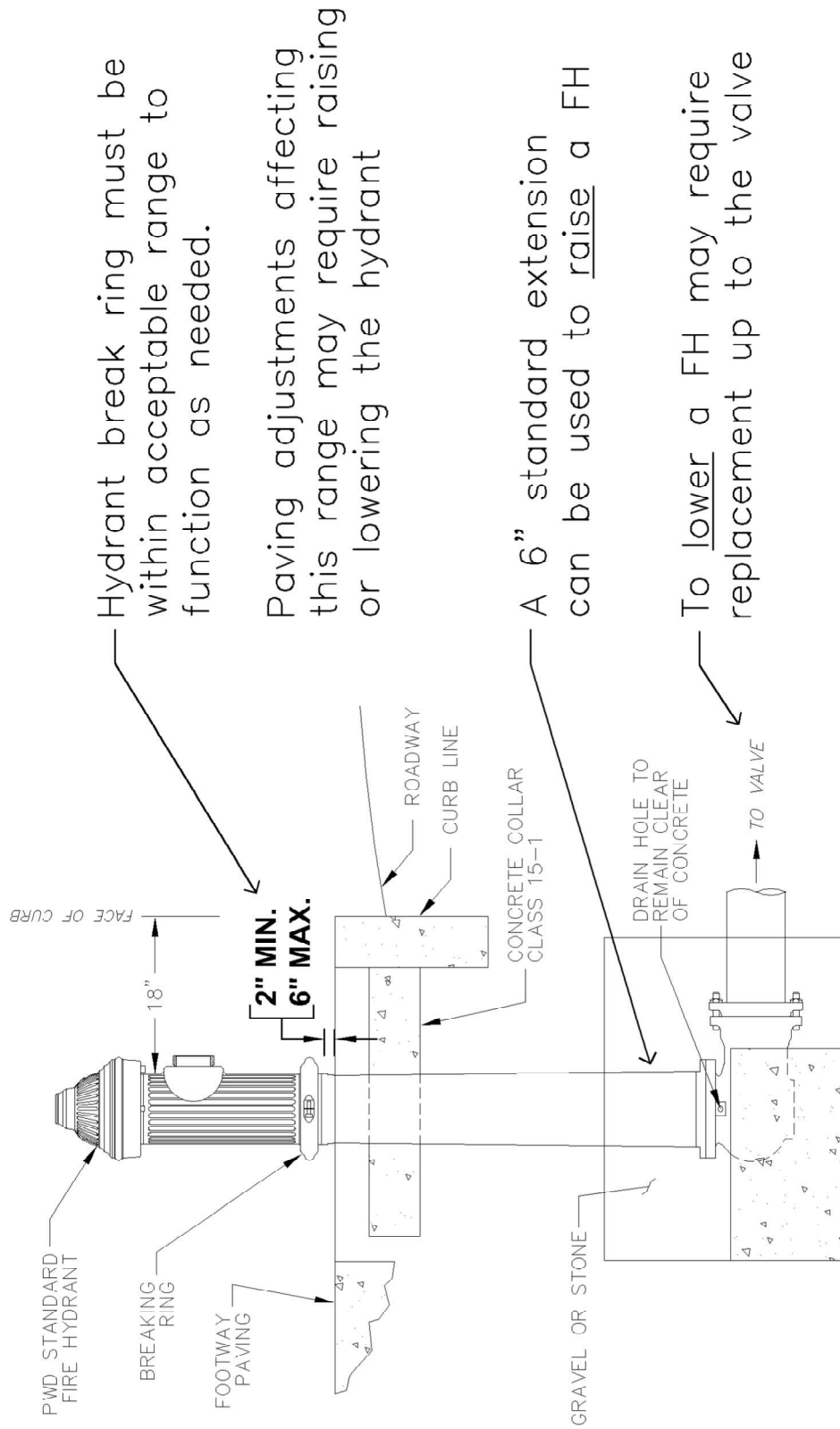
It is common in any project disturbing the Right-of-Way to incur some level of sidewalk restoration or ADA ramp improvements. While the Philadelphia Streets Department is the authority responsible for the proper design and construction of these ROW features, PWD infrastructure may be impacted incidental to these ROW changes and will inform the design such that their infrastructure is protected and maintained. This section is intended to provide guidance to designers as they consider incidental effects on existing PWD infrastructure resulting from improvements and related activities in the ROW. With the exception of raising/lowering castings, any adjustments that need to be made to PWD infrastructure as a result of the proposed paving adjustments requires a Private Cost contract.

The following is a list of typical ways PWD infrastructure can be impacted by a pavement adjustment:

- PWD castings that need to be raised/lowered to the proposed elevation to be flush with finished grade
- Fire hydrants—specifically the “break ring” mechanism—that are required to be an acceptable distance from the finished surface
- PWD inlets that must be maintained and protected in their existing state to guarantee continued function and integration into the existing roadway, curb, and sidewalk. Should it not be technically feasible to design the ADA ramp around an inlet, or the low point of the corner shifts as a result of the design, the Project Engineer may be required to enter into the Private Cost contract to relocate any inlet(s).
  - Inlets made of brick are highly sensitive to construction activities and it may not be practicable to protect and maintain this type of inlet from disturbance. Determining the proper course of action for any brick inlets will come at the direction of the PWD Engineer.

