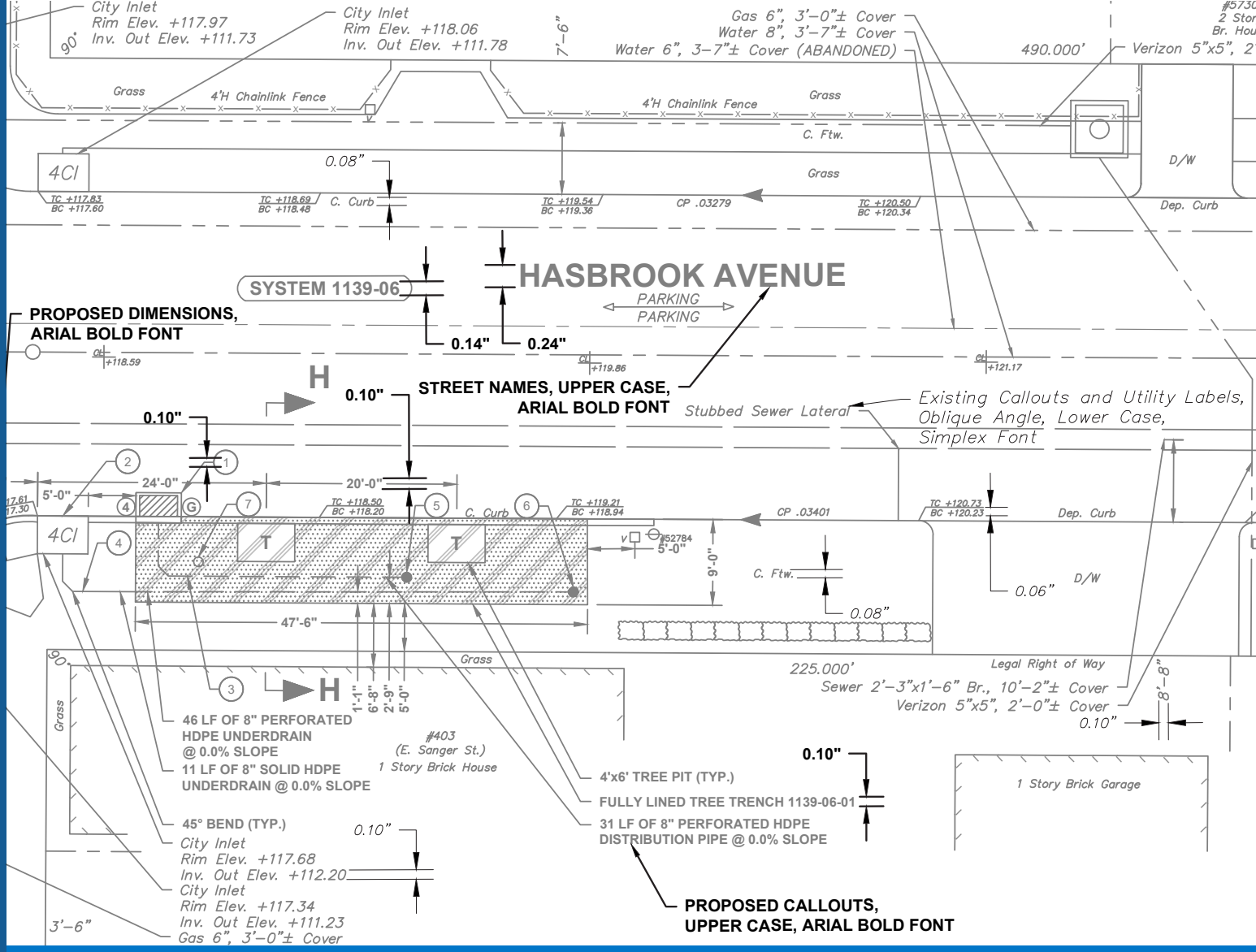


Green Stormwater Infrastructure

Survey & Drawing Standards

Version 3.1 May 2021

Amended June 2026

PHILADELPHIA WATER DEPARTMENT

Table of Contents

What's New

Effective Date: January 2021 – Additional updates from May 2021 noted with an asterisk (*)

Amended Effective Date: June 2026 – Changes are marked with red text on pages 3 and 18 of these Standards to reflect landscape terminology and plant schedule updates. Landscape sheet examples on PDF pages 93 and 94 have been revised to reflect new language and updates.

Revisions History: Listed below are the major changes that occurred between the 2018 version of the GSI Survey & Drawing Standards and this most recent 2021 version.

1.0 INTRODUCTION

- Clarified that water/sewer sheets added to a GSI planset should still follow Water/Sewer standards.

2.0 SURVEY GUIDELINES

- Added ponding in ROW to list of items to look out for when making field observations.
- Clarified that pavement markings should reflect the width/thickness measured in the field.
- Clarified that roadway paving material should only be called out if it differs from asphalt.
- Added trash cans, planter boxes, and bike racks to example list of street furniture to be identified.
- Added requirement to show downspouts if proposed system is located in adjacent ROW.
- Clarified that abandoned utilities and stubbed laterals should be shown if in the detailed survey area rather than "in the vicinity of proposed system".
- Cross-sections are only needed at proposed green inlet locations based on proposed system layouts in planning package, rather than upstream of all existing inlets.

3.0 DRAWING REQUIREMENTS

- "Centralized GSI Facility" replaced "Large Area Disconnection" terminology.
- Clarified that components in elevation views should be drafted relative to the street center line.
- Added requirement to show 2V:1H sewer zone of influence line as well as the projection lines that define limits of impermeable geomembrane liner in cross sections and profile/elevation views. These lines should be removed at PS&E and Final Design phase.
- Added guidance to not show overhead wires on G sheets (only baseplan and landscape sheets).
- Added guidance that abandoned utilities and stubbed laterals may be removed from design plans if they make the plan too crowded and are located outside of proposed area of excavation.
- In order to avoid having to make later edits, Maintenance Component ID numbers are now assigned by GSO during PS&E design review after PWD project manager confirms components are finalized.
- Removed common required elevation callouts and instead referred to Appendix A.
- Added guidance to include dimensions of horizontal offsets from existing street features that impact the location for proposed work.
- Added guidance that tree blocks should not be used for tree trenches on landscape plans.
- "Tree Component ID" replaced "Tree Location ID" terminology. Updated Tree Component ID labeling guidance.
- Updated guidance on how varying soil depth should be depicted on G-series sheets.*

4.0 CAD STANDARDS

- Updated file sharing guidance.
- Converted color-based plot style to a style-based plot style.
- Updated baseplan and design callout libraries.
- Revised existing linetypes and hatches.
- Updated block library with revisions to existing blocks and additional blocks.
- Updated example plans to reflect current drawing standards. Updates included replacing some plans to present more typical scenarios.

1.0 INTRODUCTION

This resource provides standardized survey, drawing, and Computer Aided Design (CAD) requirements that must be used when drafting contract plans for all Green Stormwater Infrastructure (GSI) projects funded and/or maintained by the Philadelphia Water Department (PWD). The following information is to be used throughout the design process by PWD staff, providers of professional engineering services contracted by PWD, and other agencies/partner organizations that are working with the Department. All PWD GSI drawings must, at a minimum, meet the standards outlined within this document.

Part One

Details the requirements for GSI surveys and baseplans. Survey work is divided into two general categories:

- **Detailed Survey** – Provides requirements for surveying on-street and off-street locations where GSI will be installed. Survey includes collecting detailed information about surface elevations, underground utilities, and surface features.
- **Drainage Area Information Survey** – Provides requirements for gathering information about the drainage areas contributing to GSI systems. Survey includes combining City Plan Information with minimal surface elevation information to delineate the terminating points of the contributing drainage area.

Part Two

Includes an overview of general drawing requirements that should apply to all projects including specific guidance on system/SMP numbering, maintenance component IDs, and drafting landscape plans.

Part Three

Provides all necessary information for using the GSI CAD Standards. The GSI CAD Standards include drafting standards, templates, standard callouts, and block libraries to standardize GSI drawings provided by GSI Unit Design Consultants.

Appendices

Provides all standard callouts, line types, lettering standards, and block libraries as well as example plans to illustrate the requirements of sheet layout, design plans, and landscape plans.

Note on Water & Sewer Standards:
This resource builds on standards defined in the PWD Department ***Water & Sewer Design Manual***. Design professionals working on PWD GSI may find it useful to familiarize themselves with the *Water & Sewer Design Manual* sections on **Contract Drawings** and **Drawing Standards**. Water/sewer sheets added to a GSI work number should follow Water & Sewer standards.

http://www.phillywaterdesign.org

2.0 SURVEY GUIDELINES

2.1 Detailed Survey Requirements

2.1.1 On-Street Extents & Elevations

1. Provide spot elevations for the houseline or protruding feature (steps, window wells, etc), top of curb, bottom of curb, and centerline for both sides of the street taken at 25-foot horizontal intervals.
2. Provide sufficient spot elevations at corners where ADA ramp replacement may be required.
3. Provide sufficient spot elevations for sidewalk grading plans for bumpout systems. See *Streets Design Guidance for GSI Projects*.
4. Where there is an obvious localized sump, provide, at a minimum, labeled spot elevations for the centerline, building line, top of curb, and bottom of curb for both sides of the street to adequately define the sumped area.
5. Provide labeled elevations for the point of curvature (PC), point of intersection (PI), and point of tangency (PT) at both the bottom and top of curb at intersections.
6. Extend the survey a minimum of 50 feet (horizontal) up both sides of any intersecting streets or alleys in either direction.
7. Show one (1) foot contours on baseplans. Contours may ultimately be removed from final design plans to improve plan clarity.
8. Survey locations for existing features as described in the following sections.

2.1.2 Off-Street Extents & Elevations

1. Provide spot elevations on a 25-foot grid, or as necessary to provide ½ foot contours, extending 50 feet horizontal outside the Detailed Survey area identified by PWD.
2. Ensure that the survey is tied into an adjacent intersection between two cartways or a cartway and a facility entrance.
3. Show ½ foot contours on baseplans. Contours may ultimately be removed from final design plans to improve plan clarity.
4. Provide surveyed locations for existing features as described in the following sections.

2.1.3 City Plan Information

1. Show curb and right-of-way (ROW) lines from City Plan. Where the curb differs from City Plan or does not exist, show the City Plan curb line as a dashed line.
2. Label the extents of ROW distance and angles.
3. Label block lengths/distances. Label should be placed adjacent to the ROW line.
4. Label all street grades, with label shown along the gutter.
5. Include cartway and footway width dimensions in both plan and section views.
6. Label street, including State Route numbers (SR#'s). If the street is not legally open, label as such in the street callout.
7. Label City Plan elevations at all corners and mid-block change in grades.
8. Place arrow heads on the curb pointing in the direction of stormwater surface flow.

2.1.4 Plan View Information

Field Observations – The final design is dependent on the information obtained during field investigations. Designers who visit the field locations should pay special attention to the visible details of the site which may be useful in making design decisions later. Examples of such items are:

- ✓ Condition of paving, signs of paving disruptions, deterioration, etc. This information will assist in establishing appropriate paving limits.
- ✓ Ponding in ROW.
- ✓ Potential construction interferences such as low bridges, tree interference, overhead wires or structures, downspouts disconnected to the ROW, etc.
- ✓ Condition of buildings (vacant, collapsing, etc.)
- ✓ Neighborhood gardens and landscaped areas

1. Benchmarks
    a. List the benchmark obtained from the Streets Department Survey District in the upper right-hand corner.
    b. If the obtained benchmark is more than one turning point away from the proposed work, then a local benchmark should be set. The local benchmark should be outside of the proposed limit of disturbance and on a permanent structure. The local benchmark should be listed in addition to the benchmark obtained from the Streets Department Survey District.
    c. Drill holes should be avoided when setting a benchmark and manhole rims should not be cited as benchmarks unless identified by chisel cut markings and outside of vehicular travel lanes.
2. Right-of-Way Information
    a. Place the name of the main street along the top of the sheet without using abbreviations.
    b. Draft pavement markings to reflect the width/thickness measured in the field.
    c. Abbreviate the words – street, road, avenue, etc. – on intersecting streets.
    d. In the street label, show the direction of traffic along with parking and bike lane information on all streets including intersecting streets.
    e. Use District Standard Measurement for all distances.
    f. Show all overhead bridges and the elevation of the underside of bridges.
3. Paving Information
    a. Identify the materials for the roadway, footway, and curb. Roadway paving material should only be called out if it differs from asphalt.
    b. Show depressed curbs and driveways.
    c. Indicate deteriorated footways and curbing.
    d. Ensure that any special patterns for the footway are identified.
    e. Label any obvious areas with drainage problems due to paving.
4. Existing Features
    a. Identify all fences and walls and note the height and material.
    b. Identify all steps, cellar doors, fire hydrants, parking meters, manhole covers, traffic signs and signals, stop signs, 20 ft. sign poles, utility poles, and all street furniture (phone booths, mailboxes, benches, trash cans, planter boxes, bike racks, etc.).
    c. Identify any landscaped areas, and, if available, the owner (i.e. community garden sign).
    d. Show all existing curb stops, sewer vent boxes, and gas valves.

5. Property Information
    a. Indicate all properties and adjacent properties with street addresses and property lines.
    b. Provide a general outline for all structures.
    c. Provide general building information including use and construction (i.e. 3-story, brick, school).
    d. Indicate where the interior of the property differs in elevation from the adjacent ROW by listing the change in elevation as a positive or negative.
    e. Provide a general use and ground cover for properties without buildings (i.e. grass, park, garden, etc.).
    f. Identify where property is vacant.
    g. Show all gates, driveways, access points, etc. for properties.
    h. Show downspouts if proposed system is located in adjacent ROW.
6. Trees
    a. Label diameter at breast height (DBH) of all existing trees inside of the survey area.
    b. Scale tree symbol to show the actual size of the tree canopy, but do not move point for trunk of tree when doing this. Canopies can be determined using aerials.
    c. Show canopies that reach over into the survey area.
    d. Trees adjacent to work within the LOD should either be listed as To Be Removed, or To Be Preserved. Trees being preserved should follow construction tree protection guidance listed in Chapter 5: Landscape Design Requirements of the *GSI Landscape Design Guidebook*.

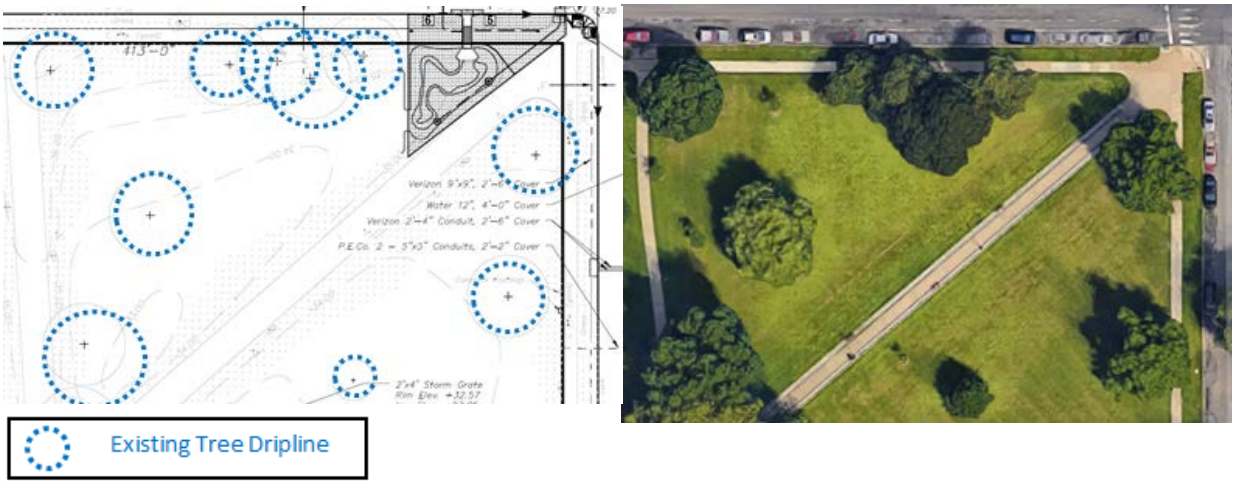


Figure 1 – Example of Tree Canopy on Plans

2.1.5 Utility Information

Note on Utility Location:
If record drawings are not available from the property owner, then field testing, Ground Penetrating Radar (GPR), Closed-Circuit Television (CCTV), or Cable Avoidance Tool and Signal Generator (CAT and Genny) may be utilized to locate and inspect on-site underground private utilities.

1. Identify all existing utilities with owner, size, and cover.
2. List size by diameter or width x height.
3. Dimension all utilities from the curb line to the center line of the utility. Offset from the curb is to vary consistently between dimensions.
4. Show utilities as a double line when their width is 42 inches or greater, other than existing water and sewer as noted below.
    a. All water mains 24 inches or greater in diameter…Double line.
    b. Sewers with a width of over 21 inches…Double line with a center dimension line.
    c. Brick sewers… Double line with a center dimension line.
    d. Stormwater sewers … Double line with a center dimension line.
5. Show all abandoned utilities in the detailed survey area.
6. Show SEPTA and railroad tracks as accurately as possible, but not dimensioned. List their status (active, inactive, or paved over).

Note on Paved Over SEPTA Trolley Tracks:
SEPTA does not provide information through PA One Call for trolley tracks that have been paved over. Designers will need to use the Highway Supervisor Plans to get this information.

7. Sewer – list pipe size as height x width and as follows:
    a. Brick sewers…Feet and inches (e.g. 2'-6" x 1'-8").
    b. Reinforced concrete pipe…Inches (e.g. 36" RCP).
    c. Box sewers (any material)…Feet and inches.
    d. Callout all existing sewer manholes including the first manhole on each connecting sewer with a field invert, rim elevation, and owner if not PWD.
    e. Show existing laterals over six (6) inches in diameter with the lateral size and material, where information is available.
    f. Show abandoned or unused laterals “stubbed laterals” in the detailed survey area. Stubbed laterals can be identified on the sewer return plans by lines drawn perpendicular to the sewer which stop at the curb line and which cannot be verified as active laterals (no apparent vent box).

8. Inlets – Collect inlet information as follows:
    a. Type
    b. Top elevation (grate elevation for HWG and OMG inlets, top and bottom of curb elevations for City inlets)
    c. Invert elevation of lateral to sewer
    d. If inlet is owned by an entity other than PWD, callout the owner.
    e. Note if inlet has a brick catch-basin.

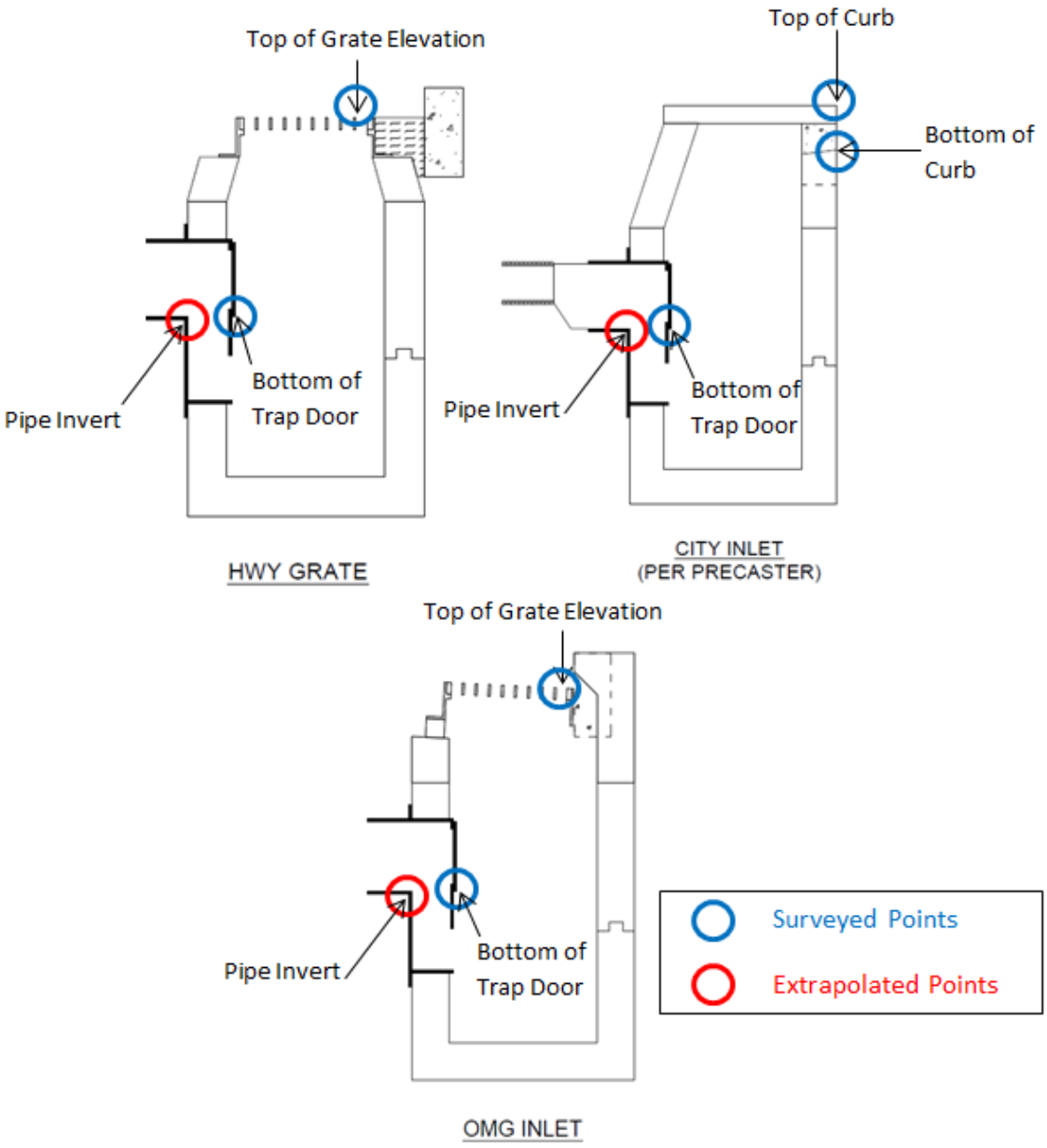


Figure 2 – Survey information for Inlets

Inlet Survey Tips:

If inlets are completely clogged, work with the PWD project manager to submit an inlet cleaning request. PWD work number and PWD project manager should be included on all requests. Inlets with some trash/debris should still be able to be surveyed using these tips.

Trap Door Measurement

If the inlet is constructed with a metal trap and trap door, the depth of the inlet lateral invert can be obtained by measuring from the top of the dripstone (BC) to the bottom of the trap door. As shown in *Figure 3* below, the bottom of the trap door is the same elevation as the lateral invert. Unless an inlet is experiencing operational issues preventing the lateral pipe from conveying stormwater, the water level in this type of inlet should always be at or below the bottom of the trap door.

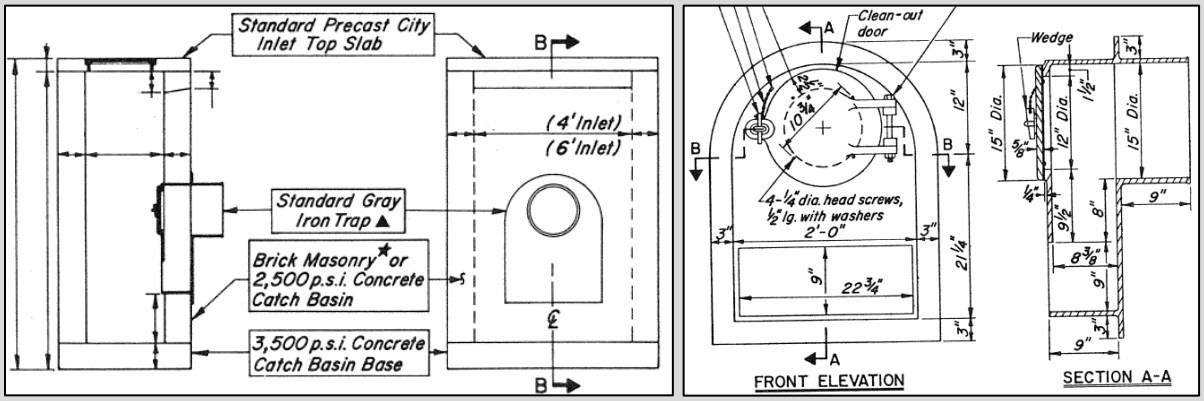


Figure 3 – Inlet with Cast Trap and Cast Trap Standard Details

Catch Basin Depth Measurement

If the inlet is constructed with a solid trap wall, the lateral invert depth must be estimated by calculating its depth based on a measurement to the bottom of the catch basin. An estimated depth is used because measuring the exact inlet lateral invert depth would require removal of the trap wall. This method employs a tool for locating the bottom of the inlet catch basin and a tape measure for gathering the depth measurement. When locating the catch basin bottom, PWD Inlet Cleaning uses a long rigid pole to push through any floatables and grit accumulated in the catch basin.

1. Locate and measure depth to catch basin bottom – Extend the measuring tool as deep into the inlet catch basin as possible. It is possible that floatable debris and grit may be within the catch basin and require some application of force to reach the catch basin bottom. After noting the point along this pole where the top of the dripstone (BC) is, remove the pole from the inlet and measure the distance between the end and that point. The measured distance will be the depth to the catch basin bottom.
2. Calculate the estimated depth of the inlet lateral invert – From the depth to the catch basin bottom the inlet lateral invert depth can be estimated by subtracting twenty-two inches (22”). This estimated difference between the catch basin bottom and the inlet lateral invert was determined by PWD Inlet Cleaning after taking a series of measurements at various inlets around the City and should be considered an estimate only.

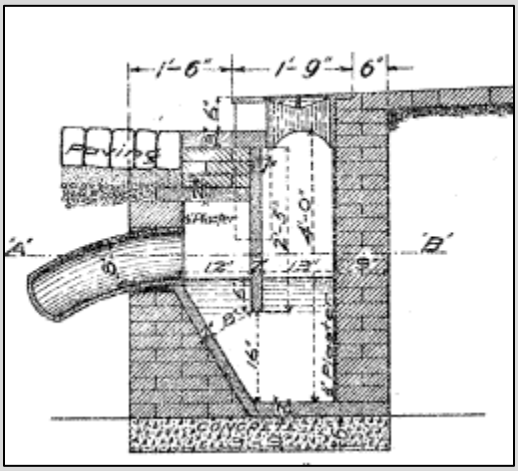


Figure 4 – Inlet with Solid Trap Wall Standard Detail

2.1.6 Cross Sections for On-Street Surveys

1. A cross section is needed at proposed green inlet locations based on proposed system layouts in planning package. Typically, this is five (5) feet upstream of an existing inlet.
2. Show all utilities in the entire cartway and both footways to the house lines. Show all abandoned utilities as well.
3. Show adjacent slopes or walls in the cross section.
4. Show basement depth of adjacent properties in cross sections. Assume 8-foot depth for the properties with unknown basement depth.
5. Where there is a railroad bridge shown on the baseplan, show a cross section of the railroad bridge with underside elevations on the baseplan (this is in addition to the standard cross section for the baseplan).
6. City Plan information, where it deviates from existing, should be shown with a dashed line.

2.2 Drainage Area Information Survey Requirements

2.2.1 Extents & Elevations

1. Drainage area information may be gathered either by survey or by City Plan information without field survey, depending on the availability of information.
2. Survey may be required where City Plan is not available electronically or where actual elevations differ from City Plan by more than six (6) inches. Where survey information is used:
    a. Collect sufficient information to determine the limits of the contributing drainage area.
    b. Continue at least 50 feet in all direction past the limits of the contributing drainage area.
    b. Provide surveyed locations for existing features as described below.
    c. List the survey benchmark in the upper corner obtained from the Streets Department Survey District.

2.2.2 City Plan Information

1. Show curb and right-of-way (ROW) lines from City Plan. Where the curb differs from City Plan or does not exist, show the City Plan curb line as a dashed line.
2. Label the extents of ROW distance and angles.
3. Label block lengths/distances. Label should be placed adjacent to the ROW line.
4. Label all street grades, with label shown along the gutter.
5. Include cartway and footway width dimensions in both plan and sections.
6. Label street, including State Route numbers. If the street is not legally open, reflect in the street callout.
7. City Plan elevations at all corners and mid-block change in grades.
    a. Assume the survey elevations are to City Plan if the existing elevations are within six (6) inches of the City Plan data.
    b. If the survey elevations are different than City Plan by more than six (6) inches, show both the existing street elevation and City Plan elevations.
    c. Place arrow heads on the curb pointing in the direction of stormwater flow.

2.2.3 End of Drainage Area Information

1. Identify the feature that terminates the drainage area with an appropriate callout such as “END OF DRAINAGE AREA: RIDGE”.
2. Identify a mid-block high point with labeled elevations for both the top of curb and gutter for both sides of the cartway.
    a. At a 25-foot offset to either side of this high point, provide labeled elevations for both the top of curb and gutter elevations for both sides of the cartway.
    b. Callout the mid-block high point as “END OF DRAINAGE AREA: MID BLOCK HIGH POINT”.
    c. Include high point as a spot elevation if separate from the centerline of the street.
3. Identify any inlet that terminates the drainage area with the inlet type and labeled elevations for both the top of curb and gutter at the inlet.
    a. If at the end of a block, ensure that both the inlet and the entire intersection are shown.
    b. Callout the inlet as “END OF DRAINAGE AREA: INLET”.

Field Observations – Look out for:

- ✓ Signs of significant ponding due to paving or curbing deterioration.
- ✓ Large contributing drainage areas such as parking lots or adjacent impervious surfaces.

3.0 DRAWING REQUIREMENTS

3.1 General Requirements

3.1.1 Drawing Size

1. All drawings must be on 30”x42” paper and conform to the *PWD Water & Sewer Design Manual* requirements except where noted below. See *Appendix F* for example plans.
    a. Sheet…30" x 42"
    b. Outer Border…29" x 41" (1/2" from top, bottom, right, and left)
    c. Inside Border…27" x 39" (1" from top, bottom, right, and left)
    d. Title Block…5" x 9" in lower right corner

3.1.2 Drawing Scales

1. Draft the location plans at an appropriate scale to fit the site content and maintain legibility.
2. Draft the baseplans at a 1”=10’ scale, as detailed site plans are required to be submitted at this scale, or as approved by the PWD project manager. Sheets should be cut in a manner consistent with proposed systems layouts to reduce the setup of the project sheets.
    a. Exception: Centralized GSI Facility projects may be drafted at a different scale. Generally, scales should be no smaller than 1:30 for legibility.
3. Draft the landscape plans at a scale no greater than 1”=10’ (so the detail of the planting design can be easily readable), unless otherwise specified by the PWD project manager. 1/4”=1’ is acceptable for smaller systems such as planters or bumpouts as long as the viewport shows enough contextual information to identify the location of the SMP. Each system should be shown on its own sheet with its corresponding plant schedule. Do not combine more than one system on a sheet or have one single plant schedule for multiple systems.
4. Draft the sections at a 1/4 " = 1'-0" scale or as otherwise appropriate and as approved by the PWD project manager.
5. Draft the profiles/elevation views at a 1”=5’ vertical scale and a 1”=10’ horizontal scale or as otherwise appropriate and as approved by the PWD project manager.

3.1.3 Plan Presentation

1. The Design Consultant’s name or company logo should be included to the left of the title block on each sheet.
2. List the completion date directly below the Design Consultant’s company name or logo. At each submission ensure that this date is updated to aid in version tracking.
3. During design development, label plans in accordance with their design phase:
    a. Preliminary Design
    b. Substantially Complete Design
    c. Pre-Final Design
4. Final plans are to be stamped by a registered Professional Engineer in the State of Pennsylvania.
5. Provide the following on each drawing above the title block as shown in the *PWD Water & Sewer Design Manual*:
    a. Ward number
    b. Sewer Plat Number
    c. Highway District Number
    d. Streets Survey District Number

   e. One Call Serial Number
   f. Outfall Number (if applicable)
6. Work numbers are to conform to the requirements outlined in *Section 1 Project Initiation* of the *PWD Water & Sewer Design Manual.* For GSI projects, work numbers should be given the prefix of (S) and the suffix of (G), for example: S-50100-G.
7. Page numbers are to be as follows:
   a. T – Index Sheet
   b. G – Green Sheets including plan, section, and profile views and all detail sheets
   c. L – Landscape Sheets including details (may not be part of final bid set*)
   d. DA – Drainage Area Sheets (not for construction*)
8. In plan view, orient the primary street horizontally across the sheet, with the north arrow oriented up in reference to the horizontal line.
9. Show connecting plan sheets with appropriate use of match lines.
10. Proposed legend must be included on all sheets.
11. Plan view, sections, and profiles/elevation views should generally be included on the same sheet for all systems.
12. For elevation views, which show a system in profile but include system components at multiple layers, the components should be drafted relative to the street center line.
13. For centralized GSI facility projects, order GSI sewer sheets such that they follow the flow pattern of the sewer to the GSI system.
13. Include a representative cross-section for every system and at all street crossings. Sections should ideally be located at the deeper end of system, particularly when located adjacent to structures, or where there are complicated configurations.
14. Show basement depth of adjacent properties in cross sections. Assume 8-foot depth for the properties with unknown basement depth. The bottom of property and its respective bearing zone should be removed at PS&E and Final Design phase.
15. In cross sections and profile/elevation views, show 2V:1H sewer zone of influence line as well as the projection lines that define limits of impermeable geomembrane liner. These lines should be removed at PS&E and Final Design phase.
15. Confirm location of section with PWD project manager prior to drafting.
16. Show actual ADA ramp location and design layout submitted to Streets Department ADA Unit including accurate placement of detectable warning surface (DWS) and landing area.
17. Show geomembrane liner and geotextile configuration of the system in plan and section views. Profile/elevation views should not show any information on liner/geotextile.
18. Do not show overhead wires on G sheets. Should only be on baseplan and landscape sheets.
19. Abandoned utilities and stubbed laterals may be removed from design plans if they make the plan too crowded and are located outside of proposed area of excavation. Confirm with PWD project manager before removing.

Note on Plan Clarity:
Designers should attempt to minimize overall plan clutter on all sheets. Particular attention should be paid to overlapping lines, text, and symbols. In cases where the proposed callouts are difficult to read, drafters should utilize background masking.

Note on Landscape Plans and Drainage Area Sheets:
PWD typically completes landscaping through a separate landscaping contract. If landscaping is done by this separate contract, then the landscape plans should not be part of the construction documents for the general construction project. Instead, the landscape plans should be provided as a separate drawing set and should not be included in the numbering of the general bid set.

Drainage Area sheets are required for PWD reference and are integrated into PWD's GIS asset tracking system. However, Drainage Area sheets are not part of the construction drawings and should not be included in the numbering of the general bid set.

3.2 Symbology & Labeling

3.2.1 General

1. Standard PWD GSI symbols and labeling must be used to the maximum extent feasible. See *Sections 3.2.2* and *3.2.3* below and *Appendix A*.
2. If features are owned and/or maintained by entities other than PWD, ownership must be added to all relevant callouts or otherwise distinguished through a note on the plans.

3.2.2 System & SMP Numbering

PWD uses a unique numbering methodology to identify GSI assets. The numbering begins on the design plans and in the design metrics report and is carried over to PWD's GIS asset tracking system and green metrics tracking database (GreenIT).

1. System labels are composed of the project ID and the system number in the format: [Project ID]-[System Number].
2. SMP labels are composed of the SMP type, the project ID, system number, and SMP number in the format: [SMP Type] [Project ID]-[System Number]-[SMP Number].
3. SMP types included in the labeling must conform to PWD's standard list of SMP types defined in the *GreenIT Design Report Definitions*.
4. Labels should be bold and prominently displayed. See example in *Figure 5* below.

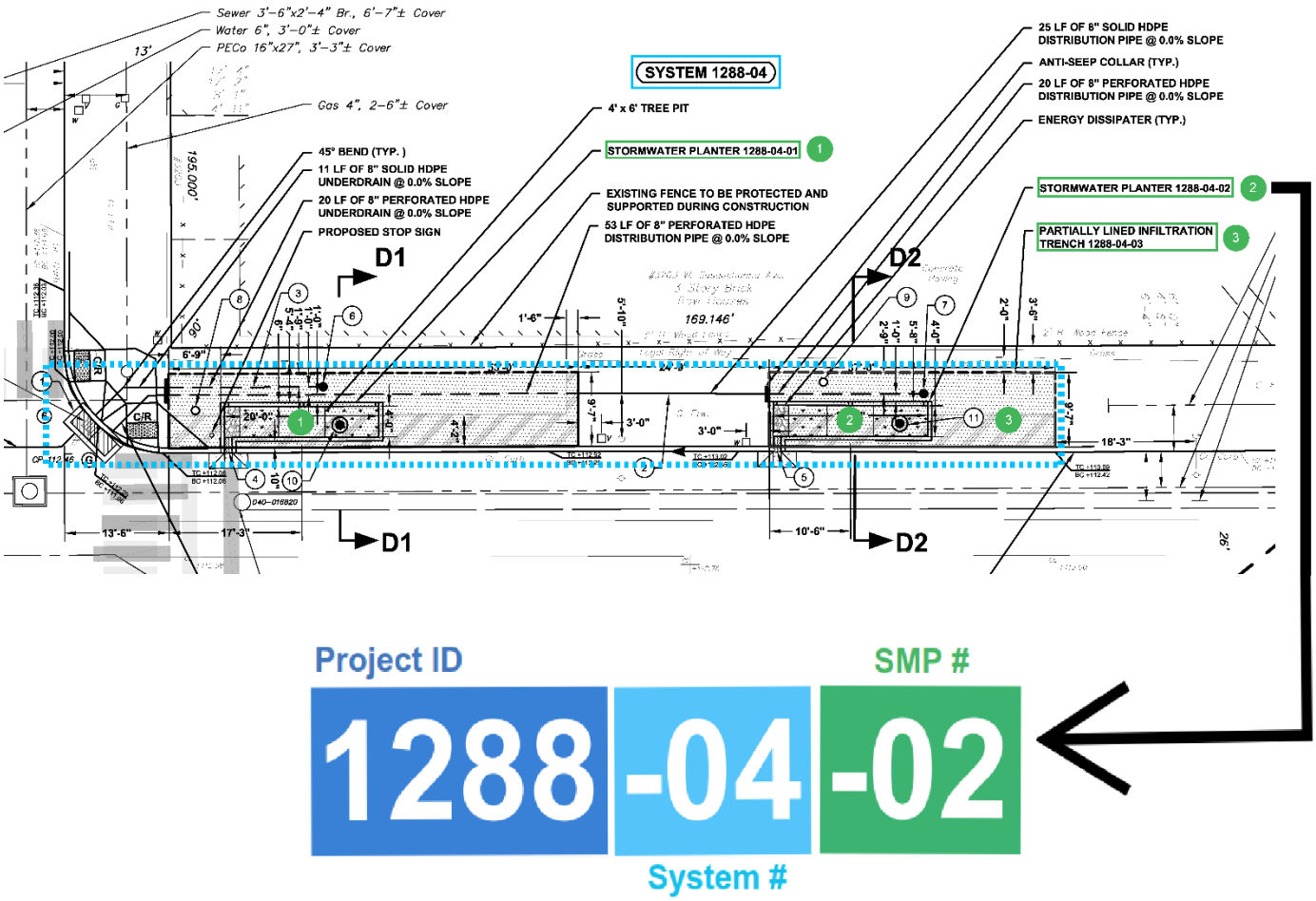
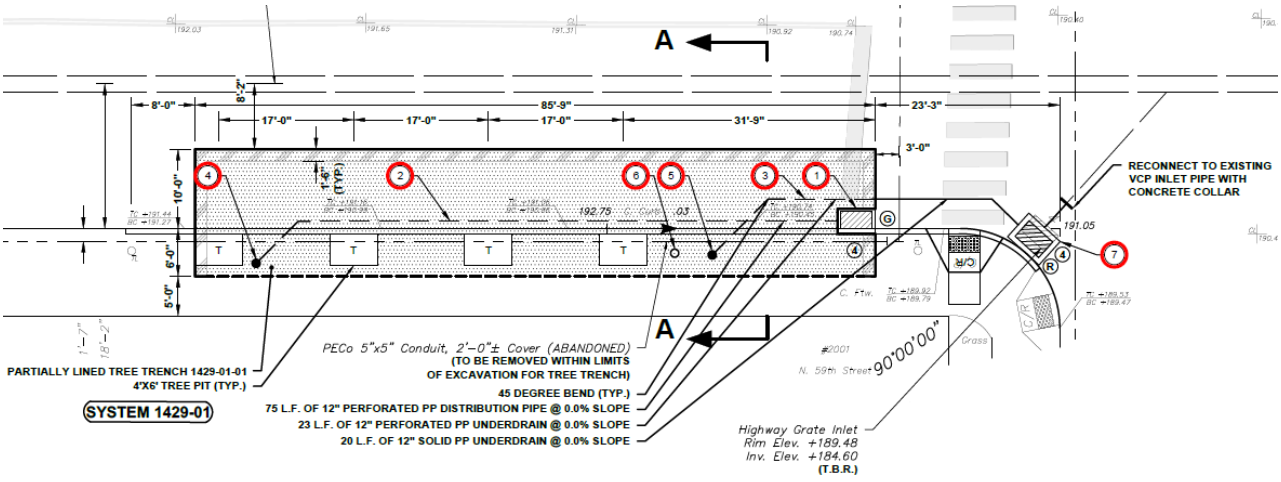


Figure 5 – Example SMP and system labels

3.2.3 Maintenance Component IDs

PWD uses a unique numbering methodology to identify GSI components, such as inlets, pipes, cleanouts, observation wells, and other structures. Similar to the system and SMP numbering, the component IDs are subsequently carried over to PWD's GIS asset tracking system. See *Appendix A* for templates of component ID callouts. *Figure 6* below provides an example of how these IDs are presented on a design plan.

1. The Design Consultant should show an empty component ID table on the Preliminary Design, Substantially Complete Design, and first PS&E Design submissions.
2. Numbers are assigned by the PWD Green Stormwater Operations (GSO) Group. GSO marks up the design plans with the appropriate component IDs during PS&E design review once PWD project manager confirms components are finalized.
3. Once received, the Design Consultant should incorporate these mark-ups into the pre-final and final plan sets.
4. Component IDs are typically included in a tabular format on the design sheets.



#	COMPONENT ID	COMPONENT TYPE	PIPE LENGTH (FT)
1	G14290101-14-05	GREEN HWY GRATE INLET	N/A
2	G14290101-20-05	DISTRIBUTION PIPE	75
3	G14290101-21-05	UNDERDRAIN	43
4	G14290101-50-05	CLEANOUT	N/A
5	G14290101-50-10	CLEANOUT	N/A
6	G14290101-51-05	OBSERVATION WELL	N/A
7	G14290101-60-05	HWY GRATE INLET	N/A

Figure 6 – Example Maintenance Component IDs 1 through 7 with reference table

3.3 Dimensions & Elevations

Comprehensive dimensioning of GSI plans is critical to achieving accurate construction and calculation of green storage metrics. Designers should ensure that sufficient dimensions are provided to determine compliance with design requirements.

1. All controlling and designed elevations must be dimensioned in section or profile/elevation view, as appropriate. Refer to standard callouts in *Appendix A* for more information on required elevations. To reduce the potential for inconsistency within the plan set, elevations should not be presented in plan view unless they are related to grading plans in which case grade elevations for new sidewalk and paving including direction and cross-slopes should be shown on plan view.
2. Lengths and widths of all proposed items must be dimensioned in plan view from a fixed reference point. The standard reference point is the Point of Intersection (PI) as the curbline is more permanent than other street features.
3. Distance between tree pits should be shown from center of pit to center of pit where tree will be planted.
4. Include dimensions of horizontal offsets from existing street features (utility poles, hydrants, laterals, buildings, fences, property line, etc.) that impact the location for proposed work.

3.4 Landscape Plans

1. Use abbreviations when labeling plants and include a translation table with additional information.
2. Use a simple key for abbreviations by using the first letter of the genus and the first letter of the species for each plant, capitalizing both letters. Example: A red maple tree, *Acer rubrum*, would be represented with the key “AR”. If a key happens to be the same for multiple plants, use either of the following:
    a. Add the next letter that does not conflict from the species to the end of the key (example: *Acer rubrum* (AR) and *Agasache rupestris* (ARP)), or
    b. If there are two of the same species and one is a cultivar/variety, use the first letter of the cultivar/variety (example: *Acer rubrum* (AR) and *Acer rubrum* ‘Armstrong’ (ARA)).
3. Label trees with a Tree Component ID callout
    a. S####-## = tree pit in trench system, VS####-## = vegetated system tree, NS####-## = non-system tree, where #### is the Project ID and ## indicates the unique tree location.
    b. Tree Component IDs can also be included as column in the plant schedule for clarity. See example landscape plans for further guidance.
4. Display plant schedule for all plants proposed with the following columns in the translation table, separated by vegetation type (i.e. trees, shrubs, grasses, herbaceous, seeding):
    a. Hatch Pattern / Tree Component ID (depending on type of vegetation listed)
    b. Key
    c. Common Name
    d. Scientific Name
    e. Cultivar
    f. Quantity
    g. Size
    h. Spacing
    i. Overhead Wires (list if overhead wires are present above the proposed trees)
    j. Notes

5. In the comments section of the plant schedule, list critical site constraints or design considerations related to the selection of the species and/or cultivars. This information is useful to include so PWD can more easily make thoughtful substitutions to align with the original intent of the landscape design. Examples of comments include: single versus multi-stem trees, height or form characteristics specifically chosen with a certain cultivar, male or female cultivars for pollination, etc. *Note: Substitutions frequently occur when certain species are unavailable at local nurseries or if seasonal planting restrictions affect the species that are specified for a project.*
6. The size of plants listed in the plant schedule must match standards of the nursery trade. For example: Single stem B&B trees are typically sold in a range of caliper size, such as "2 - 2½", rather than given as an exact measurement. Refer to the Chapter 5: Landscape Design Requirements in the *GSI Landscape Design Guidebook* for further clarification.
7. If a project includes both GSI and non-GSI (non-system) plants on the landscape plan, then separate plant schedules should be created to reflect the system and non-system plants. This typically only applies to partner projects where non-GSI improvements are being made in conjunction with the PWD GSI systems.
8. Polygons must be used to outline massings of herbaceous plants, grass species, seed mixes, and plugs. Each polygon should have a callout with the quantity of species in the massing. Polylines next to each other should not overlap. The quantity for each species massing must correlate with its spacing noted in the planting schedule.
    a. Example: "JE (22)" would note *Juncus effusus* (Common Rush) in a massing of twenty-two plants.
    b. Each polygon should be filled with a unique hatch for each species and incorporated into the plant schedule for each species.
9. Connecting leader lines may be used to label groups of shrubs and/or trees.
10. Tree blocks should not be used for tree trenches in order to reduce clutter. Tree pits already indicate the tree location.
11. The extent of stone storage areas under plantings must be shown.
12. If soil depths vary throughout the system, then this should be accurately depicted in the G-series of the construction document set through plan, section, and profile/elevation views.
    a. Example: If two feet of soil is used throughout the majority of a system, but trees are being incorporated into specific areas, then G-series sheets must clearly show that the soil depth changes from 2-feet to 3-feet beneath where the trees will be planted.
    b. Further dimensioning and annotations may be needed to show this information accurately.
13. For surface features, contours should be shown on landscape plans. This helps to show the bottom of basin and ponding elevations to better evaluate the species that will be inundated during various storms.
14. Overhead utilities, energy dissipaters, and other pertinent design features that will be visible on the surface of a system when construction is complete should be shown on landscape plans. Adjacent structures such as buildings, walls, utility poles, and existing trees should also be shown for reference. The standard design legend can be used to identify the features to prevent cluttering the landscape plans with additional callouts.

4.0 CAD STANDARDS

This section presents applicable standards and guidance for the preparation of GSI contract plans, utilizing AutoCAD software. The objectives of the CAD standards are to promote uniformity in the presentation of GSI contract plans by establishing a general CAD format and outlining detailed information which is required for the preparation of complete GSI drawings. The CAD standards build upon the standards set forth in the *Water & Sewer Design Manual* and Drawings Requirements outlined in *Section 3.0* by providing standard electronic templates for baseplan and design plans, linetypes, plot styles, callouts, and a block library that adhere to these requirements.

Tips and advice are included for accessing files and working in the AutoCAD environment with the developed templates. It is understood that Computer Aided Design (CAD) users have many different drafting preferences. This is not intended to teach users how to use AutoCAD, however it has been developed to explain how the templates and supporting files are setup and advises users how to manage and use the files in an efficient manner. Ultimately, the means and methods of drafting are left to the discretion of the end user.

Furthermore, it is understood that CAD users have customized options and customized file support paths for saving files such as plot styles, linetypes, shape files, etc. Therefore, it is assumed that the end user will understand where to save the provided support files.

4.1 CAD Platforms to Utilize

PWD requires AutoCAD 2013 or AutoCAD Civil 3D 2013 and later to be utilized. Figures within this document and supplemental resource files have been created using AutoCAD 2018. Note that PWD recommends drafting in AutoCAD rather than AutoCAD Civil 3D when working in files for which the three-dimensional functionality of Civil 3D is not needed, as AutoCAD Civil 3D is generally slower and more taxing on the available resources of the user's computer. Refer to *Section 4.4 Deliverables and Data Exchange,* for more information pertaining to deliverables to the Department.

4.2 Templates

Templates are supplied with pre-loaded styles and layers corresponding to two stages of plan preparation: baseplan and design plan. Templates are also provided for the standard PWD title block and typical GSI index sheet. All AutoCAD drawings should be created on the appropriate template.

4.2.1 Title Block

Plan sheets are to be plotted with the standard title block. The overall title block consists of three files, a sheet layout containing line work and data that will remain constant on all plan sheets and two attribute blocks that must be placed on and edited for each individual plan sheet for the sheet titles and additional signature lines. PWD recommends that the sheet layout be externally referenced into paper space so that any changes made to the sheet layout will be carried out on all plan sheets. The templates are designed to accept the sheet layout and attribute block references at a base point of 0,0,0. For additional detail on setting up drawing sheets and plotting, see *Appendix E*.

4.2.2 Index Sheet

The index sheet template is preloaded with layers and text styles and displays all information that is required to be shown on a typical index sheet including Project Title, Location Map, signature lines, etc. Refer to *Appendix F* to see a sample index sheet.

4.2.3 Baseplan

The baseplan template is pre-loaded with layers, text styles, multileader styles, and dimension styles that display and identify site survey existing features. All linework should be drawn on the correct layers.

4.2.4 Design Plan

The design plan template is pre-loaded with layers, text styles, multileader styles, dimension styles, and table styles that associate with proposed features. All linework should be drawn on the correct layers.

4.3 Graphic Concepts and Standards

The objective of establishing CAD graphical standards is to ensure contract documents conform to a widely recognized format. This conformance creates consistency between PWD projects and phases executed by varied Design Consultants and aids in the construction phase as well as post-construction management, operations, and maintenance.

4.3.1 Working Units

The standard working units for drawing files are shown in *Table 1* below. PWD expects that drawings be set to the specified working units for deliverables to PWD or exchanged between Design Consultants in such circumstances where, for example, the baseplan is created by a different Design Consultant than the design phase plan.

Table 1 - Standard Working Units

Baseplan			Design Plan		
Type	**Unit**	**Precision**	**Type**	**Unit**	**Precision**
Linear	Engineering	0.00	Linear	Engineering	0.00
Angular	Decimal Degrees	0.0	Angular	Decimal Degrees	0.0

4.3.2 Standard Scales

All model space geometry must be drawn to actual size (1:1 ratio) in model space. The standard scales for paper space scaling and annotation are shown in *Table 2*. These scales have been pre-loaded into the templates. Be advised that many of the annotation scales have been pre-set, thus the particular naming convention of the scales must be followed.

Table 2 - Standard Scales

Scale	Use	Scale	Use
1" = 1"	---	1" = 50'	---
1" = 1'	---	1" = 60'	---
1/8" = 1'	Baseplan Section	1" = 100'	Project Location Map
1/4" = 1'	Baseplan or Design Section	1" = 200'	Project Location Map
1" = 10'	Plan View, Elevation View	1" = 500'	Project Location Map
1" = 20'	Location Plan, Plan View	1" = 1000'	Project Location Map
1" = 30'	Location Plan	1" = 2000'	---
1" = 40'	Location Plan	1" = 5000'	---

4.3.3 User Coordinate System (UCS)

When working on larger systems or hydraulically connected systems at street intersections, rotate the plan view of a drawing to be able to convey the design information appropriately. Rather than rotate the plan in "model-space" (which should never be done) or rotate the viewport in paper space, users should apply a user coordinate system (UCS) for displaying plans at various orientations. The use of UCS is important because the native coordinate system of the drawing(s) is maintained at all times. Furthermore, the blocks developed for this standard have been created to automatically rotate and scale based on the UCS orientation and scale. Note that since it is common to insert external references or other block references that may contain coordinate data, users should pay special attention to what UCS view they are in when inserting said references and ensure that "World" coordinate system is selected.

4.3.4 Annotative Text for Plan View

Annotative text will be utilized for all plan view text, dimensions, and multileaders shown at multiple scales. Annotative text will scale up or down based on the annotation scale of the drawing. Annotation scales for text to be shown at multiple scales on the plan sheets will be set to the appropriate scales for deliverables and exchanges between Design Consultants. Plans should show all text, dimensions and callouts at 1"-10' for plan view and either 1"-20' or 1"-30' for the location plan. See *Appendix C* for a reference of the required plotted text heights. It should be noted that the standard callouts for profile/elevation view are not annotative and are set to plot at the correct height when scaled at 1"-10' Horizontal Scale and 1"=5' vertical scale.

4.3.5 Text/Dimension/Table/Multileader Styles

Each template described in Section 4.2 above includes pre-set styles for text, dimensions, tables and multileaders. Styles for items shown in both the location plan and plan view are annotative but require that the annotation scales be defined for each object created from that style.

4.3.6 Blocks (Standard and Dynamic)

This standard has been created to use standard and dynamic blocks. The blocks are designed to streamline drafting and give the user options for different design scenarios. Some blocks utilize attributes to allow users to edit/add/remove text within a block without corrupting the integrity of the block as it is referenced elsewhere within the same drawing. Furthermore, the dynamic functionality of select blocks adds flexibility and intelligence to the geometry through the use of custom grips and properties.

Appendix A contains an entire visual list of standard and dynamic blocks developed for this standard. The blocks are intended to be used during the baseplan and design phases of a project. Two block libraries have been developed: one for baseplans and the other for design plans.

Rather than copy and paste blocks from one drawing to another, it is strongly encouraged to save the block libraries locally on a user's computer and reference them though AutoCAD's Design Center. Saving the block libraries to a network drive has been known to cause lag and non-responsiveness in AutoCAD. To access the design center, type "DC" in the command line and press enter. From there you can navigate to the block libraries and select the appropriate block to be inserted. *Appendix E* contains tips on how to access the blocks through the design center.

Inside of the block libraries, users will also find standardized callouts to ensure consistency in how PWD GSI is identified in baseplans and design plans. Users should cut and paste the callouts from the respective block library file. The callouts are not accessible through the Design Center. Refer to *Appendix A* for the full inventory of standardized callouts.

4.3.7 Plot Style, Page Setup and Plotting

The templates have been designed to be compatible with a single plot style. The templates have been preset to use the developed plot style. It is the responsibility of end users to save the provided plot style at an appropriate location on their local hard drive or network drive for AutoCAD to map it properly. Instructions for plotting can be found in *Appendix E*. The *PWD GSI CAD Standards Support File Instructions for AutoCAD* document, included with the CAD templates, has instructions for adding PWD's support files to Windows' default AutoCAD support file location.

4.3.8 External Referencing

This standard requires that external referencing be utilized as different project stages (baseplan and design plan) exist as separate AutoCAD drawing files. For example, external referencing allows the baseplan to be underlain in the model space of the design plan so that it may be viewed alongside the proposed design. In addition, each project should utilize external referencing for setting up drawing layouts. Layouts should be created in a separate drawing file with design stages externally referenced into the model space. These drawings should not contain any other entities in model space. Layouts should externally reference the project's title block and border. See *Appendix E* for steps to externally reference files.

4.4 Deliverables and Data Exchange

Any exchange of contract documents in the form of electronic data between PWD and the Design Consultant will occur via one of the options indicated below.

4.4.1 File Sharing

Design Consultants are to use PWD's Water Engineering External Documents (WEXD) SharePoint site as the primary method for delivering/receiving electronic files. Conventional e-mail may be used for smaller files.

4.4.2 Additional Required File Formats

AutoCAD files (.dwg) must be submitted so that all external references are either maintained and mapped properly or binded prior to submission to PWD. This must be accomplished through the use of the "Etransmit" command in AutoCAD. The "Etransmit" command is the required method as this allows for image and PDF references to be included, as well as plot-style settings. See *Appendix E* for instructions to "Etransmit" a project.

In addition to the AutoCAD files, the Design Consultant is required to deliver a corresponding PDF file set replicating each contract plan sheet generated for each review submission. All PDF files must be representative prints at a resolution of 300 DPI that replicates the full-size sheet of Arch E1 (30" x 42").