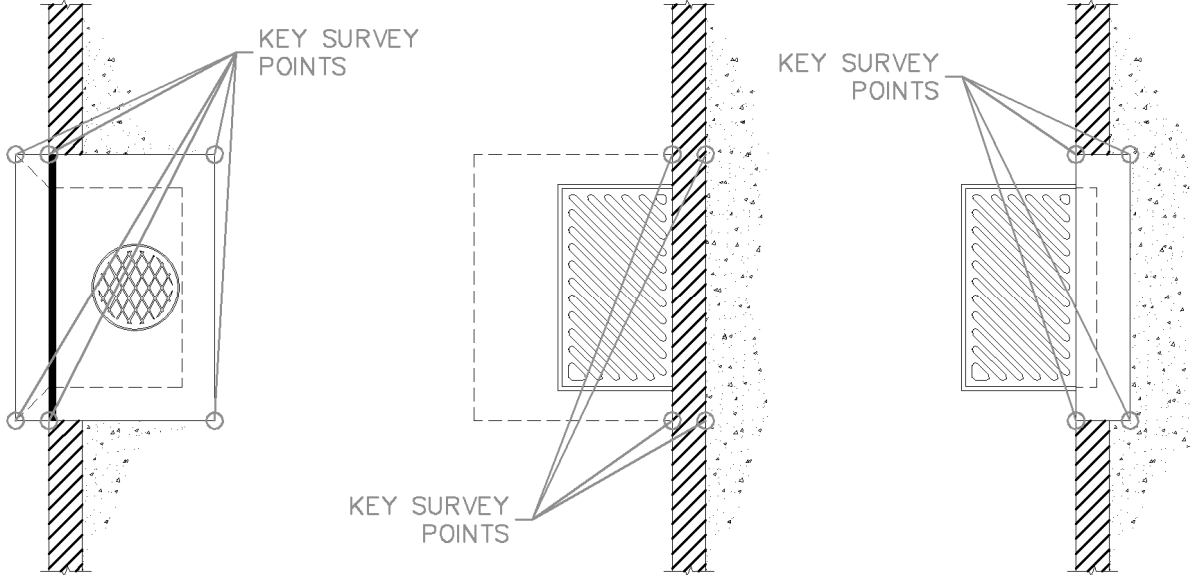
The following exhibits are intended to supplement these design considerations as they relate to a typical PWD fire hydrant and standard inlet.

## Additional Design Considerations, cont.



**NOTE: DIMENSIONS REMOVED FROM DETAIL FOR CLARITY. REFER TO PWD STANDARD DETAILS FOR WATER MAINS FOR FULL DETAIL.**

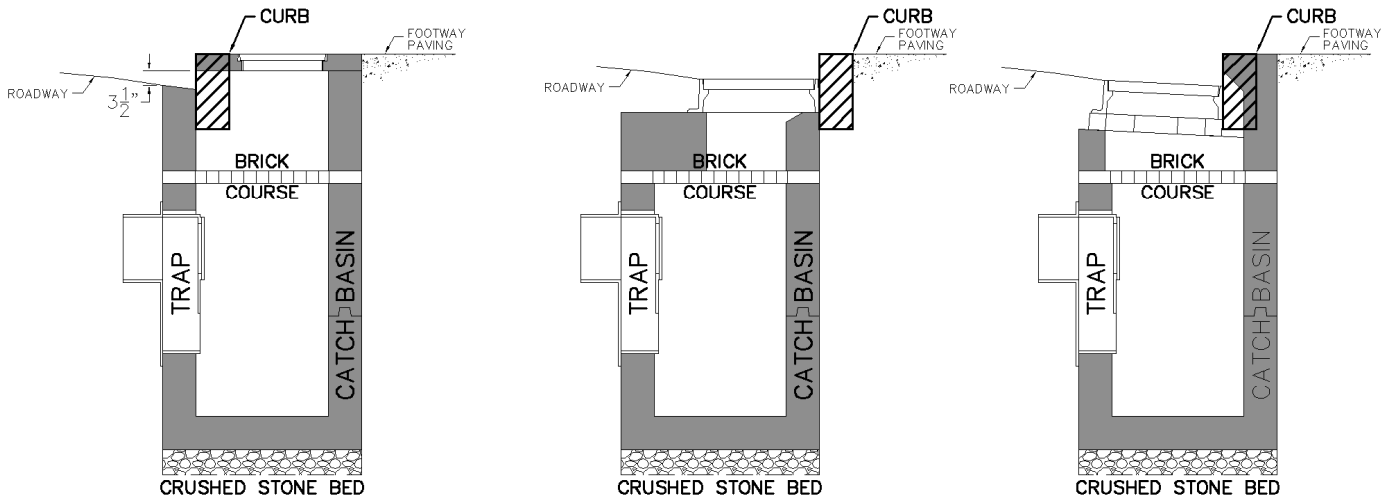
## Additional Design Considerations, cont.



**OPEN MOUTH INLET**

**GUTTER GRATE INLET**

**OPEN MOUTH GRATE INLET**



Paving Adjustments adjacent to inlets must take into consideration the surface features of various PWD inlet types. It is the responsibility of the Project Engineer to guarantee a sidewalk that is ADA compliant and free of tripping hazards.

## Permit Requirements

Most of the work that is subject to a Private Cost Plan Review also requires certain permits and ancillary approvals. Work proposed in the public right-of-way will require a Street Opening Permit. Any disturbance of the public right-of-way will also require a Paving Restoration Letter from the Street Department's Transportation Unit, which outlines how the excavation of the proposed work must be restored. If there are any PWD service connections proposed on the project, a Connection Permit will be necessary. Discharge Permits are required should a project require disposal into the PWD collector system as part of their flow management plan.

### Street Opening Permit

#### *PHILADELPHIA STREETS DEPARTMENT*

A Street Opening Permit is obtained through the Streets Department's *Guaranteed Pavement Information System (GPIS)*. The Street Opening Permit is required by the Philadelphia Code and Streets Department Regulations. It is issued by the Streets Department to excavate within the City right-of-way. Along with the initial review letter, PWD will provide the Project Engineer with a notice that explains how to access GPIS and the steps necessary to obtain a permit. This notice should be filled out, signed, uploaded to GPIS and returned to the PWD Engineer as part of the next submission.

If company/firm does not have a GPIS account, please submit form to: [StreetsROW.GPISadmin@phila.gov](mailto:StreetsROW.GPISadmin@phila.gov) .

### Paving Restoration Letter

#### *PHILADELPHIA STREETS DEPARTMENT*

Prior to PWD's final approval of the Private Cost plans, the Project Engineer must provide a Paving Restoration Letter to the PWD Engineer. To initiate the process of obtaining a Paving Restoration Letter, the Project Engineer must send the substantially complete plans, a transmittal letter, the Developer's contact information, and completed GPIS notice to:

**Dhanya Jacob**  
**Philadelphia Streets Department**  
**Transportation Planning & Analysis**  
**p: (215) 686-7945      e: [Dhanya.Jacob@phila.gov](mailto:Dhanya.Jacob@phila.gov)**

A review of the plans submitted to Streets may elicit a Private Paving Agreement, which will supersede the Paving Restoration Letter (*ref Philadelphia City Code 11-503/4*). In this instance, a letter outlining this agreement will be issued by Streets and will substitute the Paving Restoration Letter.

## Connection Permit

### *PHILADELPHIA WATER DEPT. – WATER TRANSPORT RECORDS*

The process of obtaining a Connection Permit, which is required to receive a Plumbing Permit, starts with PWD's Water Transport Records Unit. The application and permitting process is completed electronically through eCLIPSE.

**Philadelphia Water Department—Water Transport Records**  
**1101 Market Street, 2nd Floor**  
**Philadelphia, PA 19107-2994**  
**p: (215) 685-6271 e: [WTR@phila.gov](mailto:WTR@phila.gov)**

Access the eCLIPSE log in portal at

<https://eclipse.phila.gov/>

Access PWD's *Sewer Connections and Repair Manual* at

<http://www.phila.gov/water/PDF/SewerConnectionManual.pdf>

## Discharge Permit(s)

### *PHILADELPHIA WATER DEPT. – INDUSTRIAL WASTE UNIT*

Primarily on sewer reconstruction projects, Discharge Permits, both groundwater and wastewater, may be required to facilitate proper construction of the sewer. PWD's Industrial Waste Unit issues permits regulating industrial, commercial and non-routine discharges to the City's sewers and wastewater treatment plants. All permits issued by IWU establish specific discharge, monitoring and reporting requirements. Failure to obtain the necessary permits or violation of permit conditions may be punishable by monetary fines.

Additional information on discharge permits can be found here:

<http://www.phila.gov/water/wu/wastewater/pages/industrialwaste.aspx>

# Construction Requirements

Throughout construction of the infrastructure outlined on the Private Cost plans the Developer, or agent acting on behalf of the Developer throughout construction, must coordinate with PWD's Construction Unit via the PWD Inspector assigned to the project. The PWD Inspector assures the quality of the means, methods, and materials used by the contractor to construct the facilities. PWD ownership of the installed facilities is contingent upon the acceptance issued by the PWD Inspector. The PWD Inspector is also responsible for coordinating the testing and inspection of any installed facility.

*THE CONTRACTOR PERFORMING THIS WORK IS TO NOTIFY THE PWD CONSTRUCTION DIVISION, 1101 MARKET STREET, 2ND FLOOR, PHONE (215) 685-6345, AT LEAST 7 DAYS IN ADVANCE FOR ASSIGNMENT OF AN INSPECTOR TO THE JOB. WATER SHUT-OFF TO BE REQUESTED BY THE INSPECTOR ONLY.*

*A PRE-CONSTRUCTION MEETING WITH PWD CONSTRUCTION REPRESENTATIVES MUST BE HELD AT LEAST 7 DAYS PRIOR TO STARTING CONSTRUCTION.*

The following procedures must be coordinated with the assigned PWD Inspector:

**STREET OPENING PERMIT**—the Developer, or agent acting on behalf of the Developer throughout construction, is responsible for providing the PWD Inspector with a copy of the Street Opening Permit obtained through GPIS prior to starting construction.

**VALVE CLOSURES**—coordinate with the PWD Inspector to have the necessary valves closed so the contractor may proceed with construction on the isolated portion of water main. Contractors are not permitted to operate water main valves on PWD's system.

**SUBMITTAL PROCESS**—the contractor must submit to the PWD Construction Engineer for review all information required by the contract documents. Shop drawings submitted for review shall bear the contractor's stamp of approval which shall constitute certification that the contractor has verified all construction criteria, dimensions, materials, and similar information and checked each drawing for completeness, coordination, and compliance with the contract documents.