4.5 File Naming Convention and Standard Reference Files

The following file naming convention will be used for all drawing files. This includes the layout drawing, external reference drawings and external reference images. Layout drawings, the drawing that contains only layout sheets and external references, should adhere to the naming convention in *Table 3*.

Table 3 – Layout Drawing Naming Convention

PWD Contract Number	Site/Project Name	File Purpose	Extension
X - # # # # # # - XXXX	_XXXXX	_Baseplan Layout _Preliminary Design Layout _Substantially Complete Design Layout _Final Design Layout _Landscape Layout _Erosion Control Layout _Title Block Layout	.dwg

External reference drawings should follow the naming convention shown in *Table 4*.

Table 4 – External Reference Drawing Naming Convention

PWD Contract Number	Site/Project Name	File Purpose*	Extension
X - # # # # # # - XXXX	_XXXXX	_Baseplan XREF _Preliminary Design XREF _Substantially Complete Design XREF _Final Design XREF _Landscape XREF _Erosion Control XREF _Title Block XREF	.dwg

*Additional "File Purpose" names are acceptable when necessary.

External reference images should follow the naming convention shown in *Table 5*.

Table 5 – External Reference Images Naming Convention

PWD Contract Number	Site/Project Name	File Purpose*	Extension
X - # # # # # # - XXXX	_XXXXX	_Aerial _Map _Plan	.tiff .jpeg .dwf .pdf

*Additional "File Purpose" names are acceptable when necessary.

4.6 Layer Naming Convention

The provided templates aim to provide all necessary layers, but additional layers may be required on a per project basis. When adding additional layers, care should be taken to keep layer names under 25 characters long. Abbreviations may be used where appropriate. The layer naming convention illustrated in *Table 6* provides guidance for naming additional layers when needed.

Table 6 – Layer Naming Convention

GIS (Optional)*	Prefix/Discipline	Category (Optional)	Feature	Sub-Type (Optional)
GIS-	EX- G-	PROF- UTIL- TEXT-	XXXXX	-TEXT -HATCH

*Some layers may require Geographic Information System (GIS) database exportation. The GIS- prefix allows for these layers to be queried and imported to a GIS program.

APPENDIX A: CALLOUT AND BLOCK LIBRARY

CALLOUT VARIABLES

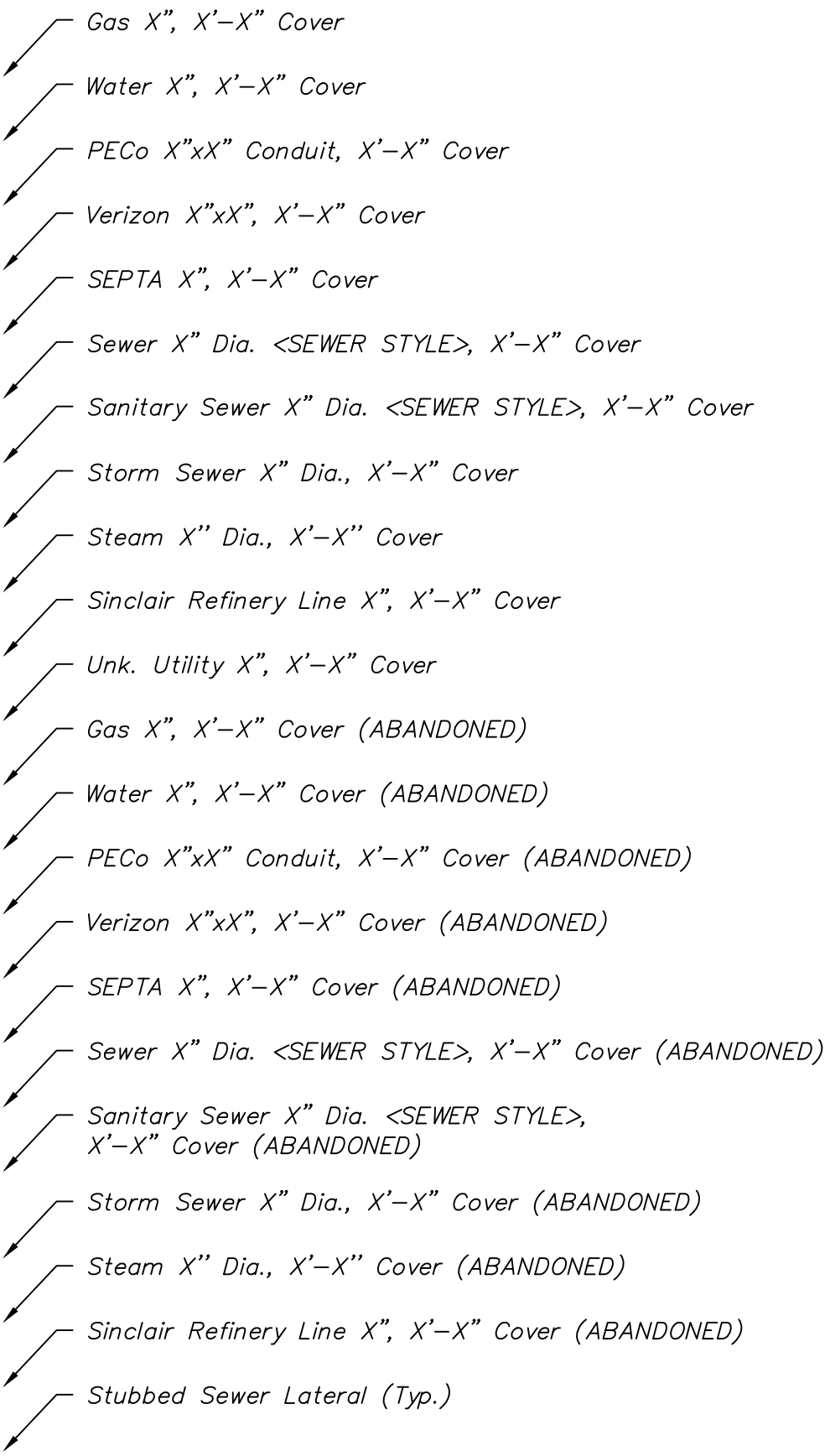
The callout library was created to be applicable to numerous proposed and existing features in a green stormwater infrastructure project. This table has been created to assist the user in determining the appropriate information to complete these callouts for a specific project. Callout variables are typically enclosed within angle brackets, "<" and ">" and the contents describe the information that the user will insert. In cases where the user is expected to insert a numeric value, the letter "X" is used as a placeholder. Callouts are to be cut and paste from the block library file into design template files as needed. Callouts are not accessible through the Design Center.

Different levels of detail are displayed using callouts in the various views shown on a project plan sheet. Generally location plans show only existing feature callouts. Plan views show existing feature callouts along with proposed features callouts omitting detailed design information. Profiles and sections views include more design details for proposed features such as elevations.

Variable	Possible Values	
X,XXX	• Drainage Area (SF)	
XXXX-XX	• System Number	
XXXX-XX-XX	• SMP Number	
+XX.XX	• Elevation	
<PLAN SHEET>	• T-XX • G-XX • L-XX • DA-XX	
<SURFACE TYPE>	• PERVIOUS	• IMPERVIOUS
<SMP TYPE>	• BASIN • BLUE ROOF • BUMP-OUT • DEPAVING • DRAINAGE WELL • GREEN GUTTER • GREEN ROOF • INFILTRATION/STORAGE TRENCH	• INLET DISCONNECTION • PERVIOUS PAVING • STORMWATER PLANTER • RAIN GARDEN • STORMWATER TREE • SWALE • TREE TRENCH • WETLAND
<LINER>	• FULLY LINED	• PARTIALLY LINED
<INLET STYLE>	• HWY GRATE INLET • CITY INLET • OMG INLET • GREEN CITY INLET W/ APRON • GREEN HIGHWAY GRATE INLET	• GREEN SHALLOW CITY INLET W/ APRON • GREEN DUAL CATCH BASIN CITY INLET W/ APRON • GREEN DUAL CATCH BASIN HWY GRATE INLET • OTHER (Custom Inlets)
<CONSTRUCTION NOTES>	• TO BE ABANDONED • TO BE PROTECTED AND SUPPORTED • TO BE PROTECTED • TO BE RELOCATED	• TO BE REMOVED • TO BE REMOVED AND RESET • TO BE RESTORED • OTHER
<SEWER STYLE>	• RCP • Brick	• VCP • TCP
<PIPE MATERIAL>	• DI • RCP • RCEP • PVC	• VCP • HDPE • PP
<UTILITY NAME>	• Water • Sewer • Storm Sewer • PECo • Gas	• Verizon • SEPTA • Steam • Sinclair Refinery Line
<TOP>	• TC • GRATE	• RIM
<CONNECTION>	• <SMP TYPE> • OTHER	• <INLET STYLE>
<UNDERDRAIN>	• X/X" ORIFICE	• SOLID CAP

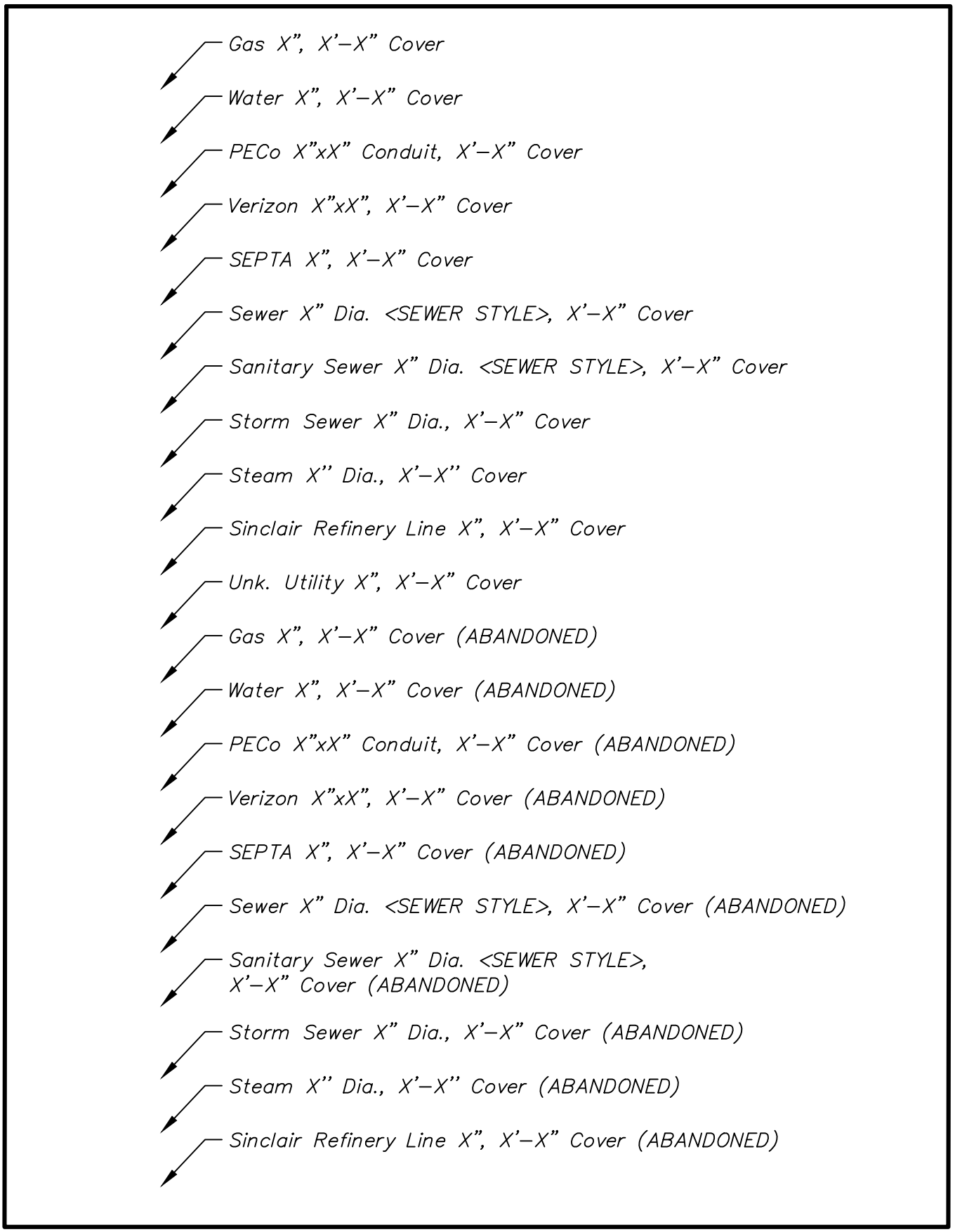
BASEPLAN BLOCK LIBRARY

PLAN VIEW - EXISTING UTILITY CALLOUTS



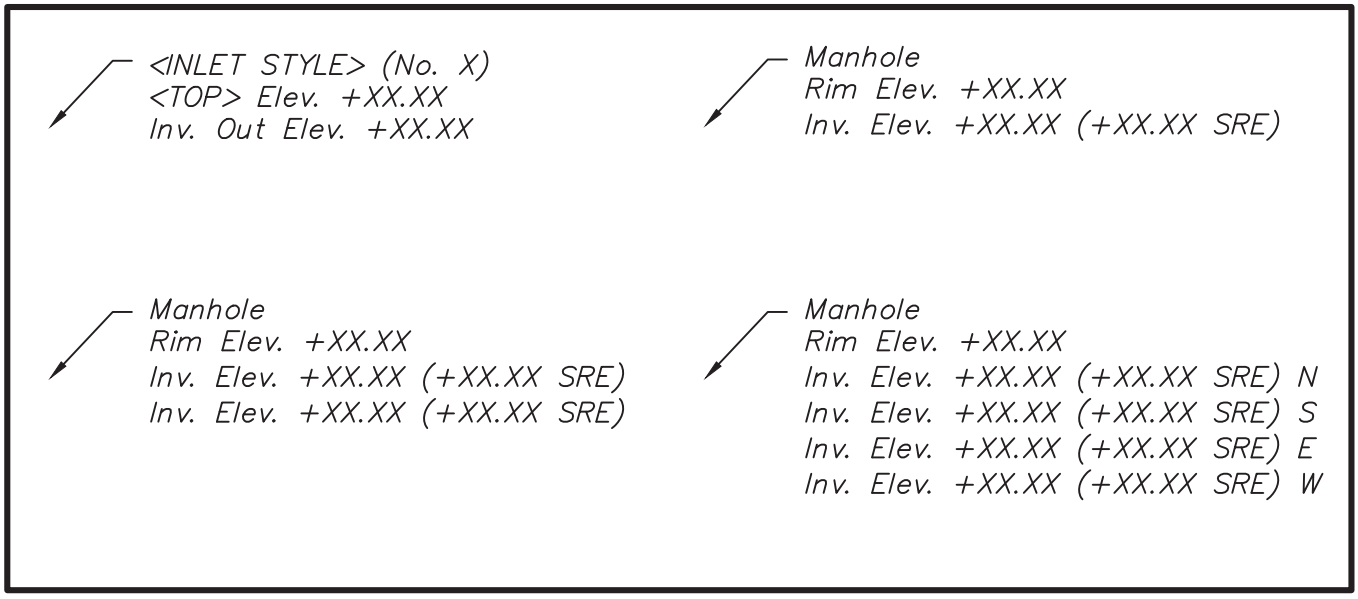
BASEPLAN BLOCK LIBRARY

SECTION - EXISTING UTILITY CALLOUTS



BASEPLAN BLOCK LIBRARY

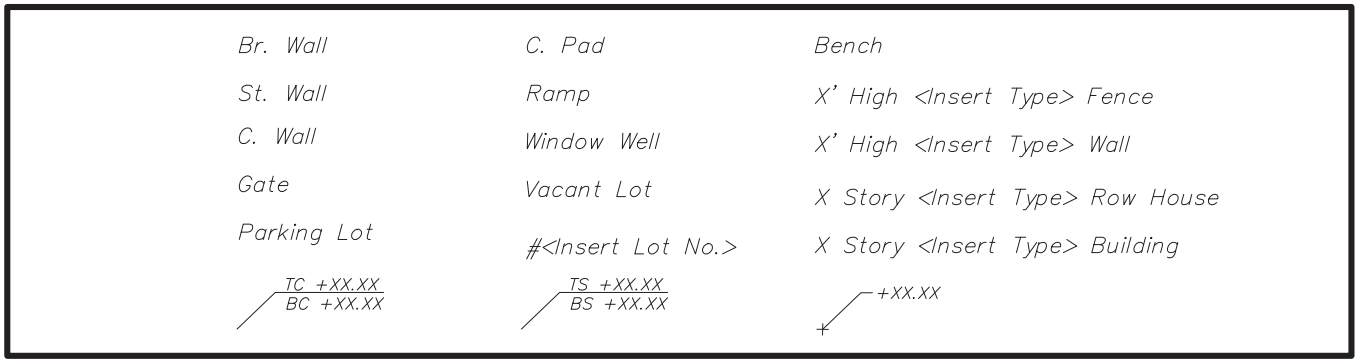
EXISTING INLET AND MANHOLE CALLOUTS



SURFACE TYPE CALLOUTS

C. Curb	Bituminous Paving	Gravel	Gr. Ftw.	S.R.L.
Blue St. Curb	Concrete Paving	Mulch	Sl. Ftw.	S.R.E.
Dep. Curb	Macadam Paving	Asph. Ftw.	Br. Gutter	
Gr. Curb	Dirt	C. Ftw.	D/W	
Asphalt Paving	Grass	Br. Ftw.	C. Alley	

SITE FEATURE CALLOUTS



DESIGN PLAN BLOCK LIBRARY

PLAN VIEW - EXISTING UTILITY CALLOUTS

Gas X", X'-X" Cover

Water X", X'-X" Cover

PECo X"xX" Conduit, X'-X" Cover

Verizon X"xX", X'-X" Cover

SEPTA X", X'-X" Cover

Sewer X" Dia. <SEWER STYLE>, X'-X" Cover

Stubbed Sewer Lateral (Typ.) **(<CONSTRUCTION NOTES>)**

Sanitary Sewer X" Dia. <SEWER STYLE>, X'-X" Cover

Storm Sewer X", X'-X" Cover

Steam X'' Dia., X'-X" Cover

Sinclair Refinery Line X", X'-X" Cover

Unk. Utility X", X'-X" Cover

<UTILITY NAME> X", X'-X" Cover (ABANDONED)
(<CONSTRUCTION NOTES>)

PLAN VIEW - EXISTING FEATURES CALLOUTS

Traffic Sign **(<CONSTRUCTION NOTES>)**

Stop Sign **(<CONSTRUCTION NOTES>)**

Fire Hydrant **(<CONSTRUCTION NOTES>)**

Grass Strip **(<CONSTRUCTION NOTES>)**

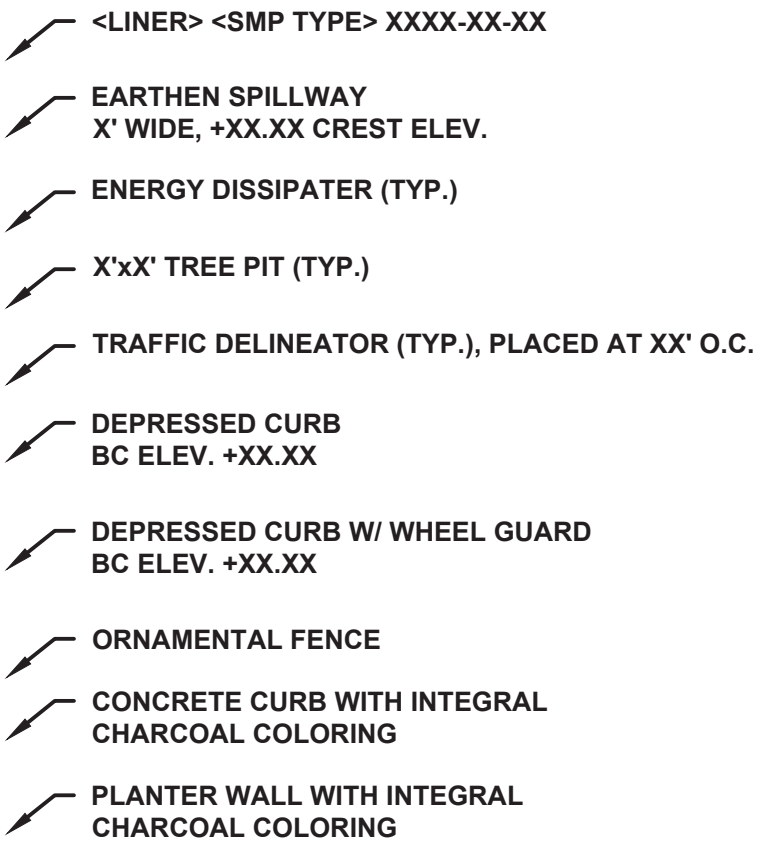
Tree **(<CONSTRUCTION NOTES>)**

<INLET STYLE> (No. X)
<TOP> Elev. +XX.XX
Inv. Out Elev. +XX.XX
(<CONSTRUCTION NOTES>)

PC PI PT

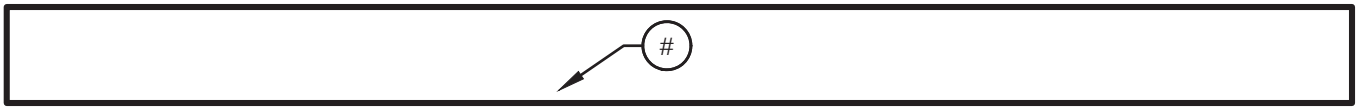
DESIGN PLAN BLOCK LIBRARY

PLAN VIEW - SMP CALLOUTS

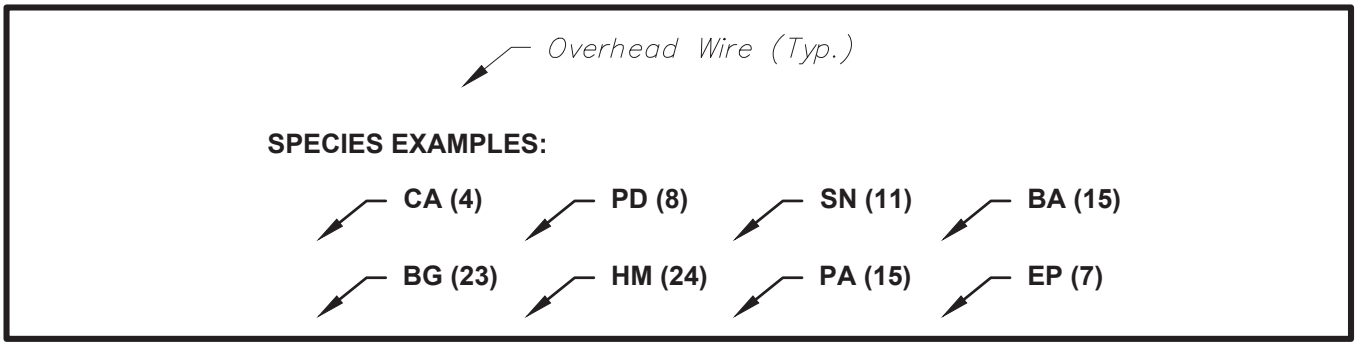


DESIGN PLAN BLOCK LIBRARY

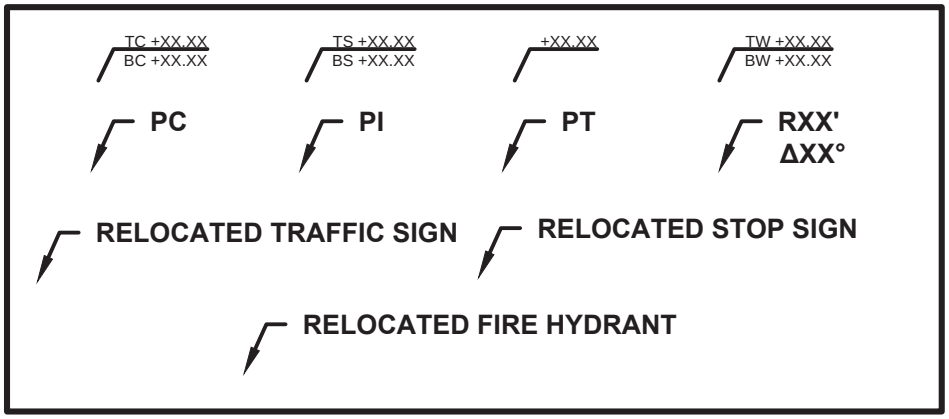
PLAN VIEW - COMPONENT LABELING



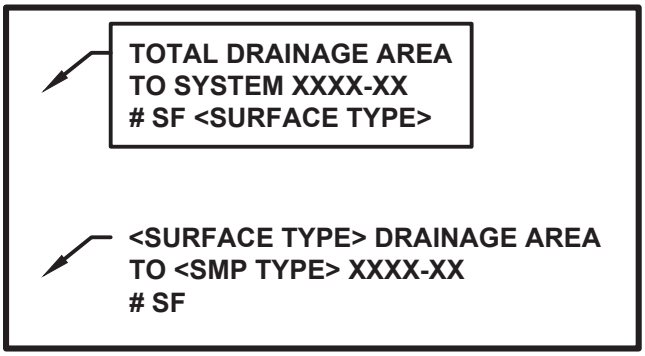
PLAN VIEW - LANDSCAPING CALLOUTS



PLANVIEW - PROPOSED FEATURES CALLOUTS



DRAINAGE AREA CALLOUT

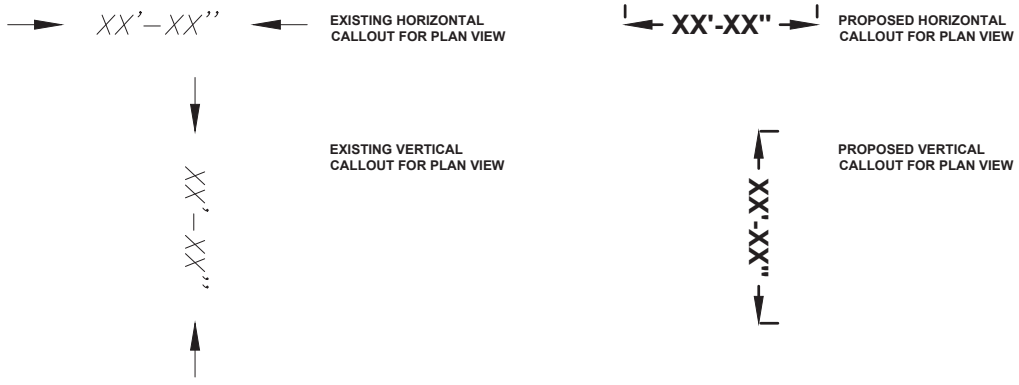


DESIGN PLAN BLOCK LIBRARY

PLAN VIEW - SMP PIPE CALLOUTS

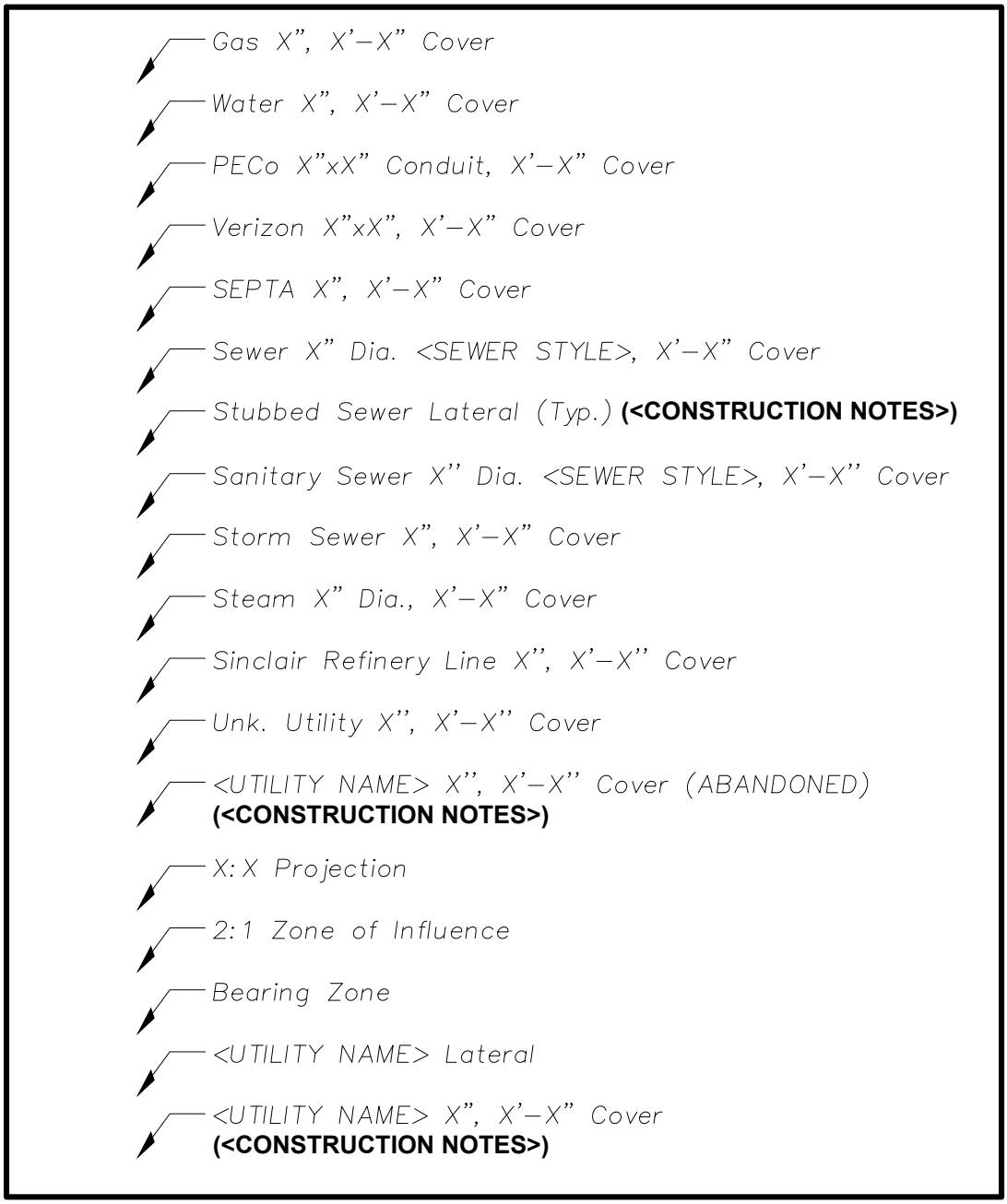
- ANTI-SEEP COLLAR (TYP.)
- XX° BEND (TYP.)
- # LF OF X" SOLID <PIPE MATERIAL> UNDERDRAIN @ X.X% SLOPE
- # LF OF X" SOLID <PIPE MATERIAL> DISTRIBUTION PIPE @ X.X% SLOPE
- # LF OF X" PERFORATED <PIPE MATERIAL> UNDERDRAIN @ X.X% SLOPE
- # LF OF X" PERFORATED <PIPE MATERIAL> DISTRIBUTION PIPE @ X.X% SLOPE
- X" <PIPE MATERIAL> WYE FITTING
- X'-X" VERTICAL DROP OVER X'-X" LENGTH
- X'-X" VERTICAL RISE OVER X'-X" LENGTH
- X" TO X" FLEXIBLE COUPLING (TYP.)
- # LF OF 15" VCP LATERAL W/ SADDLE CONNECTION TO SEWER
- # LF OF 15" VCP LATERAL W/ WYE CONNECTION TO SEWER
- RECONNECT TO EXISTING VCP INLET PIPE WITH CONCRETE COLLAR
- # LF OF X" <PIPE MATERIAL> GSI SEWER, X'-X"± COV. @ X.X% SLOPE