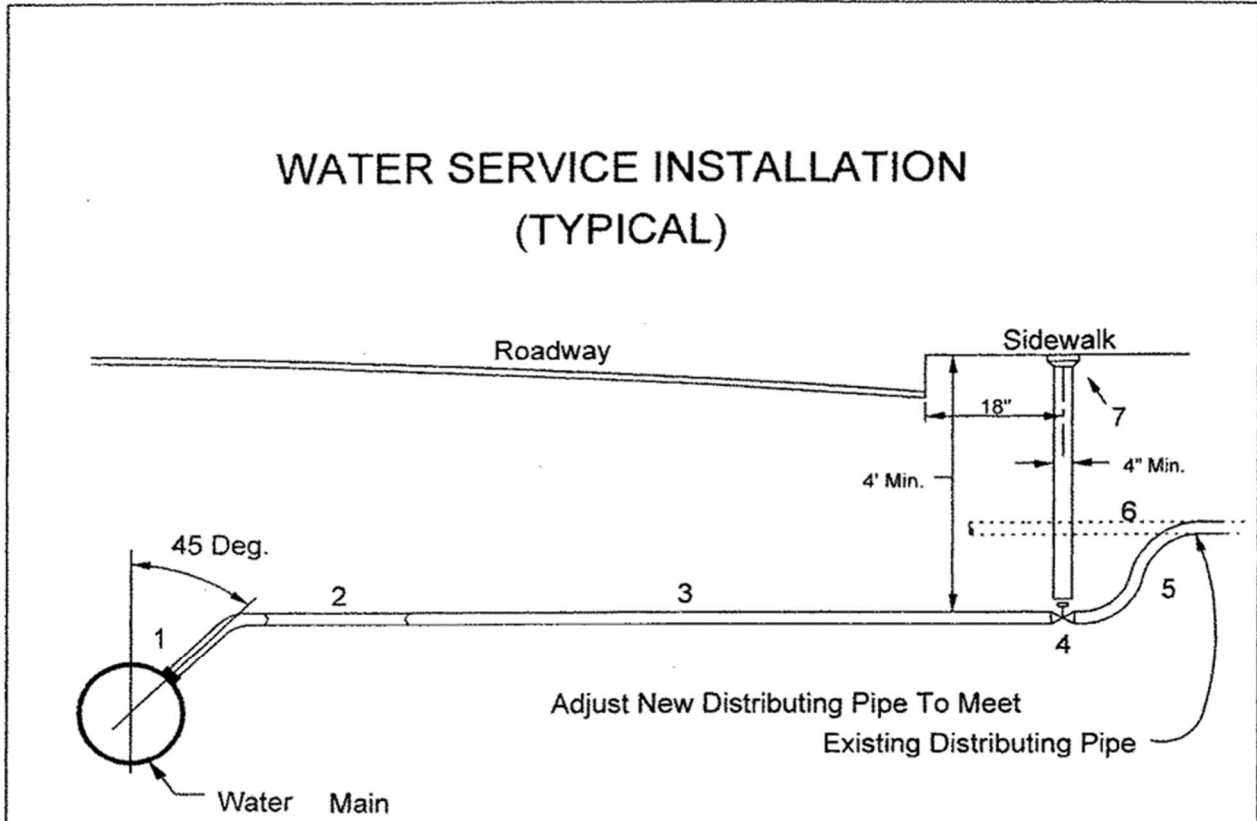
**PRESSURE TESTING & DISINFECTION**—before the newly constructed water main is connected to the existing water system, it is the responsibility of the contractor to pressure test and disinfect the water main as outlined in PWD's *Standard Specifications W-22 for Disinfecting Water Mains*, which can be provided upon request.

**SEWER VIDEO**—prior to PWD's acceptance of any newly constructed sewer, the contractor must coordinate with the PWD Inspector to perform a post-construction video inspection to ensure the quality and integrity of the sewer.

**AS BUILTS**—coordinate with the assigned PWD Inspector to have PWD's Survey Unit collect the necessary information to create as-built drawings. It is necessary to maintain an accurate record of the customary as-built location data for all underground construction.



# Water Service Installation Sketch



Adjust New Distributing Pipe To Meet Existing Distributing Pipe

### WATER SUPPLY

- 1. Std. Corporation Stop Ferrule, Size Same As Meter 3/4" Min.
- 2. Expansion Loop
- 3. Water Service Pipe
- 4. Curb Stop
- 5. New Distributing Pipe
- 6. Existing Distributing Pipe
- 7. Curb Stop Box



## WATER SERVICE INSTALLATION SKETCH

DRAWN BY:	JP	DATE:	3/16/94
CHECKED BY:	SF	PAGE NO.	1 of 1

# Deliverables Checklist

## Initial Submission (To PWD Design Unit)

- One (1) transmittal letter
- One (1) electronic copy (PDF format) of plans sent to [PWD.EDR@phila.gov](mailto:PWD.EDR@phila.gov)

## Final Submission (To PWD Design Unit)

- One (1) transmittal letter
- One (1) set of plans (PDF format) stamped and signed by a registered PE
- One (1) electronic copy of:
  - Stamped and Sealed drawings (PDF format)
  - Design drawings files (AutoCAD format)
  - Corrosion control report in (PDF format) (water only)
  - *Project Summary Report* generated from GPIS (see GPIS notice)
  - Paving Restoration Letter
  - HydroCAD Model (green only)

## Paving Restoration Letter (To Streets Department)

- One (1) electronic copy of substantially complete Private Cost plans
- One (1) transmittal letter
- Developer's contact information
- One (1) copy of the completed *GPIS Notice*

## Developer's Agreement (To PWD Projects Control)

- Two (2) signed copies of the Developer's Agreement
- One (1) copy of the Performance Bond (if required)

## PWD Construction Inspector (To PWD Construction)

- One (1) copy of the Street Opening Permit obtained through GPIS
- Submittals

# PWD Standard Notes

## Water Main Notes

1. ALL WORK TO BE DONE IN ACCORDANCE WITH THE CITY OF PHILADELPHIA WATER DEPARTMENT "WATER MAIN STANDARD DETAILS & CORROSION CONTROL SPECIFICATIONS".
2. THE CONTRACTOR PERFORMING THE WATER & SEWER INSTALLATION MUST BE PREQUALIFIED BY PWD. CONTACT MS. TRISHA GRACE OF THE PROJECTS MANAGEMENT UNIT AT (215) 685-6339.
3. THE APPROVED WORK SHALL BE DONE IN THE PRESENCE OF A PWD INSPECTOR.
4. THE CONTRACTOR PERFORMING THIS WORK IS TO NOTIFY THE PWD CONSTRUCTION DIVISION, 1101 MARKET STREET, 2ND FLOOR, PHONE (215) 685-6345, AT LEAST 7 DAYS IN ADVANCE FOR ASSIGNMENT OF AN INSPECTOR TO THE JOB. WATER SHUT-OFF TO BE REQUESTED BY THE INSPECTOR ONLY.
5. THE CONTRACTOR MUST PROVIDE OFFICE SPACE FOR USE BY THE PWD INSPECTOR DURING CONSTRUCTION.
6. A LIST OF ALL MATERIALS AND SUPPLIERS MUST BE SUBMITTED TO THE WATER DEPARTMENT CONSTRUCTION BRANCH FOR APPROVAL.
7. APPROVAL OF THESE PLANS BY THE WATER DEPARTMENT IS STRICTLY LIMITED TO THE DESIGN OF DUCTILE IRON WATER MAINS 8 INCHES IN DIAMETER AND ABOVE SHOWN WITHIN THE LIMITS OF THE CITY OF PHILADELPHIA PUBLIC RIGHT OF WAY.
8. CONTACT PWD-WATER TRANSPORT RECORDS, 1101 MARKET STREET, 2ND FLOOR, PHONE (215) 685-6270, FOR ADDITIONAL APPROVALS AND PERMITS REQUIRED FOR ALL WATER SERVICES, METERS AND CONNECTIONS TO THE EXISTING AND/OR PROPOSED PWD FACILITIES.
9. THE CONTRACTOR OR ENGINEER IS RESPONSIBLE FOR OBTAINING ALL ADDITIONAL PERMITS AND APPROVALS FROM ALL AFFECTED CITY AGENCIES AND UTILITIES.
10. CORROSION CONTROL STUDY IS NECESSARY FOR ALL NEWLY CONSTRUCTED DUCTILE IRON PIPE LOCATED WITHIN A CORRIDOR WHERE THERE EXISTS NO WATER MAIN INFRASTRUCTURE. THE STUDY AND DESIGN, IF NECESSARY, MUST BE PERFORMED BY A PWD APPROVED CORROSION CONSULTANT. INSPECTION OF NEW CORROSION CONTROL SYSTEMS WILL BE PAID FOR BY THE DEVELOPER.
11. WHEREVER EXISTING CORROSION CONTROL OF WATER MAINS IS DISTURBED, IT MUST BE RESTORED AND INSPECTED TO THE SATISFACTION OF THE PHILADELPHIA WATER DEPARTMENT.
12. PRIOR TO OBTAINING A BUILDING PERMIT, THE CONTRACTOR IS REQUIRED TO OBTAIN PWD STORMWATER MANAGEMENT APPROVAL, AND SEWAGE FACILITIES PLANNING (ACT 537) APPROVAL.
13. ANY CHANGE TO, OR DEVIATION FROM, THE FINAL APPROVED DESIGN PLANS DURING CONSTRUCTION MUST BE APPROVED BY THE ASSIGNED PWD-CONSTRUCTION DIVISION ENGINEER.
14. PLACE AND COMPACT BACKFILL IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR EXCAVATION, REFILLING, GRADING, LANDSCAPING AND REPAVING.
15. DISINFECT ALL NEW WATER MAINS IN ACCORDANCE WITH W-22 AND AWWA C651.
16. TEST NEW WATER MAINS IN ACCORDANCE WITH AWWA C600, SECTION 4. TAKE ALL NECESSARY PRECAUTIONS TO PREVENT TEST PRESSURE FROM ENTERING ADJOINING DISTRIBUTION SYSTEM. TEST DISTRIBUTION MAINS AT 150 PSI FOR AT LEAST ONE HOUR. HYDROSTATIC TEST SHALL BE COMPLETED WITH NO MEASURABLE DROP IN PRESSURE. UPON A DROP IN PRESSURE, DETERMINE THE AMOUNT OF LEAKAGE BY MEASURING THE ADDITIONAL QUANTITY OF WATER THAT IS PUMPED INTO THE MAIN TO MAINTAIN PRESSURE WITHIN 5 PSI OF THE SPECIFIED TEST PRESSURE. WHERE THE MEASURED LEAKAGE EXCEEDS THE ESTABLISHED ALLOWABLE AMOUNTS THEN THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, LOCATE AND MAKE APPROVED REPAIRS AS NECESSARY UNTIL THE LEAKAGE IS WITHIN THE SPECIFIED ALLOWANCE. REPAIR ALL VISIBLE LEAKS, REGARDLESS OF THE AMOUNT OF LEAKAGE.

## Water Main Notes (cont.)

In addition, the following notes may be required if the existing water mains are being relocated and/or abandoned:

17. THE ABANDONED WATER MAIN VALVE FRAMES AND FIRE HYDRANTS SHALL BE REMOVED AND DELIVERED INTACT TO PHILADELPHIA WATER DEPARTMENT AT 29TH & CAMBRIA STREETS.
18. FIRE HYDRANTS SHALL NOT BE CONSTRUCTED OR RELOCATED UNTIL SUCH EQUIPMENT AND LOCATIONS HAVE BEEN APPROVED BY THE WATER DEPARTMENT CONSTRUCTION DIVISION IN THE FIELD. THE CONSTRUCTION OR RELOCATION OF SUCH FACILITIES WITHOUT THE ABOVE APPROVAL WILL BE DONE AT THE RISK OF THE CONTRACTOR.
19. ALL ACTIVE SERVICES ARE TO BE RECONNECTED TO THE NEW MAIN IN ACCORDANCE WITH THE PHILADELPHIA PLUMBING CODE.
20. "D" PERMITS ARE REQUIRED FOR ALL EXISTING CONNECTIONS THAT ARE TO BE ABANDONED. PLEASE HAVE THE CONSULTANT CONTACT L&I WATER PERMIT ISSUANCE UNIT AT TEL. NO. (215) 686-2577/78.
21. THE CONTRACTOR MUST PROVIDE AT MINIMUM ONE (1) WEEK'S NOTICE PRIOR TO PERFORMING ANY WORK NEAR A PWD TRANSMISSION MAIN. ANY WORK NEAR THE PWD WATER TRANSMISSION SYSTEM MUST BE COORDINATED WITH THE LOAD CONTROL OPERATIONS ENGINEER, PHONE (215) 685-9592.
22. EQUIPMENT USED IN CONSTRUCTION SHALL BE OF SUCH WEIGHT, SIZE AND CAPACITY TO EFFICIENTLY WORK WITHOUT CAUSING INSTABILITY OR DISPLACEMENT TO THE WATER MAIN. EXISTING CAST IRON WATER MAINS ARE PARTICULARLY SUSCEPTIBLE TO THE NEGATIVE IMPACTS OF ADJACENT CONSTRUCTION WORK. NO STORAGE OF MATERIALS OR SPOILS ARE TO BE STORED OVER THE WATER MAINS.
23. THE FOLLOWING NOTES MAY BE REQUIRED IF A HPFS HYDRANT IS TO BE ABANDONED: THE CONTRACTOR SHALL REMOVE THE HIGH PRESSURE FIRE HYDRANT, AND ABANDON THE HIGH PRESSURE FIRE SYSTEM HYDRANT VALVE MANHOLE AS SHOWN ON THE CONTRACT DRAWINGS. EXCAVATE AND EXPOSE THE ENTIRE HYDRANT ABOVE AND BELOW GRADE. CLOSE THE FIRE HYDRANT VALVE. SAWCUT THE STANDPIPE AND STEM 2 FEET BELOW STREET GRADE. TIE OFF THE STEM IN ITS CLOSED POSITION TO PREVENT THE CONCRETE GETTING INTO THE ELBOW. FILL THE REMAINING PORTION OF THE STANDPIPE WITH CONCRETE. THE HYDRANT REMOVED WILL BECOME THE PROPERTY OF THE CONTRACTOR WHO IS RESPONSIBLE FOR ITS DISPOSAL. BACKFILL THE TRENCH WITH SELECT GRANULAR MATERIAL - 2RC UP TO SUBGRADE ELEVATION. COMPACT THE TRENCH, AND RESTORE DISTURBED CONCRETE CURBING AND FOOTWAY PAVING