PLAN VIEW - DIM. STYLES



DESIGN PLAN BLOCK LIBRARY

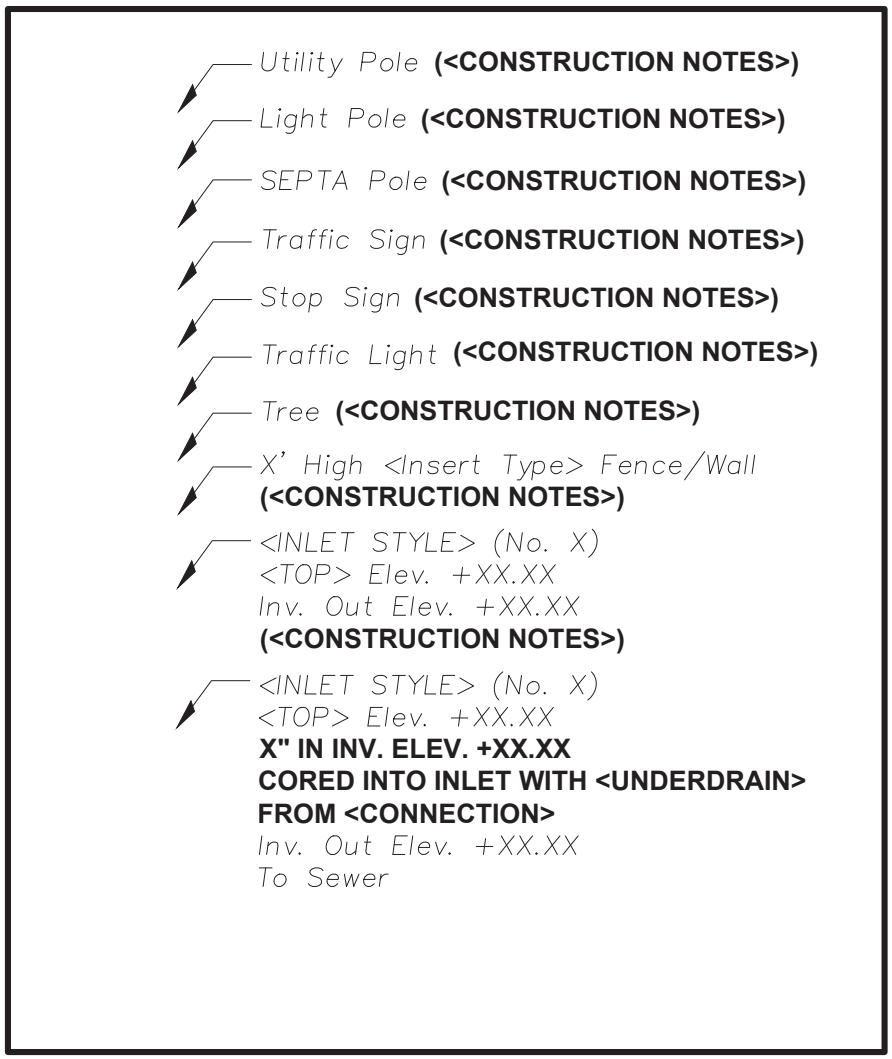
PROFILE - EXISTING UTILITY CALLOUTS



NOTE: PROFILE CALLOUT TEXT IS SIZED AT HALF HEIGHT AND DOUBLE WIDTH IN ORDER TO DISPLAY CORRECTLY AT 1"=5' VERTICAL SCALE AND 1"=10' HORIZONTAL SCALE.

DESIGN PLAN BLOCK LIBRARY

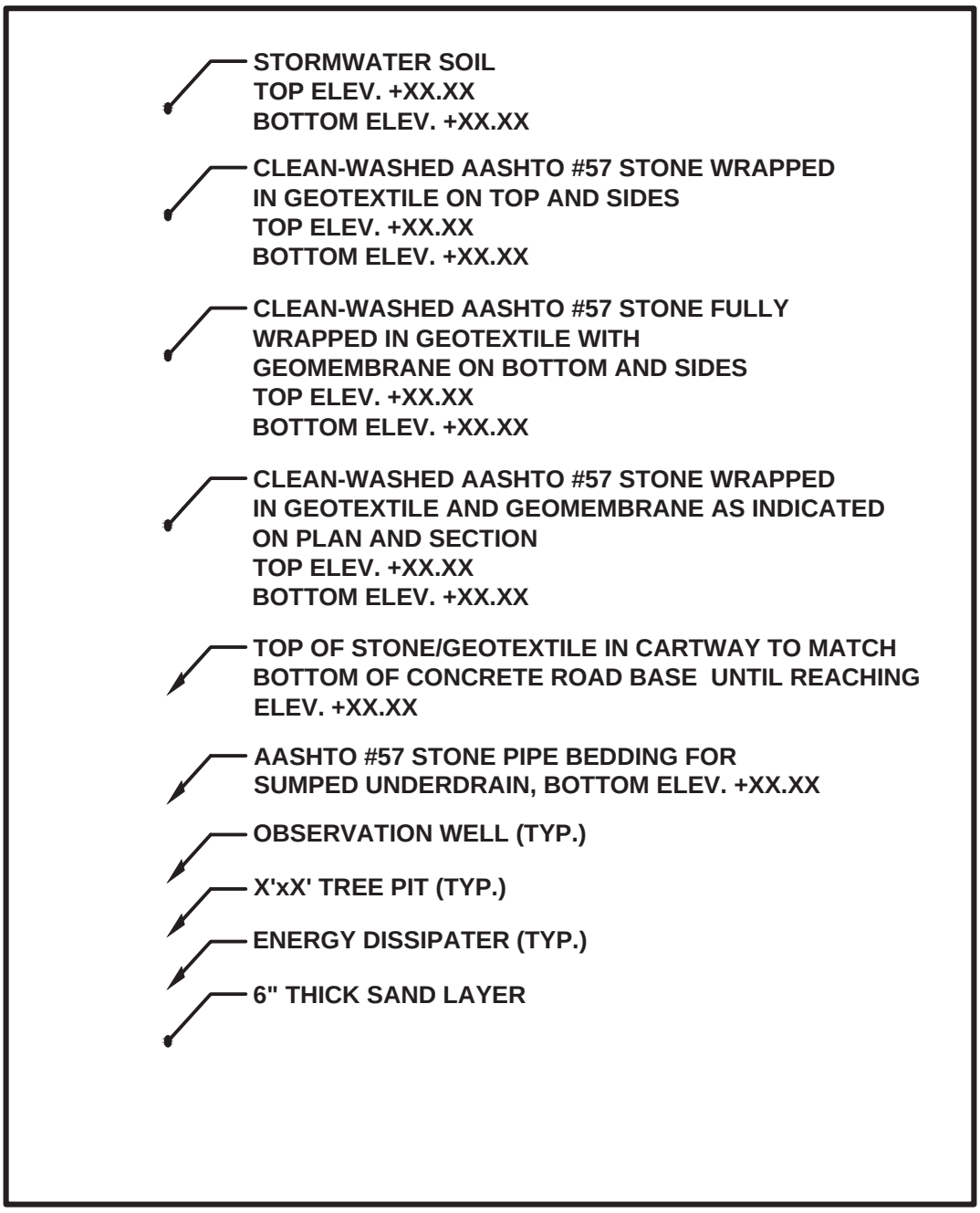
PROFILE - EXISTING FEATURES CALLOUTS



NOTE: PROFILE CALLOUT TEXT IS SIZED AT HALF HEIGHT AND DOUBLE WIDTH IN ORDER TO DISPLAY CORRECTLY AT 1"=5' VERTICAL SCALE AND 1"=10' HORIZONTAL SCALE.

DESIGN PLAN BLOCK LIBRARY

PROFILE - SMP CALLOUTS

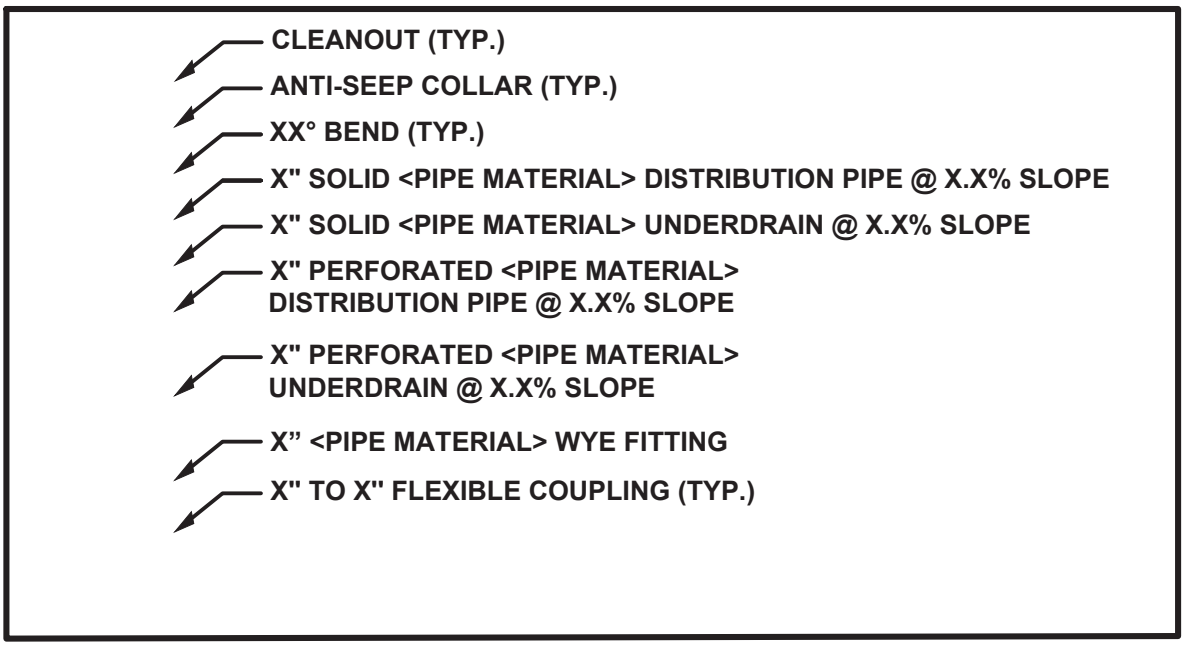


NOTE: PROFILE CALLOUT TEXT IS SIZED AT HALF HEIGHT AND DOUBLE WIDTH IN ORDER TO DISPLAY CORRECTLY AT 1"=5' VERTICAL SCALE AND 1"=10' HORIZONTAL SCALE.

***THE DEFAULT LEADER HEAD IS THE FILLED TRIANGLE WHICH IS USED WHEN POINTING DIRECTLY AT AN OBJECT. A DOT LEADER HEAD IS USED WHEN POINTING TO THE INTERNAL AREA OF AN OBJECT. THE LEADER HEAD MAY BE CHANGED TO A MEDIUM DOT IN THE PROPERTIES UNDER LEADERS>ARROWHEAD>USER ARROW.**

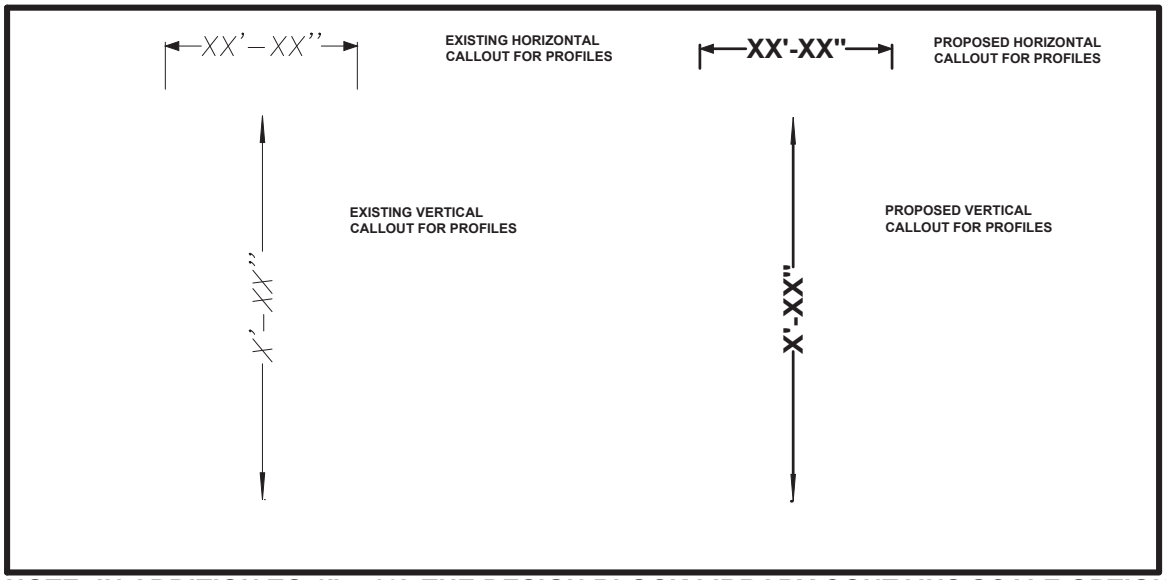
DESIGN PLAN BLOCK LIBRARY

PROFILE - SMP PIPE CALLOUTS



NOTE: PROFILE CALLOUT TEXT IS SIZED AT HALF HEIGHT AND DOUBLE WIDTH IN ORDER TO DISPLAY CORRECTLY AT 1"=5' VERTICAL SCALE AND 1"=10' HORIZONTAL SCALE.

PROFILE - DIM. STYLES



NOTE: IN ADDITION TO 1" = 10', THE DESIGN BLOCK LIBRARY CONTAINS SCALE OPTIONS FOR 1" = 20' AND 1" = 30', WHICH CAN BE USED IN CONJUNCTION WITH PLAN VIEW SCALES OF 1" = 20' OR 1" = 30' RESPECTIVELY.

DESIGN PLAN BLOCK LIBRARY

PROFILE - SMP INLET/SURFACE FEATURE CALLOUTS

X' <INLET STYLE>
<TOP> ELEV. +XX.XX
GUTTER ELEV. +XX.XX
X" OUT INV. ELEV. +XX.XX
TO <CONNECTION>

X' <INLET STYLE>
<TOP> ELEV. +XX.XX
GUTTER ELEV. +XX.XX
X" IN INV. ELEV. +XX.XX
FROM <CONNECTION>
X" OUT INV. ELEV. +XX.XX
TO <CONNECTION>

X' <INLET STYLE>
<TOP> ELEV. +XX.XX
GUTTER ELEV. +XX.XX
X" IN INV. ELEV. +XX.XX
CORED INTO INLET WITH
<UNDERDRAIN>
FROM <CONNECTION>
15" OUT INV. ELEV. +XX.XX
TO SEWER

X'xX' OVERFLOW
CONTROL STRUCTURE
<TOP> ELEV. +XX.XX
X" IN INV. ELEV. +XX.XX
CORED INTO STRUCTURE
WITH <UNDERDRAIN>
FROM <CONNECTION>
X" OUT INV. ELEV. +XX.XX
TO <CONNECTION>

XX" DOMED RISER
RIM ELEV. +XX.XX
X" OUT INV. ELEV. +XX.XX
TO <CONNECTION>

XX" DOMED RISER W/ SUMP
RIM ELEV. +XX.XX
X" OUT INV. ELEV. +XX.XX
TO <CONNECTION>

XX" DOMED RISER STANDPIPE
RIM ELEV. +XX.XX

X" x X' TRENCH DRAIN W/ APRON
<TOP> ELEV. +XX.XX
GUTTER ELEV. +XX.XX
X" OUT INV. ELEV. +XX.XX
TO <CONNECTION>

SW MANHOLE
RIM ELEV. +XX.XX
X" IN INV. ELEV. +XX.XX
FROM <CONNECTION>
X" OUT INV. ELEV. +XX.XX
TO <CONNECTION>

X'xX' JUNCTION BOX
RIM ELEV. +XX.XX
X" IN INV. ELEV. +XX.XX
FROM <CONNECTION>
X" OUT INV. ELEV. +XX.XX
TO <CONNECTION>

WATER LEVEL CONTROL STRUCTURE
RIM ELEV. +XX.XX
WEIR ELEV. +XX.XX
3" PVC CENTERLINE ELEV. +XX.XX
WITH <UNDERDRAIN>
X" IN INV. ELEV. +XX.XX
FROM <CONNECTION>
X" OUT INV. ELEV. +XX.XX
TO <CONNECTION>

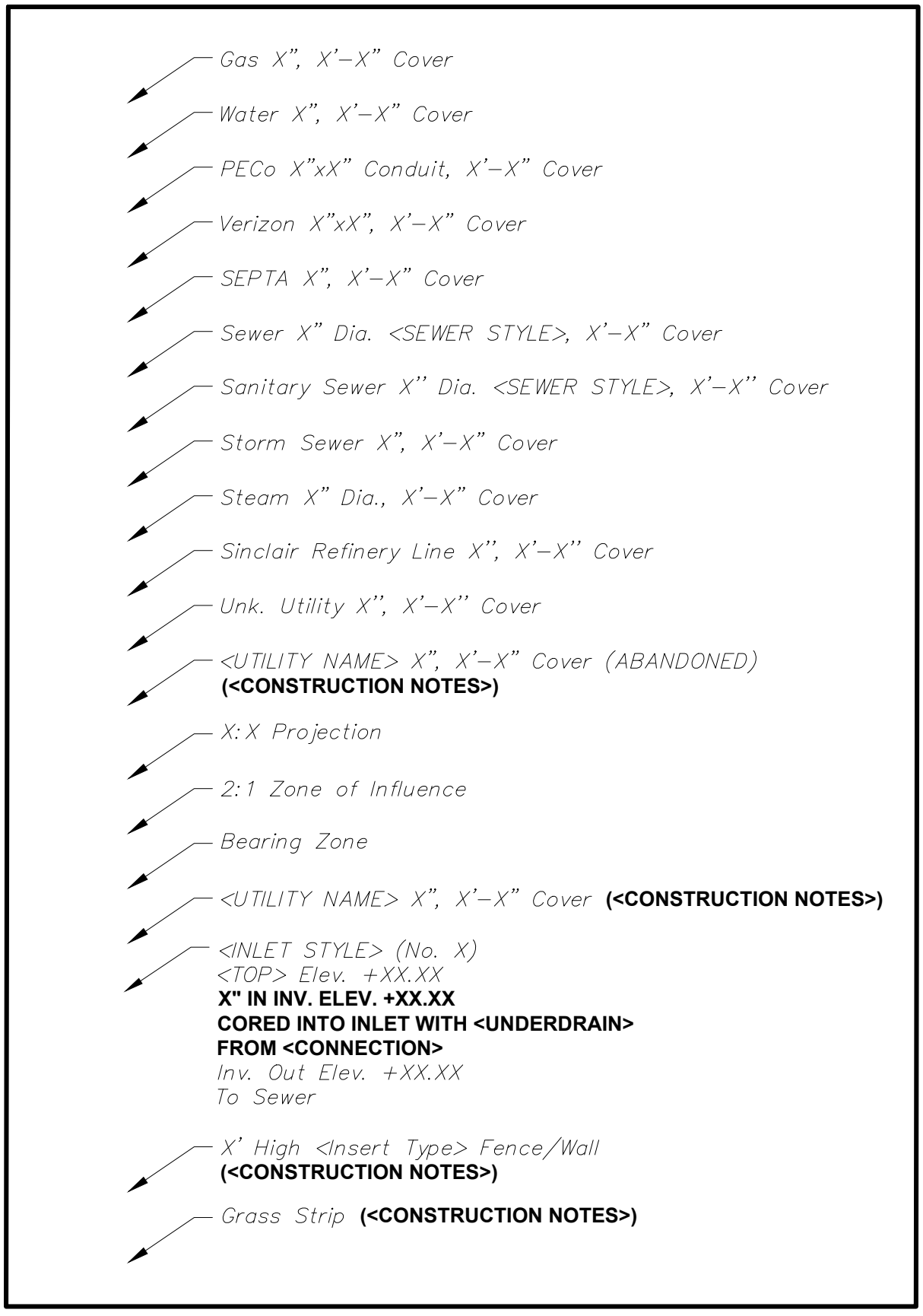
HEADWALL
TW ELEV. +XX.XX
X" IN INV. ELEV. +XX.XX
FROM <CONNECTION>

<INLET STYLE>
<TOP> ELEV. +XX.XX
GUTTER ELEV. +XX.XX
WEIR ELEV. +XX.XX
X" IN INV. ELEV. +XX.XX
FROM <CONNECTION>
X" IN INV. ELEV. +XX.XX
CORED INTO INLET WITH <UNDERDRAIN>
FROM <CONNECTION>
X" OUT INV. ELEV. +XX.XX
TO <CONNECTION>
15" OUT INV. ELEV. +XX.XX
TO SEWER

NOTE: PROFILE CALLOUT TEXT IS SIZED AT HALF HEIGHT AND DOUBLE WIDTH IN ORDER TO DISPLAY CORRECTLY AT 1"=5' VERTICAL SCALE AND 1"=10' HORIZONTAL SCALE.

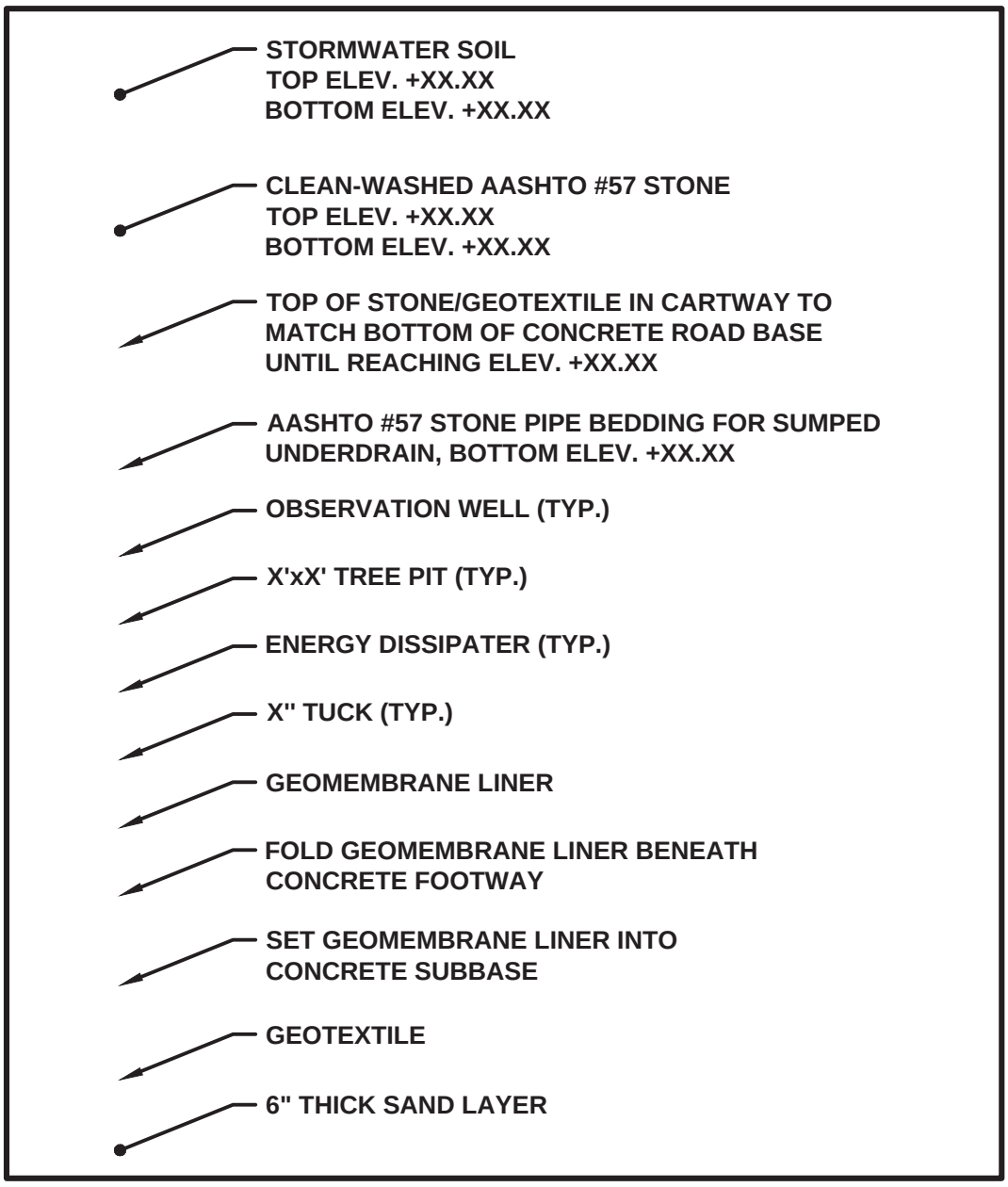
DESIGN PLAN BLOCK LIBRARY

SECTION - EXISTING UTILITY AND FEATURE CALLOUTS



DESIGN PLAN BLOCK LIBRARY

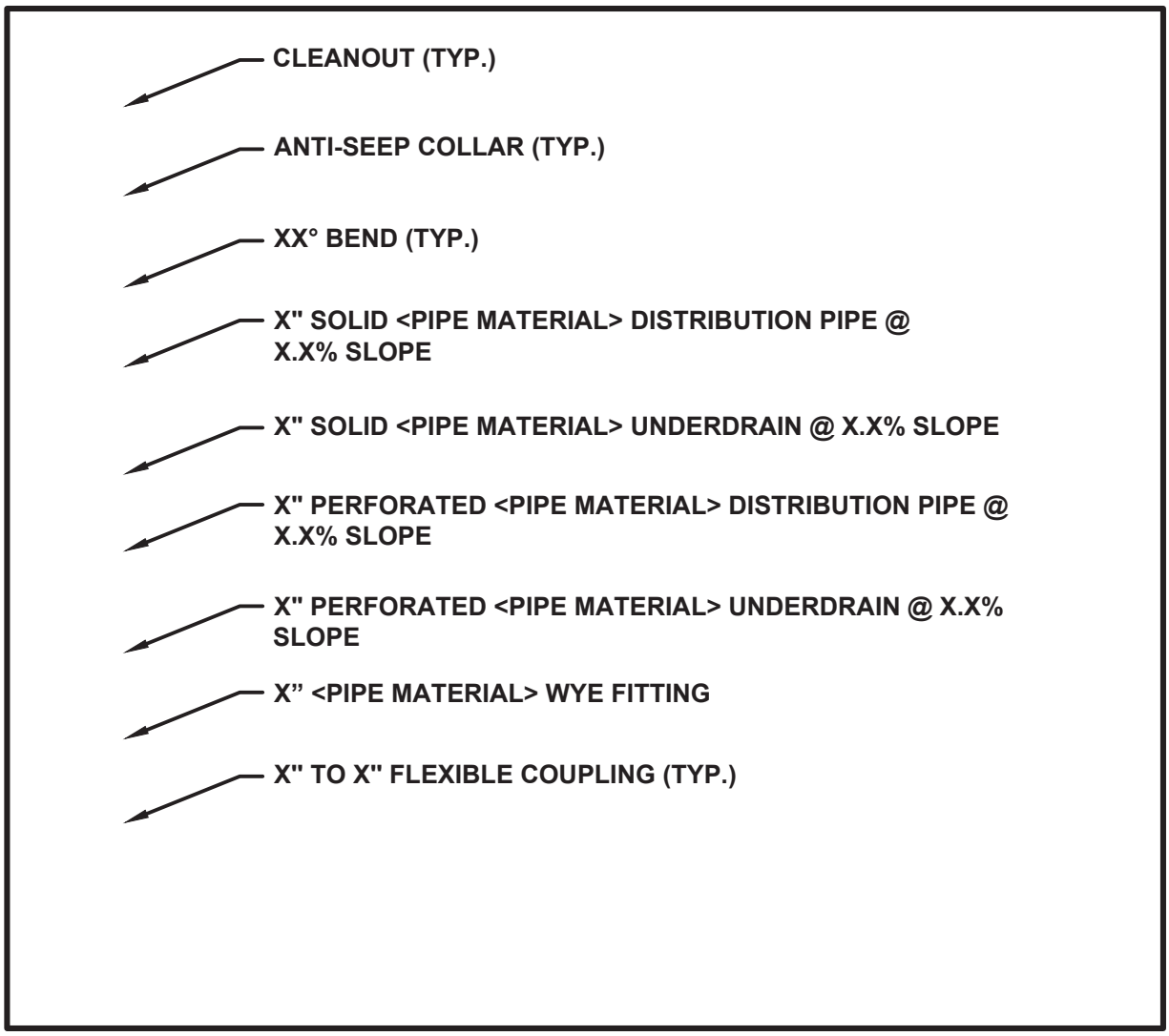
SECTION - SMP CALLOUTS



NOTE: THE DEFAULT LEADER HEAD IS THE FILLED TRIANGLE WHICH IS USED WHEN POINTING DIRECTLY AT AN OBJECT. A DOT LEADER HEAD IS USED WHEN POINTING TO THE INTERNAL AREA OF AN OBJECT. THE LEADER HEAD MAY BE CHANGED TO A MEDIUM DOT IN THE PROPERTIES UNDER LEADERS>ARROWHEAD>USER ARROW.