## Sewer Notes

1. ALL WORK TO BE DONE IN ACCORDANCE WITH THE CITY OF PHILADELPHIA WATER DEPARTMENT "STANDARD DETAILS & STANDARD SPECIFICATIONS FOR SEWERS".
2. THE CONTRACTOR PERFORMING THE WATER & SEWER INSTALLATION MUST BE PREQUALIFIED BY THE PHILADELPHIA WATER DEPARTMENT (PWD). CONTACT MS. TRISHA GRACE OF THE PROJECTS CONTROL UNIT AT (215) 685-6336.
3. THE APPROVED WORK SHALL BE DONE IN THE PRESENCE OF A PWD INSPECTOR.
4. THE CONTRACTOR PERFORMING THIS WORK IS TO NOTIFY THE PWD CONSTRUCTION DIVISION, 1101 MARKET STREET, 2nd FLOOR, PHONE (215) 685-6345, AT LEAST 7 DAYS IN ADVANCE FOR ASSIGNMENT OF AN INSPECTOR TO THE JOB.
5. THE CONTRACTOR MUST PROVIDE OFFICE SPACE FOR USE BY THE PWD INSPECTOR DURING CONSTRUCTION.
6. APPROVAL OF THESE PLANS BY THE WATER DEPARTMENT IS STRICTLY LIMITED TO THE DESIGN OF SEWERS 15-INCHES IN DIAMETER AND LARGER SHOWN WITHIN THE LIMITS OF THE CITY OF PHILADELPHIA PUBLIC RIGHT OF WAY. ADDITIONAL APPROVALS AND PERMITS ARE REQUIRED FOR ALL DRAINAGE CONNECTIONS TO THE EXISTING PWD FACILITIES.
7. CONTACT PWD-WATER TRANSPORT RECORDS, 1101 MARKET STREET, 2ND FLOOR, PHONE (215) 685-6270, FOR ADDITIONAL APPROVALS AND PERMITS REQUIRED FOR ALL SEWER CONNECTIONS TO THE EXISTING AND/OR PROPOSED PWD FACILITIES.
8. THE ELEVATION OF THE EXISTING SEWER AT THE CONNECTION POINT MUST BE FIELD-CHECKED BY THE CONTRACTOR IN THE PRESENCE OF A PWD INSPECTOR PRIOR TO CONSTRUCTING THE NEW SEWER.
9. FIELD-FABRICATED WYE BRANCHES AND BENDS ARE NOT PERMITTED.
10. A LIST OF ALL MATERIALS AND SUPPLIERS MUST BE SUBMITTED TO THE PWD CONSTRUCTION BRANCH FOR APPROVAL.
11. THE CONTRACTOR OR ENGINEER IS RESPONSIBLE FOR OBTAINING ALL ADDITIONAL PERMITS AND APPROVALS FROM ALL AFFECTED CITY AGENCIES AND UTILITIES.
12. PRIOR TO OBTAINING A BUILDING PERMIT, THE CONTRACTOR IS REQUIRED TO OBTAIN PWD STORMWATER MANAGEMENT APPROVAL, AND SEWAGE FACILITIES PLANNING (ACT 537) APPROVAL.
13. ANY CHANGE TO, OR DEVIATION FROM, THE FINAL APPROVED DESIGN PLANS DURING CONSTRUCTION MUST BE APPROVED BY THE ASSIGNED PWD-CONSTRUCTION DIVISION ENGINEER AND BY THE PWD-DESIGN BRANCH PROJECT ENGINEER.
14. PWD RESERVES THE RIGHT TO REQUEST ADDITIONAL BORINGS DURING CONSTRUCTION SHOULD THE SOIL EXCAVATED IN THAT AREA APPEAR TO BE UNSUITABLE.
15. ALL SEWER WORK MUST BE PERFORMED IN TRENCHES. OPEN CUT OR BENCHING WILL NOT BE PERMITTED. OAK TIMBER SHORING MUST BE USED TO SUPPORT ADJACENT STRUCTURES AND UNDERGROUND UTILITIES, AND IN ACCORDANCE WITH OSHA STANDARDS CFR29, PART 1926-650 SUBPART – P EXCAVATIONS. ALTERNATIVE SHORING METHODS MUST BE APPROVED BY PWD-CONSTRUCTION DIVISION ENGINEER.
16. ANY TRENCH WHERE THE CUT IS DEEPER THAN 10 FEET WILL REQUIRE A DETAILED SHORING PLAN PREPARED BY A REGISTERED PROFESSIONAL ENGINEER TO BE SUBMITTED TO PWD FOR APPROVAL BEFORE WORK CAN BEGIN.
17. PLACE AND COMPACT BACKFILL IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR EXCAVATION, REFILLING, GRADING, LANDSCAPING AND REPAVING.
18. MAINTAIN AND PROTECT EXISTING INLETS. SHOULD THE EXISTING INLETS BE IN ANY WAY DAMAGED DURING CONSTRUCTION, THESE SHOULD BE REPAIRED TO THE SATISFACTION OF THE PWD INSPECTOR OR REPLACED PER PWD STANDARDS.