DESIGN PLAN BLOCK LIBRARY

SECTION - SMP PIPE CALLOUTS



DESIGN PLAN BLOCK LIBRARY

SECTION - SMP INLET/SURFACE FEATURE CALLOUTS

X' <INLET STYLE>
<TOP> ELEV. +XX.XX
GUTTER ELEV. +XX.XX
X" OUT INV. ELEV. +XX.XX
TO <CONNECTION>

X' <INLET STYLE>
<TOP> ELEV. +XX.XX
GUTTER ELEV. +XX.XX
X" IN INV. ELEV. +XX.XX
FROM <CONNECTION>
X" OUT INV. ELEV. +XX.XX
TO <CONNECTION>

X' <INLET STYLE>
<TOP> ELEV. +XX.XX
GUTTER ELEV. +XX.XX
X" IN INV. ELEV. +XX.XX
CORED INTO INLET WITH <UNDERDRAIN>
FROM <CONNECTION>
15" OUT INV. ELEV. +XX.XX
TO SEWER

X'xX' OVERFLOW
CONTROL STRUCTURE
<TOP> ELEV. +XX.XX
X" IN INV. ELEV. +XX.XX
CORED INTO INLET WITH <UNDERDRAIN>
FROM <CONNECTION>
X" OUT INV. ELEV. +XX.XX
TO <CONNECTION>

XX" DOMED RISER
RIM ELEV. +XX.XX
X" OUT INV. ELEV. +XX.XX
TO <CONNECTION>

XX" DOMED RISER W/ SUMP
RIM ELEV. +XX.XX
X" OUT INV. ELEV. +XX.XX
TO <CONNECTION>

XX" DOMED RISER STANDPIPE
RIM ELEV. +XX.XX

X" x X' TRENCH DRAIN W/ APRON
<TOP> ELEV. +XX.XX
GUTTER ELEV. +XX.XX
X" OUT INV. ELEV. +XX.XX
TO <CONNECTION>

SW MANHOLE
RIM ELEV. +XX.XX
X" IN INV. ELEV. +XX.XX
FROM <CONNECTION>
X" OUT INV. ELEV. +XX.XX
TO <CONNECTION>

X'xX' JUNCTION BOX
RIM ELEV. +XX.XX
X" IN INV. ELEV. +XX.XX
FROM <CONNECTION>
X" OUT INV. ELEV. +XX.XX
TO <CONNECTION>

WATER LEVEL CONTROL STRUCTURE
RIM ELEV. +XX.XX
WEIR ELEV. +XX.XX
3" PVC CENTERLINE ELEV. +XX.XX
WITH <UNDERDRAIN>
X" IN INV. ELEV. +XX.XX
FROM <CONNECTION>
X" OUT INV. ELEV. +XX.XX
TO <CONNECTION>

HEADWALL
TW ELEV. +XX.XX
X" IN INV. ELEV. +XX.XX
FROM <CONNECTION>

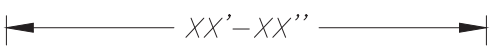
<INLET STYLE>
<TOP> ELEV. +XX.XX
GUTTER ELEV. +XX.XX
WEIR ELEV. +XX.XX
X" IN INV. ELEV. +XX.XX
FROM <CONNECTION>
X" IN INV. ELEV. +XX.XX
CORED INTO INLET
WITH <UNDERDRAIN>
FROM <CONNECTION>
X" OUT INV. ELEV. +XX.XX
TO <CONNECTION>
15" OUT INV. ELEV. +XX.XX
TO SEWER

DEPRESSED CURB
BC ELEV. +XX.XX

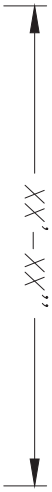
DEPRESSED CURB W/ WHEEL GUARD
BC ELEV. +XX.XX

DESIGN PLAN BLOCK LIBRARY

SECTION - DIM. STYLES



EXISTING HORIZONTAL
CALLOUT FOR SECTIONS



EXISTING VERTICAL
CALLOUT FOR SECTIONS

PROPOSED HORIZONTAL
CALLOUT FOR SECTIONS

PROPOSED VERTICAL
CALLOUT FOR SECTIONS

NOTE: IN ADDITION TO 1/4" = 1', THE DESIGN BLOCK LIBRARY CONTAINS SCALE OPTIONS FOR 1/8" = 1', AND 1/12" = 1', WHICH CAN BE USED IN CONJUNCTION WITH PLAN VIEW SCALES OF 1" = 20' OR 1" = 30', RESPECTIVELY.

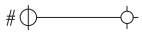
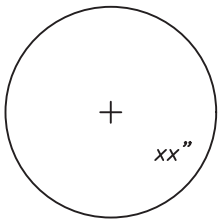
DESIGN PLAN BLOCK LIBRARY

EXAMPLE COMPONENT ID TABLE

#	COMPONENT ID	COMPONENT TYPE	PIPE LENGTH (FT)
1		GREEN CITY INLET W/ APRON	N/A
2		GREEN SHALLOW CITY INLET W/ APRON	N/A
3		GREEN HWY GRATE INLET	N/A
4		GREEN DUAL CATCH BASIN CITY INLET W/ APRON	N/A
5		GREEN DUAL CATCH BASIN HWY GRATE INLET	N/A
6		GREEN DUAL CATCH BASIN OMG INLET	N/A
7		DISTRIBUTION PIPE	XX
8		UNDERDRAIN	XX
9		XX'' x XX' TRENCH DRAIN W/ APRON	N/A
10		CONCRETE HEADWALL W/ ENERGY DISSIPATER	N/A
11		CLEANOUT	N/A
12		OBSERVATION WELL	N/A
13		SW MANHOLE	N/A
14		SW JUNCTION MANHOLE	N/A
15		DOMED RISER	N/A
16		INFILTRATION COLUMN	N/A
17		DOMED RISER STANDPIPE	N/A
18		HWY GRATE INLET	N/A
19		CITY INLET	N/A
20		OMG INLET	N/A
21		WATER LEVEL CONTROL STRUCTURE	N/A
22		2'x2' OVERFLOW CONTROL STRUCTURE	N/A
23		2'x4' OVERFLOW CONTROL STRUCTURE	N/A
24		2'x2' JUNCTION BOX	N/A
25		2'x4' JUNCTION BOX	N/A

BASEPLAN BLOCK LIBRARY

EXISTING FEATURE LABELS

VENT BOX–SEWER* 	GAS BOX* 	WATER BOX* 	UNKNOWN CURB BOX* 
POLE* 	BENCHMARK* 	LAMP POST* 	IRON POST*
BOLLARD* 	PARKING METER*	PE POLE 	TRASH RECEPTACLE* 
PE POLE W/ LIGHT 	SEPTA POLE* 	TRAFFIC SIGN* 	TRAFFIC LIGHT* 
HEDGE 	BENCH* 	TREE CANOPY 	TREE STUMP 
FIRE HYDRANT* 	FIRE ALARM BOX* 	SEPTA BUS SHELTER* 	

***DO NOT MANUALLY ROTATE BLOCKS CONTAINING NON-ATTRIBUTE TEXT. TEXT WILL ROTATE AUTOMATICALLY TO REMAIN UPRIGHT IN ALL UCS VIEWS IN THE LAYOUT VIEWPORT. BLOCKS WITH TEXT MAY BE ROTATED WITH DYNAMIC BLOCK GRIP. SEE APPENDIX E OF THE PWD GSI SURVEY AND DRAWING STANDARDS FOR INSERTION INSTRUCTIONS.**

BASEPLAN BLOCK LIBRARY

EXISTING FEATURE LABELS CONT.

STANDPIPE*	ELECTROLYSIS TEST STATION*	DOOR SILL*	CURB RAMP*	COMPLIANT CURB RAMP
	T	Door	C/R	C/R
COAL CHUTE*	WINDOW GRATE	DOWNSPOUT*	MAIL BOX*	
CC		DS	MB	
CABLE TV ACCESS BOX*	TRAFFIC SIGNAL CONTROLLER*	PAY PHONE*	PORCH	
CATV	Traffic Control	Phone		
STEAM GRATE*	SEWER MANHOLE	MANHOLE	MANHOLE UNKNOWN*	
GRATE	#		?	
WATER/GAS VALVE	STEPS	CELLAR DOOR	SURVEY STONE*	
			SS	

***DO NOT MANUALLY ROTATE BLOCKS CONTAINING NON-ATTRIBUTE TEXT. TEXT WILL ROTATE AUTOMATICALLY TO REMAIN UPRIGHT IN ALL UCS VIEWS IN THE LAYOUT VIEWPORT. BLOCKS WITH TEXT MAY BE ROTATED WITH DYNAMIC BLOCK GRIP. SEE APPENDIX E OF THE PWD GSI SURVEY AND DRAWING STANDARDS FOR INSERTION INSTRUCTIONS.**

EXISTING MISC. LABELS

A1 SECTION ARROW A1	BORING	CURB FLOW ARROW	EXISTING CONTOUR LABEL	CENTERLINE ELEVATIONS
			0.00	CL +##.##
SECTION TITLE	NORTH ARROW	TOP/BOTTOM OF CURB CALLOUT	TOP/BOTTOM OF STEP CALLOUT	EXISTING SPOT ELEVATION
SECTION A – A SCALE: 1/4" = 1'-0"		TC +XX.XX BC +XX.XX	TS +XX.XX BS +XX.XX	+XX.XX

BASEPLAN BLOCK LIBRARY

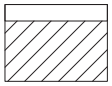
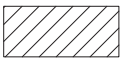
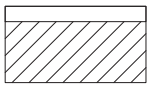
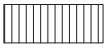
STREET CALLOUTS

TWO-WAY W/PARKING **STREET** PARKING PARKING	TWO-WAY W/ NO PARKING **STREET**	TWO-WAY W/PARKING ONE SIDE **STREET** PARKING	TWO-WAY STATE ROUTE CUSTOM **STREET (S.R. XXXX)**
TWO-WAY W/ 4 CUSTOM LINES AND MULTIPLE ARROW OPTIONS **STREET**	TWO-WAY W/ 4 CUSTOM LINES **STREET**	ONE-WAY W/ PARKING **STREET** PARKING PARKING	ONE-WAY STATE ROUTE CUSTOM **STREET (S.R. XXXX)**
ONE-WAY W/ NO PARKING **STREET**	ONE-WAY W/ PARKING ONE SIDE **STREET** PARKING	ONE-WAY W/ 4 CUSTOM LINES **STREET**	ONE-WAY W/ 4 CUSTOM LINES AND MULTIPLE ARROW OPTIONS **STREET**

NOTE: BIKE LANES SHOULD BE ADDED TO STREET CALLOUTS AS NECESSARY

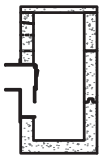
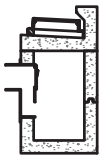
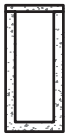
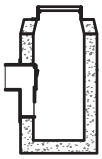
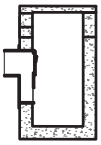
BASEPLAN BLOCK LIBRARY

CITY, HWY, OMG, GRATE INLETS

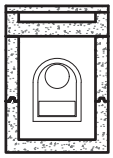
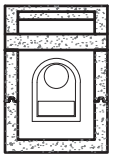
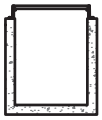
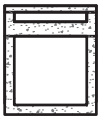
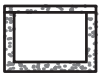
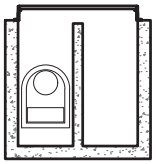
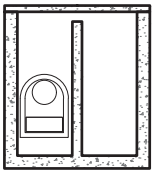
4' CITY 4CI	4' HIGHWAY GRATE 4 	4' OMG 4 
6' CITY 6CI	6' HIGHWAY GRATE 6 	6' OMG 6 
#1 CITY #1	#2 CITY #2	#3 CITY #3
#4 CITY #4	#1 GRATE  #1	#2 GRATE  #2
#3 GRATE  #3	#4 GRATE  #4	

DESIGN PLAN BLOCK LIBRARY

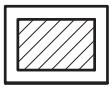
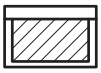
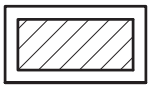
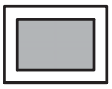
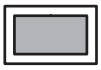
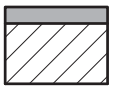
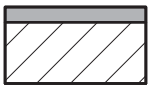
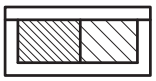
SECTION VIEW INLETS

HIGHWAY GRATE	CITY	OMG	GREEN HIGHWAY GRATE	GREEN CITY	GREEN SHALLOW CITY	GREEN DUAL CATCH BASIN HWY	GREEN DUAL CATCH BASIN CITY
							

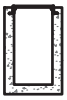
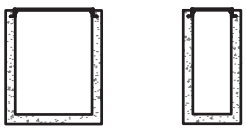
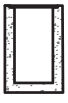
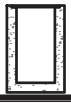
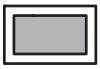
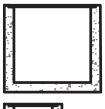
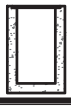
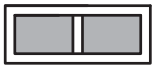
PROFILE VIEW INLETS

HIGHWAY GRATE	CITY	OMG	GREEN HIGHWAY GRATE	GREEN CITY	GREEN SHALLOW CITY	GREEN DUAL CATCH BASIN HWY	GREEN DUAL CATCH BASIN CITY
							

PLAN VIEW INLETS

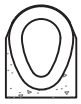
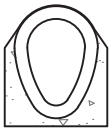
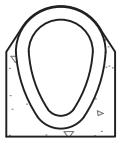
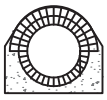
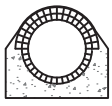
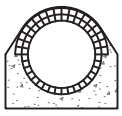
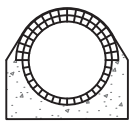
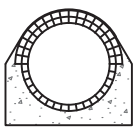
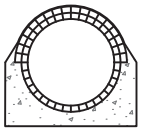
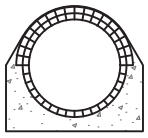
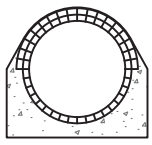
4' HWY GRATE	4' GREEN HWY GRATE	6' HWY GRATE	4' CITY	4' GREEN CITY OR 4' GREEN SHALLOW CITY
				
6' CITY	**4' OMG**	**6' OMG**	**GREEN DUAL CATCH BASIN CITY**	**GREEN DUAL CATCH BASIN HWY**
				

ADDITIONAL PROPOSED STRUCTURES

PROPOSED MANHOLE	2'X2' OVERFLOW CONTROL STRUCTURE	2'X4' OVERFLOW CONTROL STRUCTURE
PROFILE  PLAN  ○# SECTION	 PLAN  PROFILE  SECTION	 PLAN PROFILE SECTION 
2'X2' JUNCTION BOX	**2'X4' JUNCTION BOX**	**WATER LEVEL CONTROL STRUCTURE**
 PLAN  PROFILE  SECTION	 PLAN  PROFILE  SECTION	 PLAN PROFILE SECTION

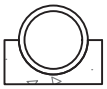
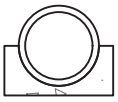
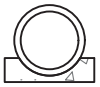
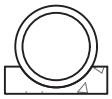
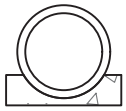
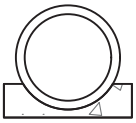
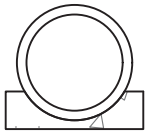
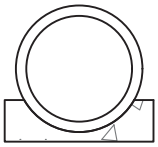
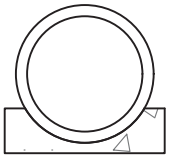
DESIGN PLAN BLOCK LIBRARY

SEWER SECTION

EGG SHAPED 2'-3" X 1'-6" 	EGG SHAPED 2'-6" X 1'-8" 	EGG SHAPED 3'-0" X 2'-0" 	EGG SHAPED 3'-3" X 2'-2" 
EGG SHAPED 3'-6" X 2'-4" 	EGG SHAPED 4'-0" X 2'-8" 	EGG SHAPED 4'-6" X 3'-0" 	EGG SHAPED 5'-0" X 3'-4" 
CIRCULAR 2'-0" DIA. 	CIRCULAR 2'-3" DIA. 	CIRCULAR 2'-6" DIA. 	CIRCULAR 2'-9" DIA. 
CIRCULAR 3'-0" DIA. 	CIRCULAR 3'-6" DIA. 	CIRCULAR 4'-0" DIA. 	CIRCULAR 4'-3" DIA. 
CIRCULAR 4'-6" DIA. 	CIRCULAR 4'-9" DIA. 	CIRCULAR 5'-0" DIA. 	VCP 10" DIA. 

DESIGN PLAN BLOCK LIBRARY

SEWER SECTION CONT.

VCP 12" DIA. 	VCP 15" DIA. 	VCP 18" DIA. 	VCP 21" DIA. 	VCP 24" DIA. 
VCP 27" DIA. 	VCP 30" DIA. 	VCP 36" DIA. 	VCP 42" DIA. 	RCP 15" DIA. 
RCP 18" DIA. 	RCP 21" DIA. 	RCP 24" DIA. 	RCP 27" DIA. 	
RCP 30" DIA. 	RCP 36" DIA. 	RCP 42" DIA. 	RCP 48" DIA. 	
RCP 54" DIA. 	RCP 60" DIA. 	RCP 66" DIA. 	RCP 72" DIA. 	

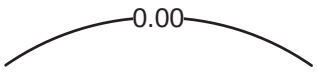
DESIGN PLAN BLOCK LIBRARY

LABELS

MATCHLINE

MATCHLINE
SEE SHEET G-#

PROPOSED CONTOUR LABEL



SYSTEM NUMBER PLAN VIEW

SYSTEM XXXX-X

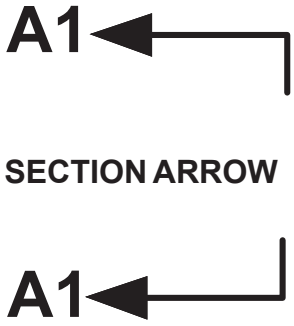
SECTION/DETAIL TITLE

SECTION A1 - A1

SCALE: 1/4" = 1'-0"

DETAIL NAME

SCALE: N.T.S.



SECTION ARROW

INLET LABEL PLAN VIEW

Ⓖ Ⓡ

④ ⑥

PROFILE TITLE

SYSTEM XXXX-XX

ELEVATION VIEW

HORIZONTAL SCALE: 1" = 10'-0"
VERTICAL SCALE: 1" = 5'-0"

ALTERNATIVE PROFILE TITLE

ELEVATION VIEW A1 - A1

HORIZONTAL SCALE: 1" = 10'-0"
VERTICAL SCALE: 1" = 5'-0"

CROSS STREET SECTION TITLE

CROSSING ##TH ST. TO CROSS-STREET INLET (SECTION A1 - A1)

SCALE: 1/4" = 1'-0"

DESIGN PLAN NOTE FOR WORK NEAR OVERHEAD WIRES

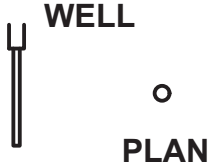
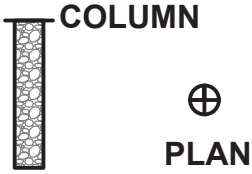
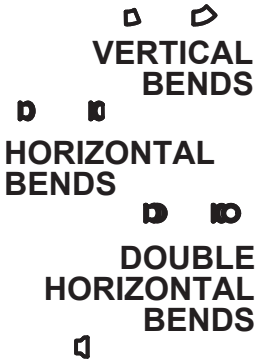
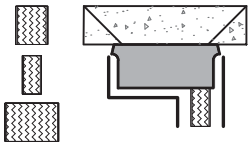
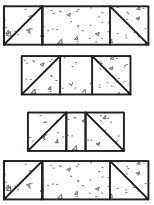
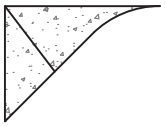
NOTE:
OVERHEAD WIRES ON X SIDE OF X STREET.

DESIGN PLAN NOTE FOR WORK NEAR TRANSMISSION MAINS

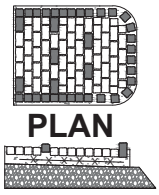
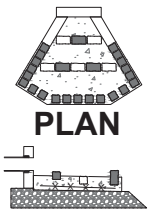
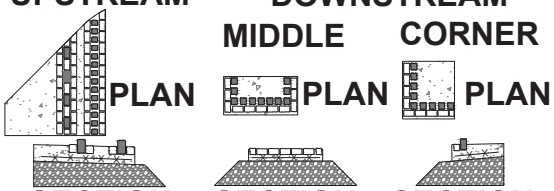
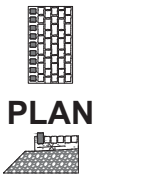
NOTE:
THE CONTRACTOR IS ADVISED TO EXERCISE CAUTION DURING CONSTRUCTION ABOVE, BELOW, OR ADJACENT TO THE XX" WATER MAIN. SUFFICIENT CLEARANCE SHOULD BE MAINTAINED BETWEEN ANY PROPOSED PIPES AND THE EXISTING MAIN AT CROSSINGS. A PWD INSPECTOR MUST BE PRESENT DURING THE CONSTRUCTION OF PROPOSED PIPE IN THE VICINITY OF THE EXISTING WATER MAIN. CONTRACTOR SHALL ENSURE THAT THE PIPE LENGTH DIRECTLY ABOVE THE MAIN IS CENTERED TO MAXIMIZE THE DISTANCE BETWEEN THE PROPOSED PIPE JOINTS AND THE WATER MAIN. CONTRACTOR SHALL NOT STOCKPILE ANY MATERIAL ABOVE THE WATER MAIN DURING CONSTRUCTION OR OPERATE OR STORE HEAVY EQUIPMENT ABOVE THE MAIN, AND SHALL ENSURE THAT THERE IS NO REDUCTION OF COVER OVER THE MAIN OTHER THAN WHAT IS SHOWN ON THE PLANS. CONTRACTOR TO EXCAVATE BY MANUAL MEANS WITHIN 4' OF THE MAIN.

DESIGN PLAN BLOCK LIBRARY

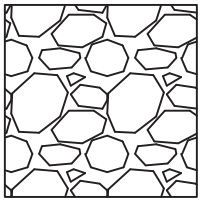
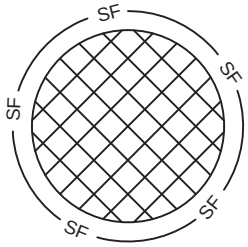
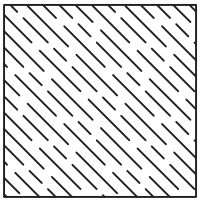
SMP FEATURES

CLEANOUT  PLAN PROFILE	12" DOMED RISER STANDPIPE  PLAN PROFILE	OBSERVATION WELL  PLAN PROFILE	INFILTRATION COLUMN  PLAN PROFILE	PIPE FITTINGS PROFILE  VERTICAL BENDS HORIZONTAL BENDS DOUBLE HORIZONTAL BENDS 8"X12" PIPE REDUCER
12" DOMED RISER  PLAN PROFILE	12" DOMED RISER W/ SUMP  PLAN PROFILE	TRAP PROFILE 	TRAP SECTION 	
SEWER CONNECTIONS  RECONNECT NEW CONNECTION	ANTI SEEP COLLAR  PLAN PROFILE	TRENCH DRAIN 	CONCRETE APRON 	CONCRETE APRON AT BUMPOUT 
WYE FITTING  PLAN PROFILE	FLEXIBLE COUPLING  PLAN PROFILE	SEWER VENT  PLAN PROFILE	UTILITY SLEEVE 	PROPOSED ENDWALL  PLAN PROFILE SECTION

ENERGY DISSIPATERS

CURB CUT -TRENCH DRAIN  PLAN SECTION	ENDWALL  PLAN SECTION	BUMPOUT UPSTREAM DOWNSTREAM MIDDLE CORNER  PLAN PLAN PLAN SECTION SECTION SECTION	STORMWATER PLANTER  PLAN SECTION

EROSION & SEDIMENTATION CONTROL

ROCK CONTRUCTION ENTRANCE 	SOIL STOCKPILE 	ROCK FILTER OUTLET 	WOODCHIP/ PLYWOOD 

DESIGN PLAN BLOCK LIBRARY

SIGN, POLE, LIGHT

LIGHT POLE

PROFILE

UTILITY POLE

PROFILE

SEPTA POLE

PROFILE

20' C-POST

TS(20')

PLAN*

PROFILE

TRAFFIC SIGN

TS

PLAN*

PROFILE

TRAFFIC LIGHT

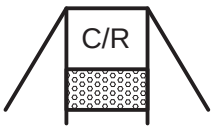
TL

PLAN*

PROFILE

STREET FEATURES

CURB RAMP LANDING OFF



4'x4' ADA LANDING PAD

MAILBOX

MB

PLAN*

PROFILE

FIRE HYDRANT

FH

PLAN*

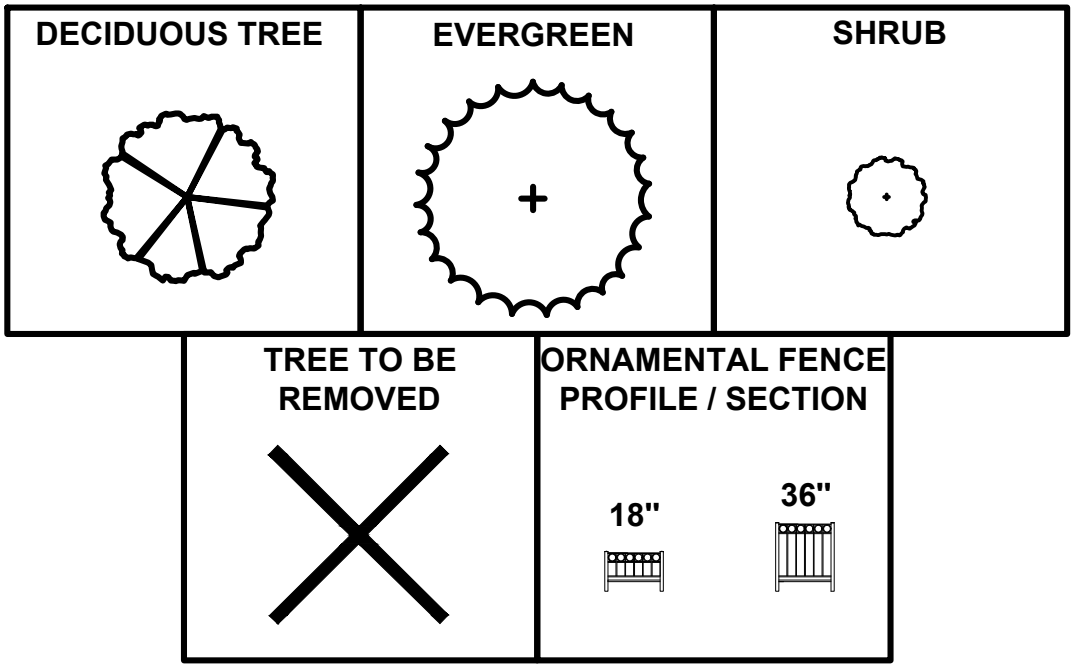
PROFILE

TRAFFIC DELINEATOR

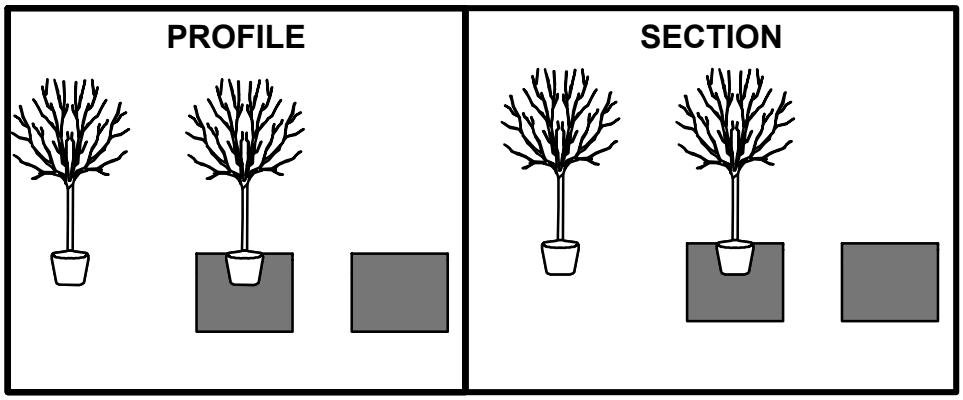
***DO NOT MANUALLY ROTATE BLOCKS CONTAINING NON-ATTRIBUTE TEXT. TEXT WILL ROTATE AUTOMATICALLY TO REMAIN UPRIGHT IN ALL UCS VIEWS IN THE LAYOUT VIEWPORT. BLOCKS WITH TEXT MAY BE ROTATED WITH DYNAMIC BLOCK GRIP. SEE APPENDIX E OF THE PWD GSI SURVEY AND DRAWING STANDARDS FOR INSERTION INSTRUCTIONS.**

DESIGN PLAN BLOCK LIBRARY

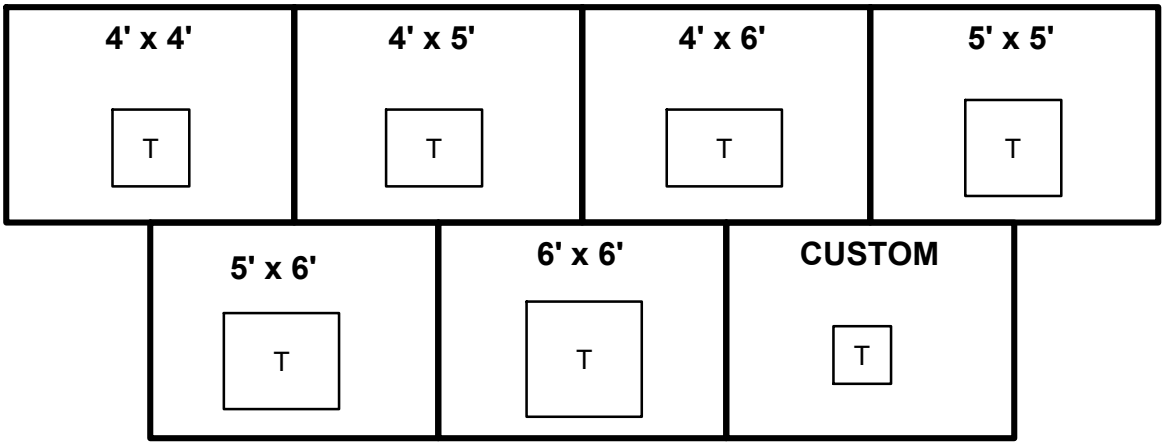
PROPOSED LANDSCAPING



TREE PIT



TREE PIT PLAN VIEW



DESIGN PLAN BLOCK LIBRARY

PROFILE GRID

10 LINES	9 LINES	8 LINES	7 LINES
45 — 45 40 — 40 35 — 35 30 — 30 25 — 25 20 — 20 15 — 15 10 — 10 05 — 05 00 — 00	40 — 40 35 — 35 30 — 30 25 — 25 20 — 20 15 — 15 10 — 10 05 — 05 00 — 00	35 — 35 30 — 30 25 — 25 20 — 20 15 — 15 10 — 10 05 — 05 00 — 00	30 — 30 25 — 25 20 — 20 15 — 15 10 — 10 05 — 05 00 — 00
6 LINES	**5 LINES**	**4 LINES**	**3 LINES**
25 — 25 20 — 20 15 — 15 10 — 10 05 — 05 00 — 00	20 — 20 15 — 15 10 — 10 05 — 05 00 — 00	15 — 15 10 — 10 05 — 05 00 — 00	10 — 10 05 — 05 00 — 00

APPENDIX B: LINETYPES AND HATCHING

EXISTING LINETYPES AND HATCHING

		LOCATION / PLAN VIEW		
ITEM	STYLE	LINE/ HATCH TYPE	SCALE	HATCH ANGLE
ROW LINE	16	CONTINUOUS LINE	1.0	N/A
EXISTING CURB LINE	15	CONTINUOUS LINE	1.0	N/A
PECo LINE	9	PECo LINE*	1.0	N/A
GAS LINE	9	GAS LINE*	1.0	N/A
VERIZON LINE	8	VERIZON LINE*	1.0	N/A
SEPTA LINE	9	SEPTA LINE*	1.0	N/A
SEWER LINE	9	SEWER LINE*	1.0	N/A
WATER LINE	9	WATER LINE*	1.0	N/A
SEPARATE SEWER LINE	9, 9	SEWER LINE* AND SANITARY SEWER LINE	1.0	N/A
STORM SEWER LINE	9	SEWER LINE*	1.0	N/A
STEAM	9	STEAM*	1.0	N/A
SHRUB LINE	3	SHRUBLINE	1.0	N/A
PROPERTY BOUNDARY	8	PROPERTY BOUNDARY*	1.0	N/A
CROSSWALK/ STOP BAR	34	CONTINUOUS LINE	1.0	N/A
NO PARKING BOX	34	CONTINUOUS LINE	1.0	N/A
BUILDING LINE	5	BUILDING LINE	1.0	N/A
BUILDING OUTCROP LINE	3	CONTINUOUS LINE	1.0	N/A
FENCE	3	FENCELINEX	1.0	N/A
EASEMENT	34	EASEMENT*	1.0	N/A

EXISTING LINETYPES AND HATCHING (CONT.)

		LOCATION / PLAN VIEW		
ITEM	STYLE	LINE/ HATCH TYPE	SCALE	HATCH ANGLE
RAILROAD	26	RAILROAD*	1.0	N/A
GRASS	32	GRASS	3.5	VARIES
GSI SYSTEM	3	CONTINUOUS LINE	1.0	N/A
OVERHEAD WIRE	9	OHW	1.0	N/A
TOPO	3	TOPO*	1.0	N/A

***USER DEFINED LINETYPE.**

NOTES: ALL HATCHES IN LOCATION/ PLAN VIEW SHOULD BE ANNOTATIVE. SET DISPLAY ORDER FOR ALL HATCHING TO THE BACK.

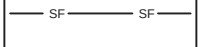
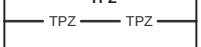
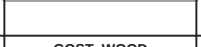
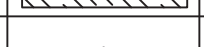
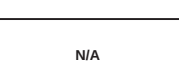
ABANDONED UTILITY LINETYPES

		LOCATION / PLAN VIEW		
ITEM	STYLE	LINE/ HATCH TYPE	SCALE	HATCH ANGLE
PECo LINE	30	PECo LINE*	1.0	N/A
GAS LINE	30	GAS LINE*	1.0	N/A
VERIZON LINE	30	VERIZON LINE*	1.0	N/A
SEPTA LINE	30	SEPTA LINE*	1.0	N/A
SEWER LINE	30	SEWER LINE*	1.0	N/A
WATER LINE	30	WATER LINE*	1.0	N/A
SEPARATE SEWER LINE	30,30	SEWER LINE* AND SANITARY SEWER LINE	1.0	N/A
STORM SEWER LINE	30	SEWER LINE*	1.0	N/A

PROPOSED LINETYPES AND HATCHING

		LOCATION / PLAN VIEW			PROFILE VIEW (1" = 10')			SECTION VIEW ($\frac{1}{4}$" = 1')		
ITEM	STYLE	LINE/ HATCH TYPE	SCALE	HATCH ANGLE	LINE/ HATCH TYPE	SCALE	HATCH ANGLE	LINE/ HATCH TYPE	SCALE	HATCH ANGLE
PROPOSED CURB LINE	14	CONTINUOUS	1.0	N/A	CONT.	1.0	N/A	CONT.	1.0	N/A
STONE TRENCH OUTLINE W/ GEOTEXTILE ON SIDES	20	HIDDEN 2	1.0	N/A	N/A	N/A	N/A	HIDDEN2	1.0	N/A
STONE TRENCH OUTLINE W/ GEOMEMBRANE LINER ON SIDES	20	CONTINUOUS	1.0	N/A	N/A	N/A	N/A	CONT.	1.0	N/A
TRENCH HATCH BOUNDARY	18	SEE ABOVE	N/A	N/A	CONT.	1.0	N/A	N/A	N/A	N/A
TRENCH HATCH	8	DOTS	0.75	N/A	GRAVEL STYLE 34	2.0	15°	GRAVEL STYLE 34	1.0	0°
GEOMEMBRANE LINER ON BOTTOM	27	PLAST, TRANSPARENCY = 50%	1.0	45°	N/A	N/A	N/A	CONT. STYLE 20	1.0	N/A
STONE TRENCH TIER**	15	GW = 0.3	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SOLID PIPE (<24")	15	CONTINUOUS	1.0	N/A	CONT.	1.0	N/A	CONT.	1.0	N/A
SOLID PIPE (>24")	15		1.0	N/A	CONT.	1.0	N/A	CONT.	1.0	N/A
PERFORATED PIPE	15	PERFORATED PIPE*	1.0	N/A	DASHED	1.0	N/A	DASHED	1.0	N/A
STORMWATER SOIL	34	N/A	N/A	N/A	SOLID	40% TRANSPARENCY	0°	SOLID	40% TRANSPARENCY	0°
SAND HATCH	11	N/A	N/A	N/A	AR-SAND	0.25	0°	AR-SAND	0.25	0°
CONCRETE HATCH	34	N/A	N/A	N/A	AR-CONC	0.15	0°	AR-CONC	0.15	0°
ASPHALT HATCH	34	N/A	N/A	N/A	ANSI35	1.00	0°	ANSI35	1.00	0°
BEARING ZONE OR ZONE OF INFLUENCE	3	N/A	N/A	N/A	DASHED2	1.0	N/A	DASHED2	1.0	N/A
TURF GRASS	8	GRASS	0.15	VARIES	GRASS	1.0	N/A	GRASS	1.0	N/A
SMP PLANTING	8	CROSS	0.5	VARIES	N/A	N/A	N/A	N/A	N/A	N/A
PROPOSED PAVEMENT	1	AR-CONC	0.5	0°	N/A	N/A	N/A	N/A	N/A	N/A
PAVEMENT RESTORATION	1	DASHED2	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PERVIOUS PAVERS/ ASPHALT	14	TRIANGLE	5.0	0°	N/A	N/A	N/A	N/A	N/A	N/A
PROPOSED PAVEMENT MARKINGS	27	CONTINUOUS LINE, TRANSPARENCY = 50%, CROSSWALK/STOP BAR - GW = 2.0 NO PARKING BOX - GW = 0.33	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PROPOSED ROADWAY REGRADE	8	ROADWAY REGRADE	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PROPOSED FENCE	10	FENCELINEX	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DWY REPLACE OUTLINE	8	CONTINUOUS	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DRIVEWAY REPLACE HATCH	34	SOLID, TRANSPARENCY = 50%	1.0	0°	N/A	N/A	N/A	N/A	N/A	N/A
DRAINAGE AREA OUTLINE	21	DA*	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A

PROPOSED LINETYPES AND HATCHING (CONT.)

		LOCATION / PLAN VIEW			PROFILE VIEW (1" = 10')			SECTION VIEW ($\frac{1}{4}$" = 1')		
ITEM	STYLE	LINE/ HATCH TYPE	SCALE	HATCH ANGLE	LINE/ HATCH TYPE	SCALE	HATCH ANGLE	LINE/ HATCH TYPE	SCALE	HATCH ANGLE
LIMIT OF DISTURBANCE	21	LOD* 	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SILT FENCE	8	SF* 	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LOD/SILT FENCE	21	LOD SF* 	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SAWCUT LINE	14	DIVIDE2 	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DEMOLITION LINE	20	DEMOLITION* 	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TREE PROTECTION ZONE	12	*TPZ 	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PROHIBITIVE ROOT ZONE	31	CONTINUOUS 	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WOODCHIP/ PLYWOOD	8	GOST_WOOD 	0.03	45°	N/A	N/A	N/A	N/A	N/A	N/A
BACKFILL SOIL	34	N/A	N/A	N/A	EARTH	5.0	45°	EARTH	5.0	45°
BUILDING & EXPECTED FOUNDATION	5	N/A	N/A	N/A		0.3	N/A		0.3	N/A

***USER DEFINED LINETYPE.**

****USE STONE TRENCH TIER LINETYPE TO IDENTIFY LOCATIONS WHERE BOTTOM OF STONE ELEVATION CHANGES, EXCEPT IN LOCATIONS WHERE CHANGE IS FOR STONE BEDDING BENEATH A SUMPED PIPE.**

NOTES: ALL HATCHES IN LOCATION/PLAN VIEW SHOULD BE ANNOTATIVE. SET DISPLAY ORDER FOR ALL HATCHING TO THE BACK.

THE TABLES IN THIS APPENDIX DO NOT SHOW THE LINETYPES AND COLORS ASSOCIATED WITH ALL LAYERS. EXAMPLES OF ALL LAYERS CAN BE FOUND IN THE PWD GSI BASE PLAN BLOCK LIBRARY 2021 AND THE PWD GSI DESIGN PLAN BLOCK LIBRARY 2021. ACCURATE LAYER SELECTION WILL ENSURE THAT THE PROPER LINETYPE AND COLOR ARE USED WITHOUT ANY ADDITIONAL USER ACTION.

APPENDIX C: LETTERING STANDARDS AND TEXT, MULTILEADER, DIMENSION AND TABLE STYLES

City Inlet
Rim Elev. +117.97
Inv. Out Elev. +111.73

City Inlet
Rim Elev. +118.06
Inv. Out Elev. +111.78

7'-9"

Gas 6", 3'-0"± Cover
Water 8", 3'-7"± Cover
Water 6", 3-7"± Cover (ABANDONED)

#5730
2 Story
Br. House

490.000'

Verizon 5"x5", 2'-0"± Cover

4Cl

90°

Grass

4'H Chainlink Fence

4'H Chainlink Fence

Grass

C. Ftw.

Grass

D/W

C/R

TC +117.65
BC +117.64

CP 117.30

4Cl

TC +117.83
BC +117.60

0.08"

TC +118.69
BC +118.48

C. Curb

TC +119.54
BC +119.36

CP .03279

TC +120.50
BC +120.34

Dep. Curb

SYSTEM 1139-06

HASBROOK AVENUE

PARKING
PARKING

PROPOSED DIMENSIONS,
ARIAL BOLD FONT

0.14"

0.24"

℄ +118.59

℄ +119.86

℄ +121.17

H

0.10"

0.10"

STREET NAMES, UPPER CASE,
ARIAL BOLD FONT

Stubbed Sewer Lateral

Existing Callouts and Utility Labels,
Oblique Angle, Lower Case,
Simplex Font

10'-11"

5'-0"

24'-0"

20'-0"

CP 117.00

TC +117.61
BC +117.30

TC +118.50
BC +118.20

C. Curb

TC +119.21
BC +118.94

CP .03401

TC +120.73
BC +120.23

Dep. Curb

TC +121.81
BC +121.41

#52784

5'-0"

0'-6"

C. Ftw.

0.08"

0.06"

D/W

47'-6"

Grass

TC +117.22
BC +117.21

C/R

TC +117.33
BC +116.95

4Cl

90°

Grass

225.000'

Legal Right of Way

Sewer 2'-3"x1'-6" Br., 10'-2"± Cover

Verizon 5"x5", 2'-0"± Cover

8'-8"

0.10"

Grass

1'-1"

6'-8"

2'-9"

5'-0"

46 LF OF 8" PERFORATED
HDPE UNDERDRAIN
@ 0.0% SLOPE

11 LF OF 8" SOLID HDPE
UNDERDRAIN @ 0.0% SLOPE

#403
(E. Sanger St.)
1 Story Brick House

#400
(Sentner St.)
2 Story
Brick Building

0.10"

4'x6' TREE PIT (TYP.)

FULLY LINED TREE TRENCH 1139-06-01

31 LF OF 8" PERFORATED HDPE
DISTRIBUTION PIPE @ 0.0% SLOPE

1 Story Brick Garage

C. Curb CP .00583

Grass

C. Ftw.

TC +117.42
BC +117.13

6"

3'-6"

45° BEND (TYP.)

0.10"

City Inlet
Rim Elev. +117.68
Inv. Out Elev. +112.20

City Inlet
Rim Elev. +117.34
Inv. Out Elev. +111.23

Gas 6", 3'-0"± Cover

PROPOSED CALLOUTS,
UPPER CASE, ARIAL BOLD FONT

BASE PLAN TEXT STYLES - NON-ANNOTATIVE				
NAME	**FONT**	**TEXT HEIGHT**	**EFFECTS**	**USE**
EX-40	simplex.shx	0.40	Width Factor: 1.0 Oblique Angle: 15°	Section text
EX-100	simplex.shx	1.00	Width Factor: 1.0 Oblique Angle: 15°	Building number text
Simplex Ob	simplex.shx	0	Width Factor: 1.0 Oblique Angle: 15°	Text within block library blocks
ARIAL	Arial	0	Width Factor: 1.0 Oblique Angle: 0°	Text within block library blocks
ARIAL BOLD	Arial (Bold)	0	Width Factor: 1.0 Oblique Angle: 0°	Text within block library blocks
LINETYPES	Arial	0	Width Factor: 1.0 Oblique Angle: 0°	Linetype text
LINETYPES I	Arial (Italic)	0	Width Factor: 1.0 Oblique Angle: 0°	Linetype text
LEGEND	Calibri	0	Width Factor: 1.0 Oblique Angle: 0°	Legend text
BASE PLAN TEXT STYLES - ANNOTATIVE				
NAME	**FONT**	**PAPER TEXT HEIGHT**	**EFFECTS**	**USE**
EX-100a	simplex.shx	0.10	Width Factor: 1.0 Oblique Angle: 15°	Building number text
EX-60	simplex.shx	0.06	Width Factor: 1.0 Oblique Angle: 15°	Utility feature text (IE: vent box)
EX-80	simplex.shx	0.08	Width Factor: 1.0 Oblique Angle: 15°	Surface/Land use text (IE: Open Lot)

BASE PLAN MULTILEADER STYLES							
NAME	**ARROWHEAD SIZE**	**LEADER BREAK**	**LANDING DISTANCE**	**ANNOTATIVE**	**MULTILEADER TYPE**	**SOURCE BLOCK / TEXT STYLE**	**ATTACHMENT**
EX-TXT-MISC LBL	0.10	0.1250	0.10	YES	Mtext	EX-100a	Middle of top line
EX-TXT-SECT LBL	0.40	0.1250	0.50	NO	Mtext	EX-40	Middle of top line
EX-TXT-ST FTR LBL	0.08	0.1250	0.08	YES	Mtext	EX-80	Middle of top line
EX-TXT-UTL LBL	0.10	0.1250	0.10	YES	Mtext	EX-100a	Middle of top line
EX-TC BC SPOT ELEV	0.00	0.1250	0.06	YES	Mtext	EX-60	Underline top line
EX-TC BC SPOT ELEV	0.01	0.1250	0.06	YES	Mtext	EX-60	Middle of top line

BASE PLAN DIMENSION STYLES										
NAME	**ANNOTATIVE**	**ARROW SIZE**	**TEXT**	**LINEAR UNIT FORMAT**	**PRECISION**	**SCALE FACTOR**	**ANGULAR UNIT FORMAT**	**DECIMAL DEGREES**	**ZERO SUPPRESSION**	**USE**
EX-DIMS-SECT	NO	0.56	EX-40	Architectural	0'-0"	12	Decimal Degrees	0	0 feet, 0 inches	Section dimension
EX-DIMS-UTIL	YES	0.14	EX-100a	Architectural	0'-0"	12	Decimal Degrees	0	1 feet, 0 inches	Utility offset dimension

DESIGN PLAN TEXT STYLES - NON-ANNOTATIVE				
NAME	**FONT**	**TEXT HEIGHT**	**EFFECTS**	**USE**
EX-40	simplex.shx	0.40	Width Factor: 1.0 Oblique Angle: 15°	Existing section text
EX-50-HORIZ	simplex.shx	0.5	Width Factor: 2.0 Oblique Angle: 15°	Horizontal text for dimensions in elevation view at 1" = 10' scale
EX-50-HORIZ-20	simplex.shx	0.5	Width Factor: 4.0 Oblique Angle: 15°	Horizontal text for dimensions in elevation view at 1" = 20' scale
EX-50-HORIZ-30	simplex.shx	0.5	Width Factor: 6.0 Oblique Angle: 15°	Horizontal text for dimensions in elevation view at 1" = 30' scale
EX-50-VERT	simplex.shx	1.0	Width Factor: 0.5 Oblique Angle: 15°	Vertical text for dimensions in elevation view at 1" = 10' scale
EX-50-VERT-20	simplex.shx	2.0	Width Factor: 0.25 Oblique Angle: 15°	Vertical text for dimensions in elevation view at 1" = 20' scale
EX-50-VERT-30	simplex.shx	3.0	Width Factor: 0.167 Oblique Angle: 15°	Vertical text for dimensions in elevation view at 1" = 30' scale
EX-100	simplex.shx	1.00	Width Factor: 1.0 Oblique Angle: 15°	Existing plan view text
EX-120	simplex.shx	1.20	Width Factor: 1.0 Oblique Angle: 15°	Text for dimensions in section view at 1/12" = 1' scale
G-40	Arial (Bold)	0.40	Width Factor: 1.0 Oblique Angle: 0°	Proposed section text
G-50-HORIZ	Arial (Bold)	0.5	Width Factor: 2.0 Oblique Angle: 0°	Horizontal text for dimensions in elevation view at 1"=10' scale
G-50-HORIZ-20	Arial (Bold)	0.5	Width Factor: 4.0 Oblique Angle: 0°	Horizontal text for dimensions in elevation view at 1"=20' scale
G-50-HORIZ-30	Arial (Bold)	0.5	Width Factor: 6.0 Oblique Angle: 0°	Horizontal text for dimensions in elevation view at 1"=30' scale
G-50-VERT	Arial (Bold)	.95	Width Factor: 0.55 Oblique Angle: 0°	Vertical text for dimensions in elevation view at 1"=10' scale
G-50-VERT-20	Arial (Bold)	2.0	Width Factor: 0.25 Oblique Angle: 0°	Vertical text for dimensions in elevation view at 1"=20' scale
G-50-VERT-30	Arial (Bold)	3.0	Width Factor: 0.167 Oblique Angle: 0°	Vertical text for dimensions in elevation view at 1"=30' scale
G-80	Arial (Bold)	0.8	Width Factor: 1.0 Oblique Angle: 0°	Text for dimensions in section view at 1/8" = 1' scale
G-120	Arial (Bold)	1.2	Width Factor: 1.0 Oblique Angle: 0°	Text for dimensions in section view at 1/12" = 1' scale
Simplex Ob	simplex.shx	0	Width Factor: 1.0 Oblique Angle: 15°	Text within block library blocks
ARIAL	Arial	0	Width Factor: 1.0 Oblique Angle: 0°	Text within block library blocks
ARIAL BOLD	Arial (Bold)	0	Width Factor: 1.0 Oblique Angle: 0°	Text within block library blocks
LINETYPES	Arial	0	Width Factor: 1.0 Oblique Angle: 0°	Linetype text
LINETYPES I	Arial (Italic)	0	Width Factor: 1.0 Oblique Angle: 0°	Linetype text

DESIGN PLAN TEXT STYLES - ANNOTATIVE				
NAME	**FONT**	**PAPER TEXT HEIGHT**	**EFFECTS**	**USE**
EX-100a	simplex.shx	0.10	Width Factor: 1.0 Oblique Angle: 15°	Existing plan view text
G-100	Arial (Bold)	0.10	Width Factor: 1.0 Oblique Angle: 0°	Proposed plan view text
G-100	Arial (Bold)	0.10	Width Factor: 1.0 Oblique Angle: 0°	Proposed landscape plan view text

Note: The 1'' = 20', and 1'' = 30' scales are intended for use with profiles that correlate to GSI Sewer Design Plans. The 1/8'' = 1', and 1/12'' = 1' scales are intended for cross sections that correlate to GSI Sewer Plans.

DESIGN PLAN MULTILEADER STYLES

NAME	ARROWHEAD SIZE	LEADER BREAK	LANDING DISTANCE	ANNOTATIVE	TEXT STYLE	ATTACHMENT	LANDING GAP	USE
EXIST-PROF-TEXT	1.0	0.1250	2.0	NO	EX-50	Middle of top line	0.50	Existing callout for elevation view
EXIST-SECT-TEXT	0.56	0.1250	0.5	NO	EX-40	Middle of top line	0.25	Existing callout for section view
EXIST-TEXT	0.10	0.1250	0.1	YES	EX-100a	Middle of top line	0.10	Existing callout for plan view
PROP-PROF-TEXT	1.0	0.1250	2.0	NO	G-50-HORIZ	Middle of top line	0.50	Proposed callout for elevation view
PROP-SECT-TEXT	0.5	0.1250	0.5	NO	G-40	Middle of top line	0.25	Proposed callout for section view
PROP-TEXT	0.10	0.1250	0.1	YES	G-100	Middle of top line	0.10	Proposed callout for plan view

Note: The 1'' = 20', and 1'' = 30' scales are intended for use with profiles that correlate to GSI Sewer Design Plans. The 1/8'' = 1', and 1/12'' = 1' scales are intended for cross sections that correlate to GSI Sewer Plans.