## Sewer Notes, cont.

17. ANY TRENCH WHERE THE CUT IS DEEPER THAN 10 FEET WILL REQUIRE A DETAILED SHORING PLAN PREPARED BY A REGISTERED PROFESSIONAL ENGINEER TO BE SUBMITTED TO PWD FOR APPROVAL BEFORE WORK CAN BEGIN.
18. PLACE AND COMPACT BACKFILL IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR EXCAVATION, REFILLING, GRADING, LANDSCAPING AND REPAVING.
19. MAINTAIN AND PROTECT EXISTING INLETS. SHOULD THE EXISTING INLETS BE IN ANY WAY DAMAGED DURING CONSTRUCTION, THESE SHOULD BE REPAIRED TO THE SATISFACTION OF THE PWD INSPECTOR OR REPLACED PER PWD STANDARDS.

In addition, the following notes may be required if existing sewers are being relocated and/or abandoned:

20. THE ABANDONED SEWER MANHOLE FRAMES AND COVERS, INLET GRATES, AND TRAPS SHALL BE REMOVED AND DELIVERED INTACT TO THE PWD SEWER MAINTENANCE YARD AT FOX STREET AND ABBOTSFORD AVENUE.
21. ALL ACTIVE DRAINAGE LATERALS TO BE RECONNECTED TO THE NEW SEWER.
22. THE ABANDONED INLET LATERAL SHALL BE SEALED AT THE CONNECTION TO THE EXISTING SEWER WITH A DOUBLE RING OF BRICK MASONRY, AND THE INLET VOID BACKFILLED WITH SELECTED EARTH MATERIAL, TAMPED TO GRADE AND PAVED.
23. THE THICKNESS OF THE EXISTING SEWER PIPE AND THE CHARACTERISTICS AND EXTENT OF THE PIPE CRADLES ARE UNKNOWN.
24. ALL PIPES 15 INCHES AND LARGER IN DIAMETER TO BE ABANDONED MUST BE FILLED WITH CONTROLLED DENSITY FILL (FLOWABLE FILL – CLASS F FLY ASH SLURRY BACKFILL) WITH A COMPRESSIVE STRENGTH OF 75 PSI MAXIMUM, IN ACCORDANCE WITH THE PENNDOT SPECIFICATION PUBLICATION 408, 2001 OR LATEST REVISION FOR FLOWABLE BACKFILL, NON-STRUCTURAL.
25. SEAL ENDS OF SEWERS TO BE ABANDONED WITH VITRIFIED PIPE STOPPERS AND OPEN ENDS OF STORM WATER CONDUITS WITH A 9" THICK BRICK BULKHEAD.

If applicable, the following notes may be used:

26. ALL PRIVATE INLETS DIRECTLY CONNECTED TO THE SEWER MUST BE TRAPPED.
27. WHEN MAKING CONNECTION TO EXISTING INLET LATERAL, CONTRACTOR IS TO VERIFY CONDITION OF EXISTING LATERAL PRIOR TO MAKING CONNECTION. IF EXISTING LATERAL IS FOUND TO BE IN POOR CONDITION, THE CONTRACTOR MUST CONSTRUCT A NEW 15" LATERAL PIPE TO THE EXISTING SEWER, AS APPROVED BY THE PWD INSPECTOR