DESIGN DIMENSION STYLES

NAME	ANNOTATIVE	ARROW SIZE	ARROWHEAD - USER ARROW	TEXT	LINEAR UNIT FORMAT	PRECISION	SCALE FACTOR	ANGULAR UNIT FORMAT	DECIMAL DEGREES	ZERO SUPPRESSION	USE
EX-PROF-DIMS -HORIZ	NO	1.00	_PROFILE ARROW-EX 10 SCALE HORIZ	EX-50-HORIZ	Architectural	0'-0"	12	Decimal Degrees	0	1 feet, 0 inches	Existing feature profile view dimension at 1''=10' scale
EX-PROF-DIMS -HORIZ-20	NO	1.00	_PROFILE ARROW-EX 20 SCALE HORIZ	EX-50-HORIZ-20	Architectural	0'-0"	12	Decimal Degrees	0	1 feet, 0 inches	Existing feature profile view dimension at 1''=20' scale
EX-PROF-DIMS -HORIZ-30	NO	1.00	_PROFILE ARROW-EX 30 SCALE HORIZ	EX-50-HORIZ-30	Architectural	0'-0"	12	Decimal Degrees	0	1 feet, 0 inches	Existing feature profile view dimension at 1''=30' scale
EX-PROF-DIMS -VERT	NO	1.00	_PROFILE ARROW-EX 10 SCALE VERT	EX-50-VERT	Architectural	0'-0"	12	Decimal Degrees	0	1 feet, 0 inches	Existing feature profile view dimension at 1''=10' scale
EX-PROF-DIMS -VERT-20	NO	1.00	_PROFILE ARROW-EX 20 SCALE VERT	EX-50-VERT-20	Architectural	0'-0"	12	Decimal Degrees	0	1 feet, 0 inches	Existing feature profile view dimension at 1''=20' scale
EX-PROF-DIMS -VERT-30	NO	1.00	_PROFILE ARROW-EX 30 SCALE VERT	EX-50-VERT-30	Architectural	0'-0"	12	Decimal Degrees	0	1 feet, 0 inches	Existing feature profile view dimension at 1''=30' scale
PR-PROF-DIMS-HORIZ	NO	1.00	_PROFILE ARROW-PROP 10 SCALE HORIZ	G-50-HORIZ	Architectural	0'-0"	12	Decimal Degrees	0	1 feet, 0 inches	Proposed feature profile view dimension at 1''=10' scale
PR-PROF-DIMS-HORIZ-20	NO	1.00	_PROFILE ARROW-PROP 20 SCALE HORIZ	G-50-HORIZ-20	Architectural	0'-0"	12	Decimal Degrees	0	1 feet, 0 inches	Proposed feature profile view dimension at 1''=20' scale
PR-PROF-DIMS-HORIZ-30	NO	1.00	_PROFILE ARROW-PROP 30 SCALE HORIZ	G-50-HORIZ-30	Architectural	0'-0"	12	Decimal Degrees	0	1 feet, 0 inches	Proposed feature profile view dimension at 1''=30' scale
PR-PROF-DIMS-VERT	NO	1.00	_PROFILE ARROW-PROP 10 SCALE VERT	G-50-VERT	Architechural	0'-0"	12	Decimal Degrees	0	1 feet, 0 inches	Proposed feature profile view dimension at 1''=10' scale
PR-PROF-DIMS-VERT-20	NO	1.00	_PROFILE ARROW-PROP 10 SCALE VERT	G-50-VERT-20	Architechural	0'-0"	12	Decimal Degrees	0	1 feet, 0 inches	Proposed feature profile view dimension at 1''=20' scale
PR-PROF-DIMS-VERT-30	NO	1.00	_PROFILE ARROW-PROP 10 SCALE VERT	G-50-VERT-30	Architechural	0'-0"	12	Decimal Degrees	0	1 feet, 0 inches	Proposed feature profile view dimension at 1''=30' scale
PR-DIMS	YES	0.14	N/A	G-100	Architectural	0'-0"	12	Decimal Degrees	0	1 feet, 0 inches	Proposed feature plan view dimension
EX-SECT-DIMS	NO	0.56	N/A	EX-40	Architectural	0'-0"	12	Decimal Degrees	0	1 feet, 0 inches	Existing feature section view dimension at 1/4''=1' scale
EX-SECT-DIMS 1-8	NO	1.12	N/A	EX-80	Architectural	0'-0"	12	Decimal Degrees	0	1 feet, 0 inches	Existing feature section view dimension at 1/8''=1' scale
EX-SECT-DIMS 1-12	NO	1.68	N/A	EX-120	Architectural	0'-0"	12	Decimal Degrees	0	1 feet, 0 inches	Existing feature section view dimension at 1/12''=1' scale
PR-SECT-DIMS	NO	0.56	N/A	G-40	Architectural	0'-0"	12	Decimal Degrees	0	1 feet, 0 inches	Proposed feature section view dimension at 1/4''=1' scale
PR-SECT-DIMS 1-8	NO	1.12	N/A	G-80	Architectural	0'-0"	12	Decimal Degrees	0	1 feet, 0 inches	Proposed feature section view dimension at 1/8''=1' scale
PR-SECT-DIMS 1-12	NO	1.68	N/A	G-120	Architectural	0'-0"	12	Decimal Degrees	0	1 feet, 0 inches	Proposed feature section view dimension at 1/12''=1' scale

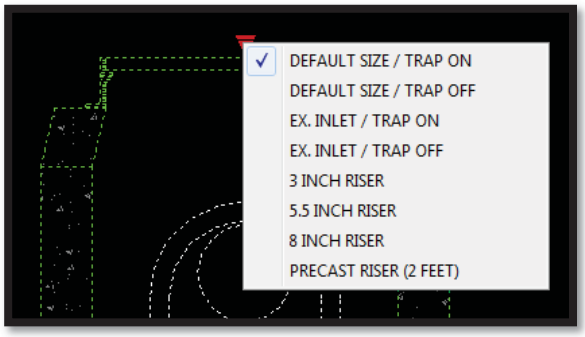
Note: The 1'' = 20', and 1'' = 30' scales are intended for use with profiles that correlate to GSI Sewer Design Plans. The 1/8'' = 1', and 1/12'' = 1' scales are intended for cross sections that correlate to GSI Sewer Plans.

APPENDIX D: DYNAMIC BLOCK FUNCTIONS

Dynamic Block Functions

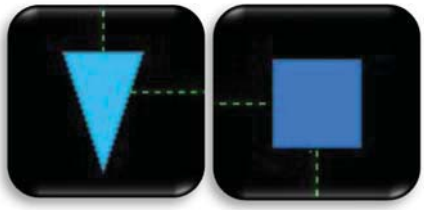
Visibility

The visibility grip allows the drafter to toggle between various visibility states defined within a block. This function essentially allows multiple blocks to be stored within one block by either hiding or showing particular geometry in a visibility state.



By clicking on the triangular visibility grip, the drafter may choose which visibility state is to show. For example, the highway grate inlet block illustrates the usefulness of visibility states by storing variations of the inlet within the same block.

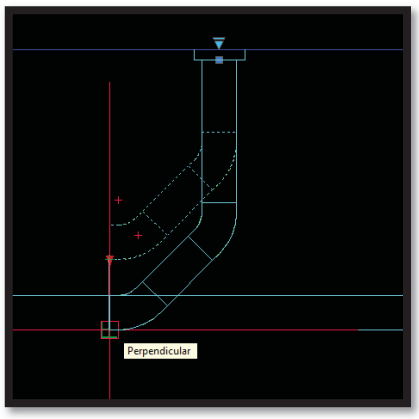
Move Action



The dynamic block move action is associated with two types of grips, an arrowhead shape or a light blue square. Notice that the square grip is a slightly different color than the darker blue square block insert grip. The move action will drag an assigned portion of the block geometry to the location of your choice. It is common for text within blocks to be associated with a move action so that it may be relocated without moving the entire block. Move actions using the square grip allow for geometry to be moved in any direction while move actions using the arrowhead shape constrain the move to a defined axis or along a linear path between two points.

Stretch Action

The stretch action uses the same two types of grips as the move action; however, more commonly the arrowhead shape is used. The stretch action will elongate or shorten the associated geometry within the block. This is useful for the cleanout shown below as the cleanout's geometry is dependent on the depth of the pipe it is connecting to.



Scale Action

The scale action uses the same two grip types as the move and stretch action. The scale action will enlarge or shrink the associated block geometry uniformly.

Rotate Action

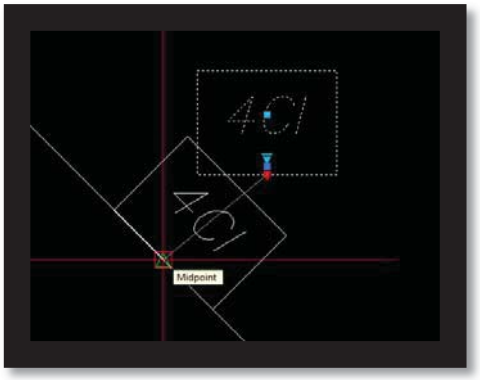
The rotate action uses a circle grip to rotate the associated geometry within the block. Some dynamic blocks are designed to rotate all geometry within the block while others may only have certain objects associated with the dynamic rotate function. If a dynamic block has a rotate action grip, it should be used instead of utilizing AutoCAD's rotate command.

Flip Action

The flip action uses an arrow shaped grip to flip the associated geometry within the block along an axis perpendicular to the arrow alignment. A dynamic block may contain multiple flip actions each associated with different geometry within the block.

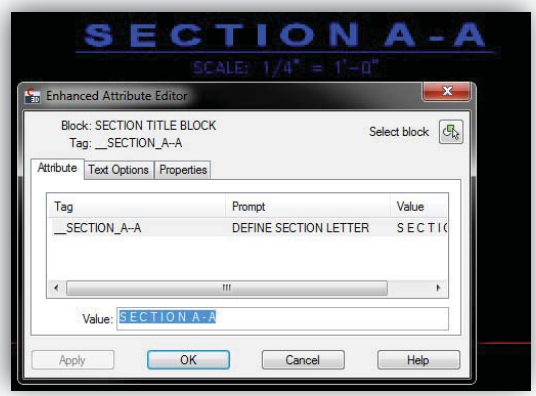
Alignment Action

The alignment action grip will align the block parallel or perpendicular, depending on how the block is set-up, to another object. The grip may be used to move the block near the object to be used for alignment. The block will rotate accordingly when the grip moves over or snaps to the object. Please note, the direction in which the block is brought toward the reference object will determine along which side the block is aligned.

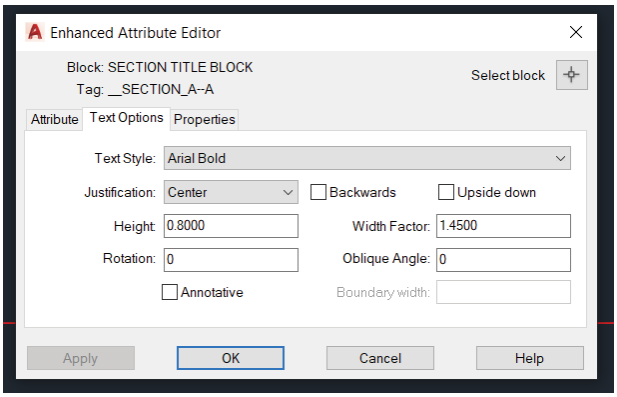


Attribute Text

Attribute text is pre-defined within a block as a placeholder for the user to customize after the block is inserted into the drawing. Upon the insertion of the block, the user will be prompted to define what text value the attribute should display or the user may choose to insert the block with its default text value.



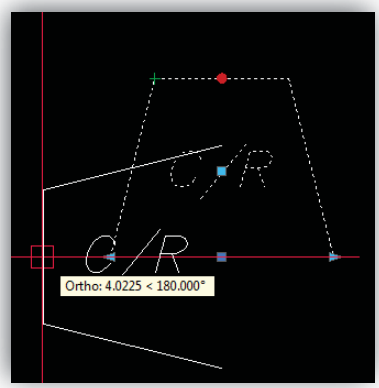
Attribute text may be edited at any time by double-clicking the block which will cause the "Enhanced Attribute Editor" window to display. Changing the value of the attribute will edit what text is displayed.



In the next tab, "Text Options", the user may edit the format of the text displayed by the attribute. Attributes may be made annotative and the rotation may be changed to different values for different scales within the text options tab.

Annotative Text within Blocks

Many common symbols may be made into blocks to save time in drafting. Some symbols are grouped with simple text of a constant value that should display upright in all plan views. Annotative text may be set to match orientation to layout so that it will scale and rotate automatically to display upright and at the correct size within a paper-space viewport that is set to a certain scale and user coordinate system (UCS).



Blocks containing annotative text set to match orientation to layout should not be rotated using AutoCAD's rotate command. This changes the direction the text recognizes as upright to the angle that the block has been rotated to. Blocks may be rotated using the dynamic rotate grip and the text will remain upright as the block geometry rotates.

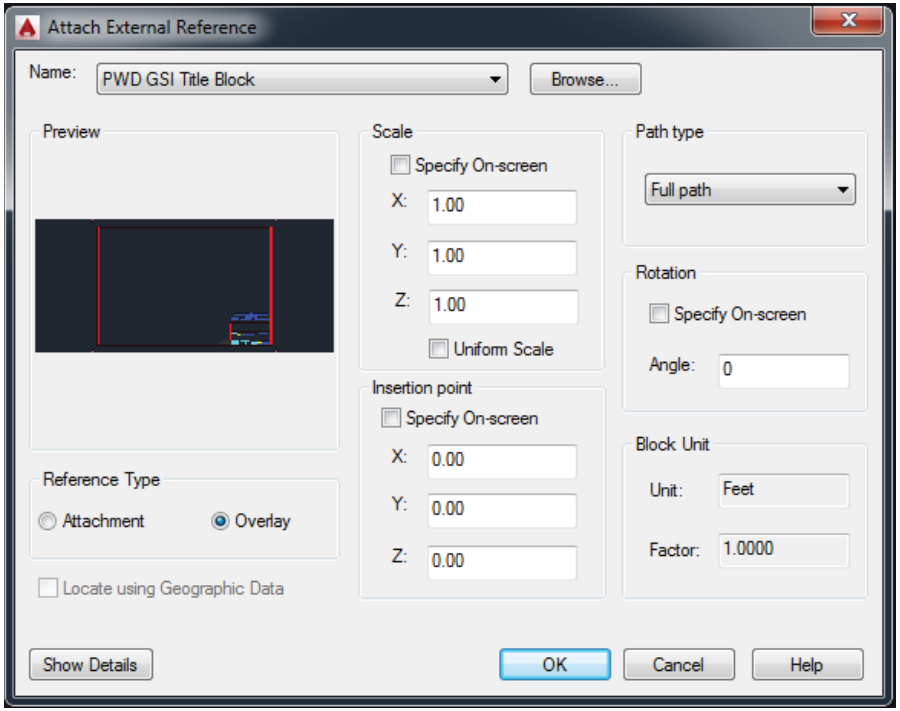
Annotative text set to match orientation to layout will only automatically rotate when viewed through a paper-space viewport and will display in model space at the orientation in which it was inserted. It is recommended that all blocks with this type of text are inserted while in the defined "Plan" UCS. As opposed to the "World" UCS where the site is aligned by true coordinates, the "Plan" UCS shall best orient the site as it should be displayed on the location plan.

APPENDIX E: RECOMMENDED DRAFTING TIPS

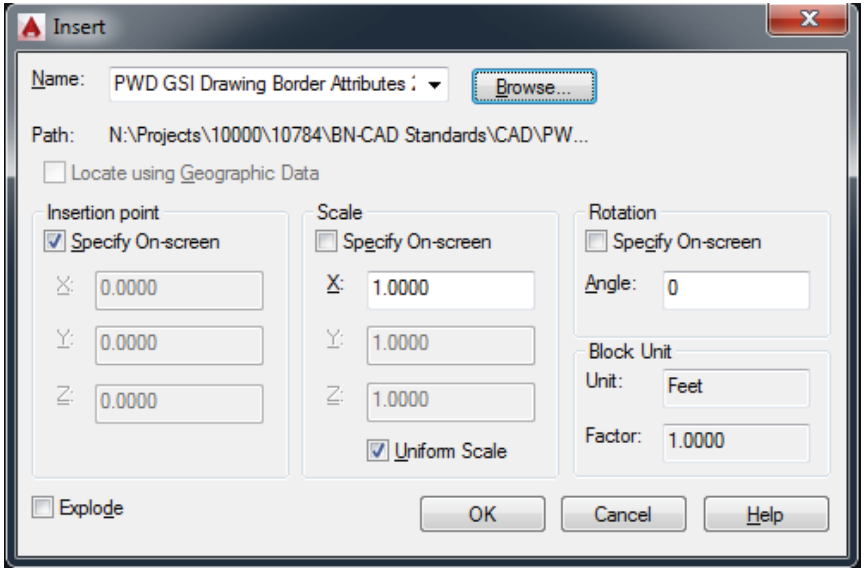
EXTERNAL REFERENCING - TITLE BLOCK EXAMPLE

When externally referencing (xref) the title block, it is recommended to xref it into paper space within the prepared layout tab. If additional layout tabs are created, the referenced title block may be copied and pasted to additional layout tabs in a drawing.

1. Open the layout drawing into which the title block is to be inserted and navigate to the paperspace layout.
2. Open the xref manager (Command: "xref") and click to insert a .dwg reference.
3. Navigate to the copy of the "PWD GSI Title Block.dwg" file that you have saved in your project file location and named using the proper file naming convention for the project and select to open.
4. Accept the default settings as shown below:



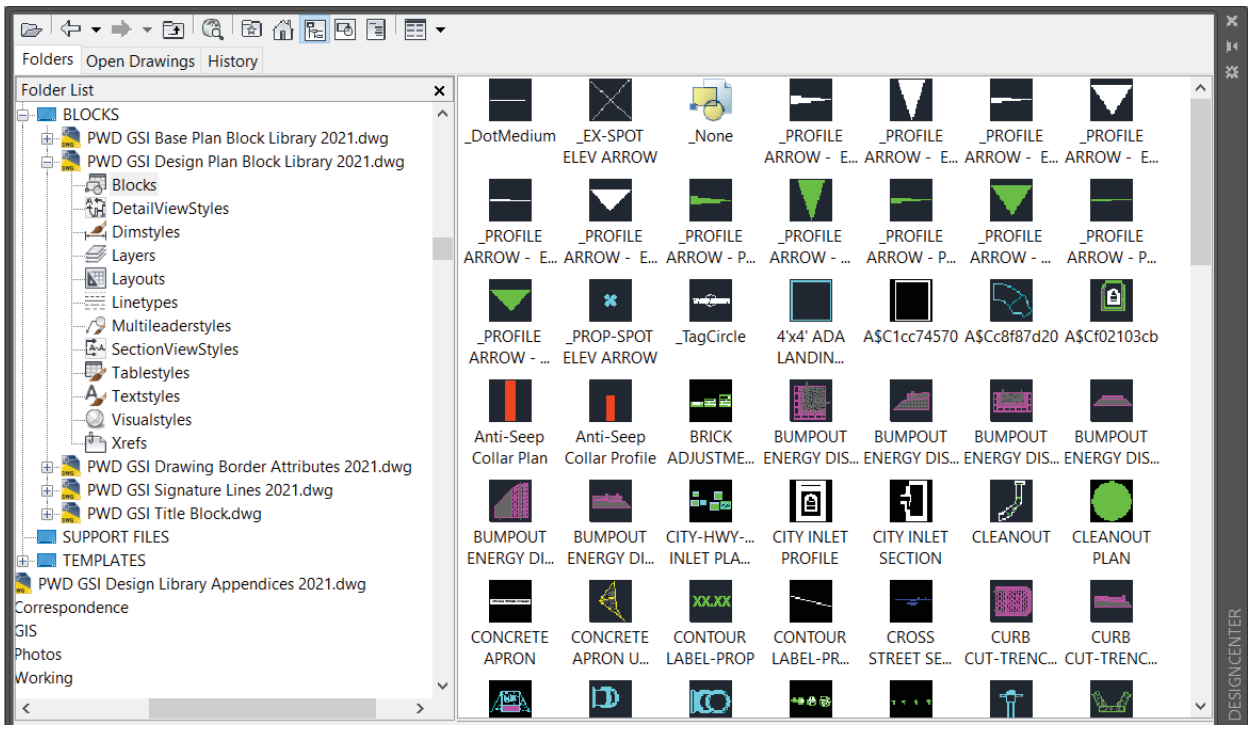
5. To insert the title block attributes that pair with the title block border, use the "Insert" command and select browse to navigate to the "PWD GSI Drawing Border Attributes 2021.dwg" file and select to open.
6. Please accept the default settings as shown below:



7. Upon block insertion you will be prompted to fill out the project information or accept the default values.

Please note that the above instructions to add an external reference also apply to other types of external reference files. To add references to model space, make model space active before adding the reference file and ensure that you are in the "World" User Coordinate System (UCS). It is recommended that references be inserted using the "Overlay" reference type.

WORKING IN DESIGN CENTER



1. Open the Design Center by typing "DC" in the command line.

2. Under the "Folders" tab on the left, navigate to the block library*.

3. Expand the library and select "Blocks".

4. Once the blocks load to the right, select the block you would like to insert and drag it from the design center dialogue into your drawing's model or paperspace.

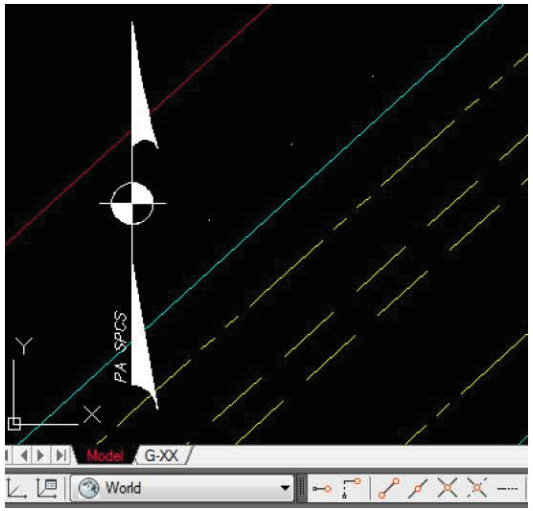
*Note: It is strongly recommended that the block libraries be saved locally to a user's hard drive rather than a network folder when utilizing Design Center. Saving to a network folder may cause lag and non-responsiveness. A default local drive location for files to be accessed through design center is "C:\Program Files\Autodesk\<Select Year Version>\Sample\en-us\DesignCenter" in a typical AutoCAD installation. Please note that you will need to replace <Select Year Version> with your version of AutoCAD.

INSERTING BLOCKS CONTAINING MATCH-ORIENTATION-TO-LAYOUT TEXT

Many of the blocks containing text placed in plan view contain annotative text that will automatically rotate to display horizontally when viewed through a paperspace viewport. In this case it is the User Coordinate System (UCS) set to the viewport that determines the rotation automatically. In order for this to work properly, blocks of this type must be inserted in a certain manner.

To determine which blocks contain match-orientation-to-layout text, see Appendix A for the complete block library. Blocks marked with an asterisk (*) contain this type of text.

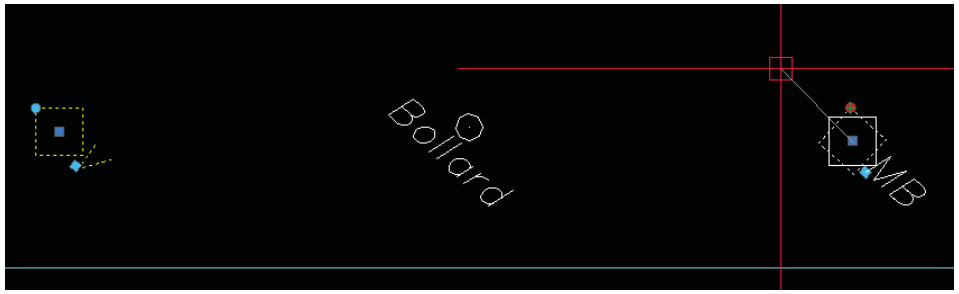
1. Ensure that the UCS is set to "World". Find the area in which the blocks are to be inserted.



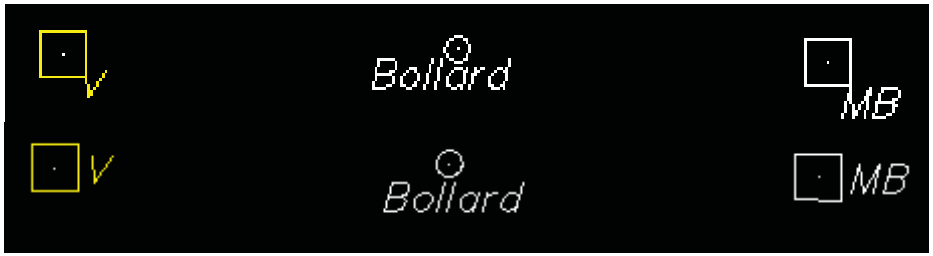
2. Insert the desired block using the "insert" command and place it at the desired location. If the block is not yet loaded in the drawing it will need to be brought in. See the "Working in Design Center" drafting tip in this Appendix for the recommended method.

3. While still in model space, switch to a UCS aligned as the plan will be shown on the layout. You will notice that the text will still be aligned such that it would display horizontally in the world UCS. This is correct for the text, however certain symbols will not be aligned as they should. Use the dynamic rotate grip provided to align symbols as desired.

NOTE: Only rotate with the dynamic grip, not the rotate command.



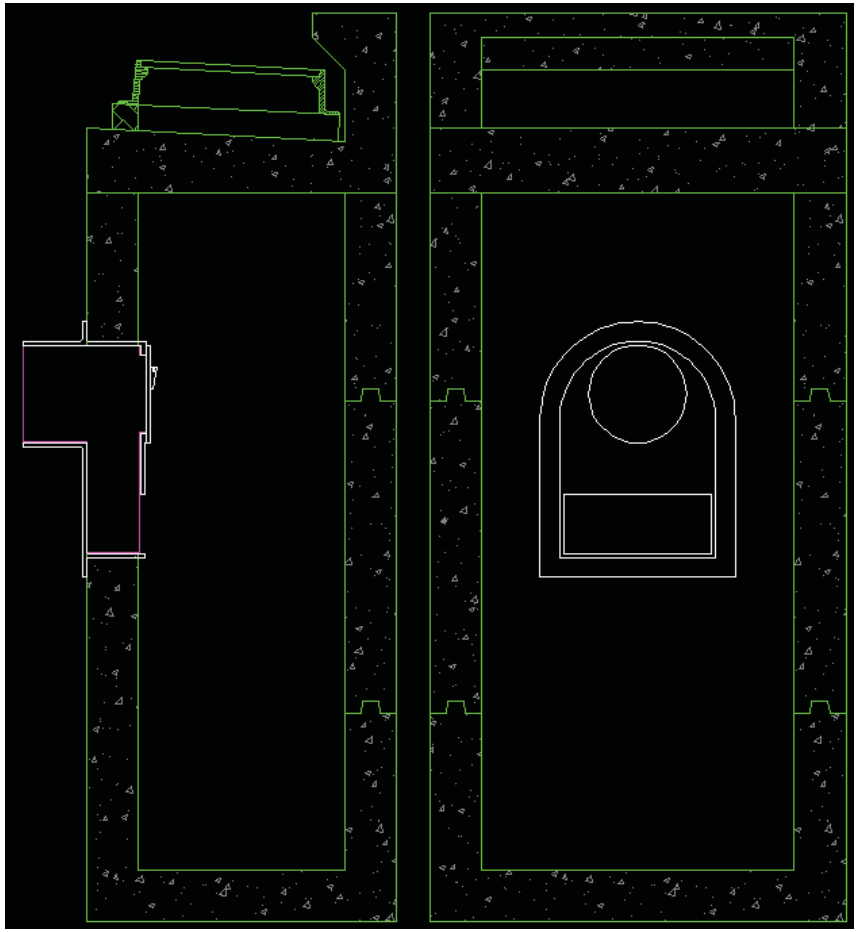
4. Switch to a layout and view the blocks through a viewport. The text should now view horizontally in any UCS. If the text is in conflict with any other item, move the text with the provided dynamic move grip.



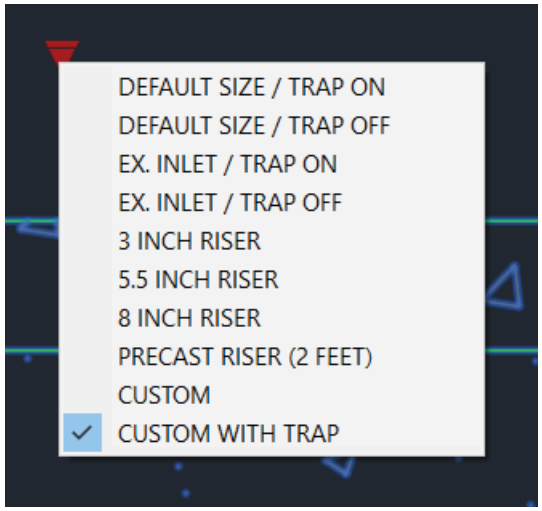
CUSTOM INLET STYLE GUIDE

1.While in model space, import any of the inlet blocks. It is recommended that this be done through the Design Center. Refer to the "WORKING IN DESIGN CENTER" drafting tip in this Appendix.