## Green Stormwater Infrastructure Notes

1. THE CONTRACTOR PERFORMING THE GREEN STORMWATER INFRASTRUCTURE INSTALLATION MUST BE PREQUALIFIED BY THE PHILADELPHIA WATER DEPARTMENT (PWD). CONTACT MS. TRISHA GRACE OF THE PROJECTS MANAGEMENT UNIT AT (215) 685-6336.
2. THE APPROVED WORK SHALL BE DONE IN THE PRESENCE OF A PWD INSPECTOR.
3. THE CONTRACTOR PERFORMING THIS WORK IS TO NOTIFY THE PWD CONSTRUCTION DIVISION, 1101 MARKET STREET, 2nd FLOOR, PHONE (215) 685-6345, AT LEAST 7 DAYS IN ADVANCE FOR ASSIGNMENT OF AN INSPECTOR TO THE JOB.
4. THE CONTRACTOR MUST PROVIDE OFFICE SPACE FOR USE BY THE PWD INSPECTOR DURING CONSTRUCTION.
5. APPROVAL OF THESE PLANS BY THE WATER DEPARTMENT IS STRICTLY LIMITED TO THE DESIGN OF GREEN STORMWATER INFRASTRUCTURE SHOWN WITHIN THE LIMITS OF THE CITY OF PHILADELPHIA PUBLIC RIGHT OF WAY.
6. CONTACT PWD-WATER TRANSPORT RECORDS, 1101 MARKET STREET, 2ND FLOOR, PHONE (215) 685-6271, FOR ADDITIONAL APPROVALS AND PERMITS REQUIRED FOR ALL SEWER CONNECTIONS TO EXISTING AND/OR PROPOSED PWD FACILITIES.
7. FIELD-FABRICATED WYE BRANCHES AND BENDS ARE NOT PERMITTED.
8. A LIST OF ALL MATERIALS AND SUPPLIERS MUST BE SUBMITTED TO THE PWD CONSTRUCTION BRANCH FOR APPROVAL.
9. THE CONTRACTOR OR ENGINEER IS RESPONSIBLE FOR OBTAINING ALL ADDITIONAL PERMITS AND APPROVALS FROM ALL AFFECTED CITY AGENCIES AND UTILITIES.
10. PRIOR TO OBTAINING A BUILDING PERMIT, THE CONTRACTOR IS REQUIRED TO OBTAIN PWD STORMWATER MANAGEMENT APPROVAL, AND SEWAGE FACILITIES PLANNING (ACT 537) APPROVAL.
11. ANY CHANGE TO, OR DEVIATION FROM, THE FINAL APPROVED DESIGN PLANS DURING CONSTRUCTION MUST BE APPROVED BY THE ASSIGNED PWD-CONSTRUCTION DIVISION ENGINEER AND BY THE PWD DESIGN PROJECT ENGINEER.
12. PWD RESERVES THE RIGHT TO REQUEST ADDITIONAL BORINGS DURING CONSTRUCTION SHOULD THE SOIL EXCAVATED IN THAT AREA APPEAR TO BE UNSUITABLE.
13. ANY TRENCH WHERE THE CUT IS DEEPER THAN 10 FEET WILL REQUIRE A DETAILED SHORING PLAN PREPARED BY A REGISTERED PROFESSIONAL ENGINEER TO BE SUBMITTED TO PWD FOR APPROVAL BEFORE WORK CAN BEGIN.
14. PLACE AND COMPACT BACKFILL IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR EXCAVATION, REFILLING, GRADING, LANDSCAPING AND REPAVING.
15. ALL SIDEWALK AND CURBING TO BE REPLACED IN KIND ALONG FULL LIMITS OF CONSTRUCTION TO NEXT EXISTING JOINT OR AS DIRECTED BY PWD.
16. MAINTAIN AND PROTECT EXISTING INLETS. SHOULD THE EXISTING INLETS BE IN ANY WAY DAMAGED DURING CONSTRUCTION, THESE SHOULD BE REPAIRED TO THE SATISFACTION OF THE PWD INSPECTOR OR REPLACED PER PWD STANDARDS.

## Green Stormwater Infrastructure Notes, cont.

17. CONTRACTOR MUST COMPLY WITH EROSION AND SEDIMENT CONTROL REQUIREMENTS DURING CONSTRUCTION. SEE PWD REGULATION 501.3 AND 600.4, PHILA CODE S. 13-603, AND 25 PA CODE CHAPTER 102.
18. SUFFICIENT EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR AS TO PREVENT STANDING WATER OR SEDIMENTATION OF STORMWATER SYSTEMS. GREEN STORMWATER INFRASTRUCTURE SYSTEMS DETERMINED BY PWD TO BE INADEQUATELY PROTECTED AND THEREBY COMPROMISED WILL BE REPLACED TO THE EXTENT REQUIRED BY PWD (UP TO AND INCLUDING FULL REPLACEMENT) AT NO ADDITIONAL COST TO PWD.
19. CONTRACTOR IS REQUIRED TO UNDERTAKE NECESSARY MEASURES TO PREVENT SEDIMENT FROM LEAVING THE WORK SITE, TO PREVENT EROSION CONDITIONS, AND TO SUPPRESS DUST ON THE SITE AND SURROUNDING AREAS. CONTRACTOR MUST COVER AND SURROUND STOCKPILES WITH EROSION CONTROL MEASURES TO ENSURE SEDIMENT DOES NOT MIGRATE INTO THE PUBLIC ROW OR ENTER THE PUBLIC SEWER. IF CONTRACTOR IS HAND DIGGING OR EXCAVATING, CONTRACTOR MUST SWEEP WORK SITE AT THE END OF EACH WORK DAY. THE CITY MAY REQUIRE THE CONTRACTOR / OWNER TO CLEAN CITY-OWNED INLETS AND SYSTEMS AFFECTED BY NONCOMPLIANT OR FAILED E&S CONTROLS.
20. CONTRACTOR MUST INSTALL INLET PROTECTION MEASURES AT ALL INLETS ADJACENT TO OR WITHIN THE WORK AREA. INLET PROTECTION MEASURES MUST BE INSPECTED DAILY TO ENSURE PROPER PLACEMENT, AND MAINTAINED, POSITIONED OR REPLACED AS NEEDED TO ENSURE PROPER FUNCTION AND TO PREVENT FLOODING. REFER TO PWD GUIDANCE FOR APPROPRIATE MATERIALS AND PROTECTION METHODS FOR OPEN-MOUTH INLETS, HIGHWAY GRATE INLETS, TRENCH DRAINS AND CURB-CUT INLETS.
21. CONTRACTOR MUST OBTAIN PERMISSION FROM THE STREETS DEPARTMENT TO STORE ANY MATERIALS ON THE STREET.
22. ORIFICE SHOULD NOT BE DRILLED PRIOR TO AUTHORIZATION BY PWD. PWD WILL REVIEW THE RESULTS OF THE DOUBLE RING INFILTROMETER TESTS CONDUCTED AFTER SMP EXCAVATION AND WILL CONFIRM ORIFICE DIMENSIONS.
23. EROSION CONTROL MATTING SHALL BE PLACED OVER ALL SOIL SURFACES NOT STABILIZED BY PLANTING.

The following note is required if existing Green Stormwater Infrastructure is being restored:

24. THE CONTRACTOR MUST PROVIDE AS-BUILT RECORD DRAWINGS PER PHILADELPHIA WATER DEPARTMENT GREEN STORMWATER INFRASTRUCTURE AS-BUILT SURVEY & DRAFTING MANUAL REQUIREMENTS.