2.For this example, the "OMG INLET PROFILE" and "OMG INLET SECTION" blocks are used.



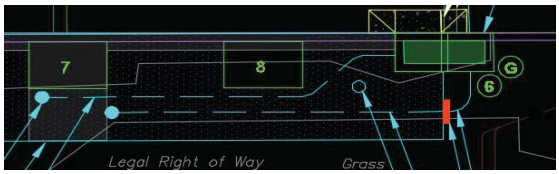
3.For each block, select the "CUSTOM WITH TRAP" visibility state as shown below:



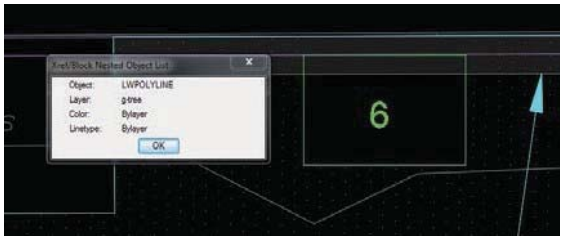
4.This will result in an inlet with a trap that can be adjusted by selecting the associated grip and moving the trap up or down. You also have the option to adjust the sump using the Stretch Action by selecting the grip and pulling it up or down. Note that wherever the trap is placed in section view, the profile view will need to be adjusted accordingly to match inverts, as this is not an automated feature.

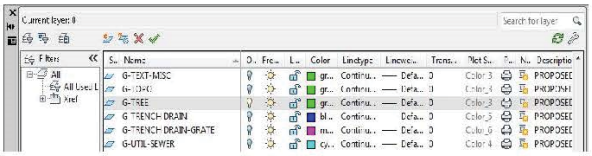
ADDING SCALES TO ANNOTATIVE ATTRIBUTES

1. Blocks with annotative attribute text will insert to the correct size for the scale at which it is inserted. Any additional desired scales must be added as shown below. In this example, the "Tree Pit" block is used.



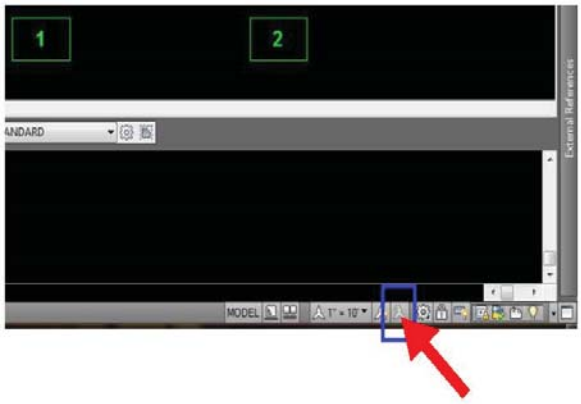
2. Isolate the blocks to which annotation scales will be added. The layer on which the block is inserted as well as the layer(s) used inside of the block must be turned on while all others are turned off or frozen. The layers within the block can be viewed using the "xlist" command.



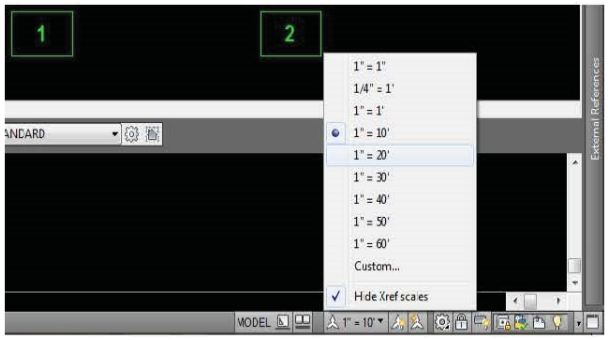


3. If the block is inserted at 10 scale, the text will size for that scale only. If switched to 20 scale, the text size will not change.

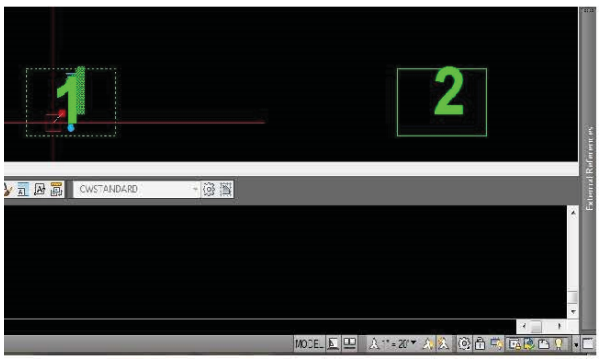
4. Switch back to the scale at which the block was inserted. Enable the function to automatically add scales to annotative objects when the annotation scale changes, as shown below.



5. Switch to the scale which you wish to add to the block. The text should now size appropriately for that scale.

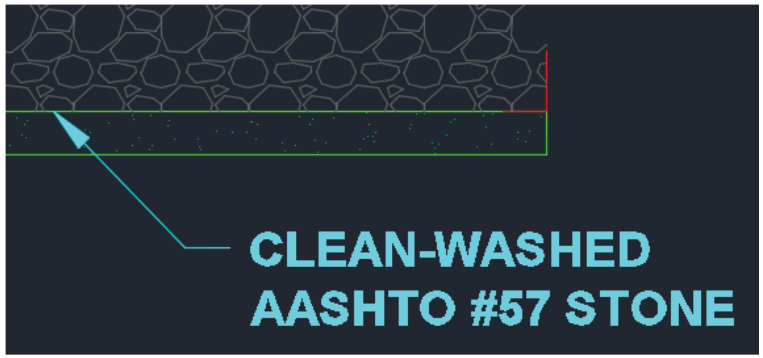


6. After the desired scales have been added, turn off the function to automatically add scales. The previously turned off or frozen layers may now be turned back on. Adjust text location for newly added scales.

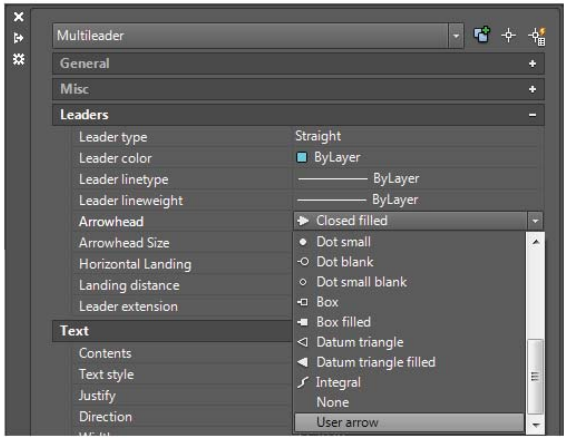


CHANGING A MULTILEADER HEAD TO MEDIUM DOT

1. Select the multileader for which you would like to change the leader head. In most cases, a triangle arrowhead is used, however certain applications merit the use of a dot leader head. In cases where it is difficult to point to an outline, the dot leader is used to point to the internal area of the feature.

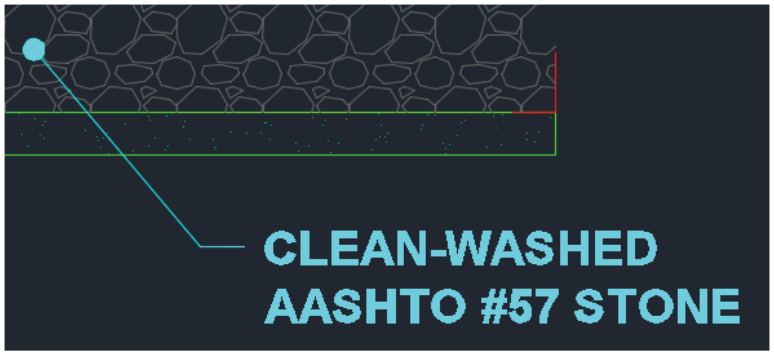


2. Open the properties dialog. Under the "Leaders" section find the line that says "Arrowhead." Click on the drop down menu and select "User Arrow".



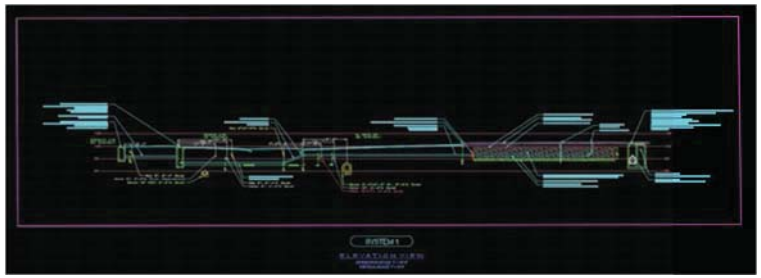
3. When the “Select Custom Arrow Block” window appears, choose “_DotMedium” from the dropdown menu and click OK.

4. The leader head should now show a dot instead of the standard triangle arrowhead. Adjust the leader head to point to a location within the internal area of the object that is being called out.

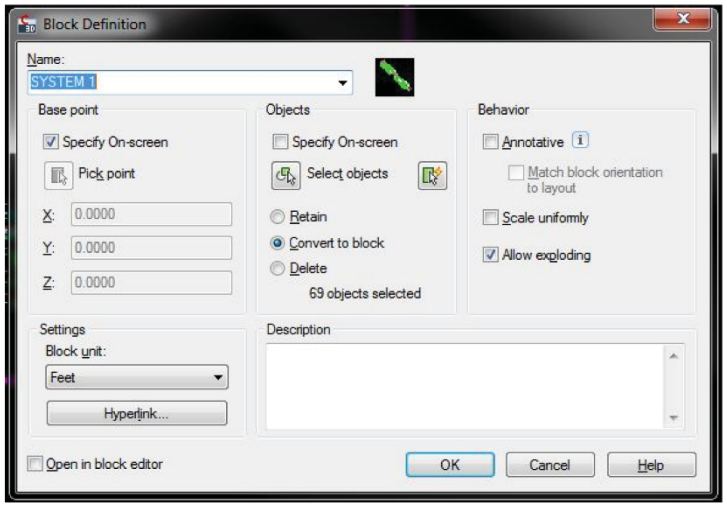


Scaling a Profile at 1"=10' Horizontal Scale and 1"=5' Vertical Scale

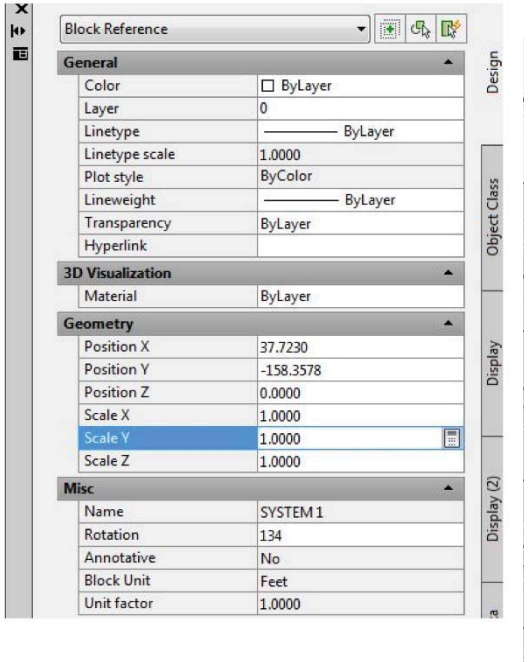
1. In order to ease the drafting process and future revisions, it is recommended that profile/elevation views be drawn at a 1:1 ratio and then vertically stretched by a factor of two. First, select all objects for the profile excluding the title label.



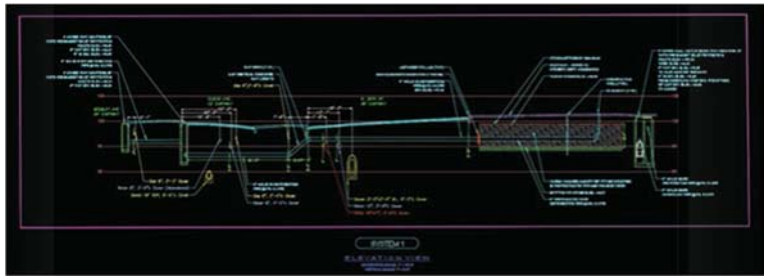
2. Activate the "block" command, and the block definition window will display. Ensure that the box to specify the base point on-screen is selected as well as allowing exploding. Ensure that the box to scale uniformly is not selected. It is recommended that you choose a base point that is consistent between multiple profiles. In this example, the top of the stone trench on the left is chosen.



3. Select the newly-created profile block and open the properties menu. Under the "Geometry" section, change the Scale Y value to 2 to vertically stretch the block.



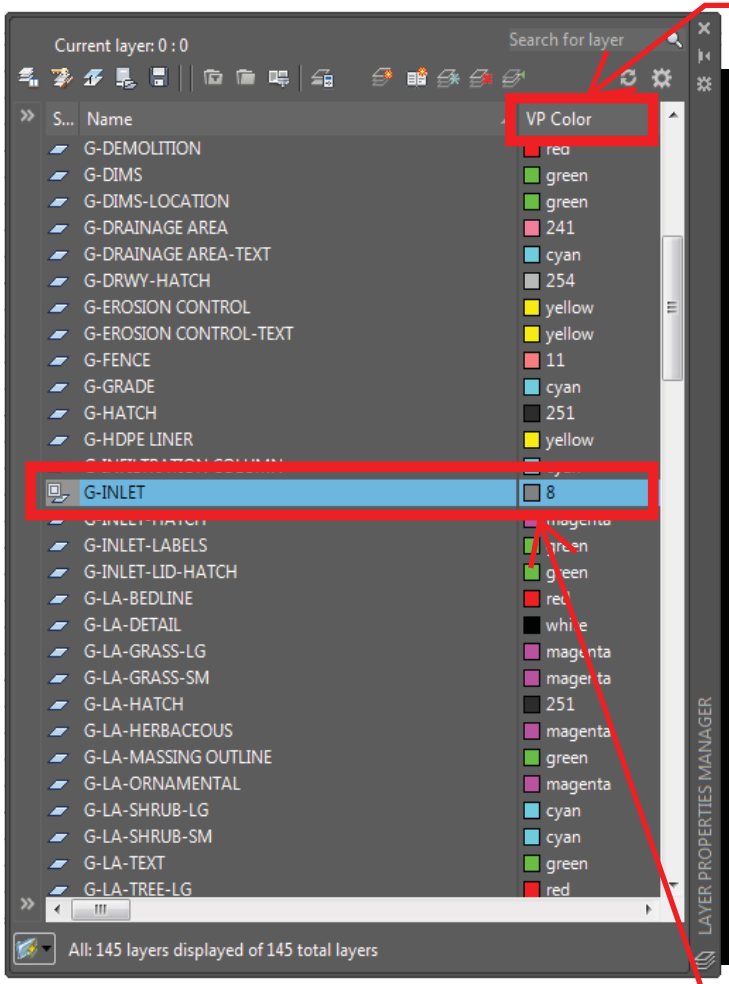
4. Now if displayed through a 10 scale viewport, the vertical scale of the profile will be at 5 scale.

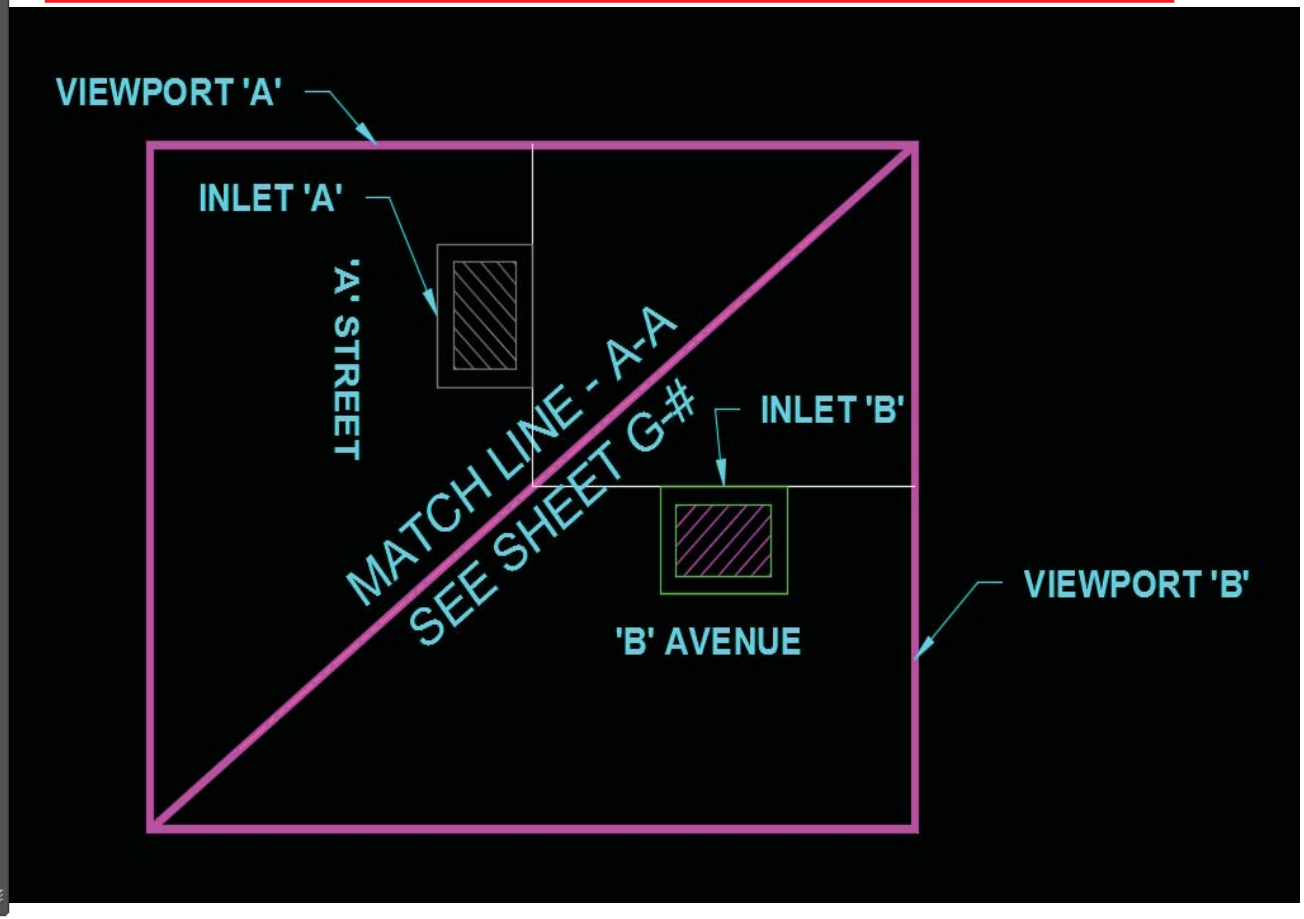


Note: Changes to the profile may be made in the block editor or the block may be exploded. Before exploding the block, be sure to change the "Scale Y" back to 1.

GRAY SCALING FEATURES SEPARATED BY A MATCHLINE

MAKE SURE YOU CHANGE THE COLOR UNDER THE COLUMN "VP Color". "VP" STANDS FOR VIEWPORT.





SELECT COLOR #8 TO GRAY OUT SELECTED LAYERS WHEN PRINTED

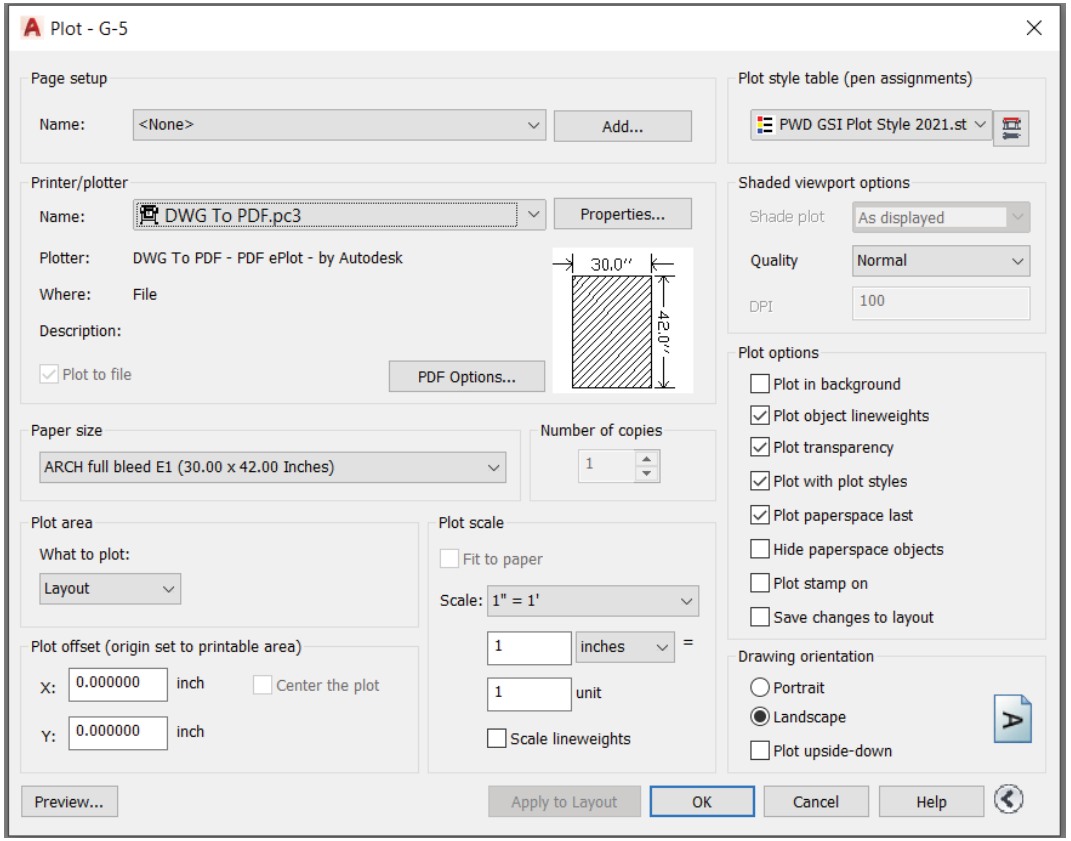
1. Copy an existing viewport over top of itself.
2. Clip the two viewports to share a common edge (the matchline).
3. Activate the viewport containing the layer(s) to be shown as gray.
4. Open the layer properties manager.
5. Select the layer(s) to be shown as gray.
6. Change the VP color to #8.

PLOTTING

1. Please note that all three templates are preset to print using the provided plot style and default "DWG to PDF.pc3" PDF creator (An Autodesk default PDF publisher). Furthermore, paper size, plot scale, plot offset drawing orientation and other plot options have been pre-defined within the templates.

2. It is the user's responsibility to save the provided plot style to the appropriate location on their computer in order for it to map correctly within AutoCAD. See the “PWD GSI CAD Standards Support File Instructions for AutoCAD” document in the SUPPORT FILES folder for instructions on how to load the appropriate plot style into AutoCAD.

3. Accept the default values and press OK to create a full-size PDF. It is recommended to plot from the PDF rather than directly from AutoCAD to maintain consistency. Furthermore, printing half-size or 11x17 prints from the PDF maintainsthe lineweight scale. If you choose to plot directly to your own plotter, please be mindful of the plot area and select the appropriate size paper to print.



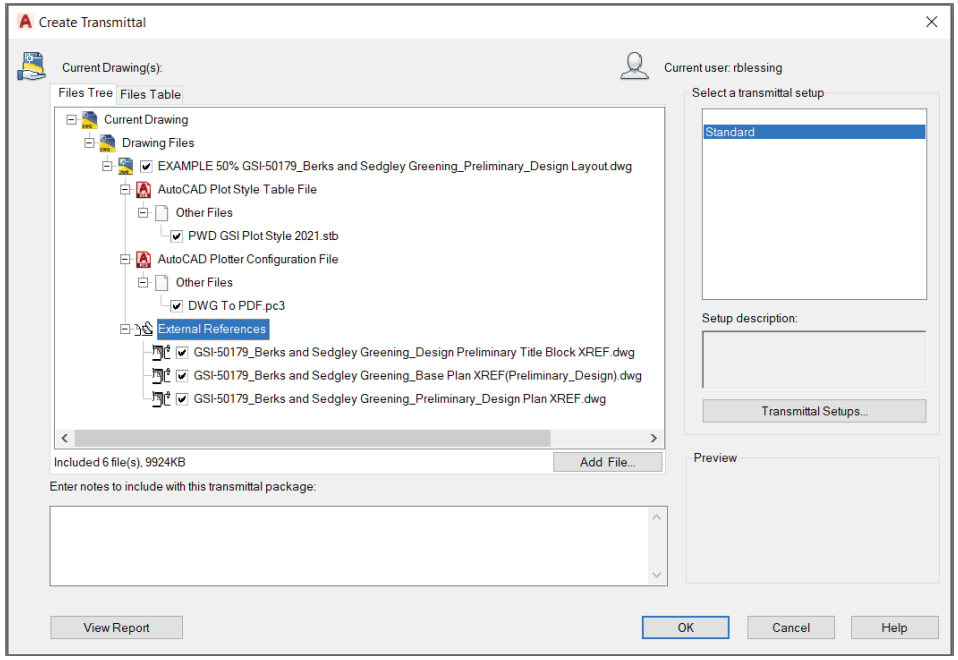
*Note: Some PDF programs may experience errors with certain AutoCAD entities like wipeouts and some hatches. If you notice your drawings are not plotting as they should, for example inconsistently darkened and thickened linework or missing hatching sections, please plot directly to your printer/plotter. If a digital file like a PDF is desired, Review and printed to PDF from there. This will please utilize the "DWF6 ePlot.pc3" print driver. The .dwf file may be opened with Autodesk Design prevent printing errors that may occur with certain PDF software.

"ETRANSMIT" TRANSMITTAL GUIDE

The "Etransmit" function in AutoCAD will automatically package files dependent on a layout drawing. Each layout drawing to be submitted to PWD will need to be “Etransmitted” separately.

1. Open the layout drawing and ensure that there are no unreferenced files. You may check by opening the file references window using the "XREF" command. Unreferenced files are listed as unreferenced in the file status column of the file references window.

2. Once satisfied with the state of the drawing, save the drawing and then use the "Etransmit" command. The "Create Transmittal" window will appear.



3. Review the files tree and ensure that all filenames follow the file naming convention.

4. Click the "OK" button to complete the "Etransmit". A window will appear to browse to the location where you would like the transmittal to be saved.

5. Once complete, the "Etransmit" will have saved a .zip file to the save location you selected. This .zip file along with any additional .zip files for each layout drawing transmittal should be sent to PWD.

6. The "Etransmit" .zip file will be extracted by the recipient. All external references will automatically map to the layout drawing.

IMPORTANT: Once the "Etransmit" .zip file is created, no files within should be renamed, moved, added, or deleted. This will interfere with the automatic remapping of external references when the .zip file is extracted.

APPENDIX F: EXAMPLE PLANS

The following example plans have been provided:

T-1 INDEX SHEET
- Title Sheet

(30%) BASEPLAN
- Detailed Survey Sheet

PRELIMINARY DESIGN (50%) UTILITY & GRADING PLAN
- Rain Garden
- Fully Lined Tree Trench

SUBSTANTIALLY COMPLETE DESIGN (70%) UTILITY & GRADING PLAN
- Rain Garden
- Fully Lined Tree Trench
- Construction Details Sheet
- Large Area Disconnection

PRE-FINAL (90%) DESIGN
- Partially Lined Tree Trench

LANDSCAPE PLANS
- Rain Garden
- Tree Trench
- Landscape Details Sheet

DRAINAGE AREA MAP

CITY OF PHILADELPHIA

PHILADELPHIA WATER DEPARTMENT

DRAWINGS FOR:
GREEN STORMWATER INFRASTRUCTURE PROJECT
BERKS AND SEDGLEY GREENING
PWD WORK NO. S-50179-G

SHEET INDEX

MAP SOURCE: ESRI, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

300' 0 300' 600'
DRAWING SCALE 1" = 300'

LEGEND

WV	Water Curb Box		Unknown Utility Manhole
GV	Gas Curb Box		Utility Manhole
WV	Water Box		Grating
UT	Unknown Curb Box		Cellar Door
UP	Pole		Steps
LP	Lamp Post		Porch
PP	PECo Pole	Planter	Planter
PP	PECo Pole w/ Light	Shelter	Bus Shelter
SP	SEPTA Pole		Curb Ramp
TL	Traffic Light		Compliant Curb Ramp
TS	Traffic Sign		Tree/Trunk Size in "
IP	Iron Pole	10" Stump	Tree Stump w/ Trunk in "
BL	Bollard		Existing Pavement Markings
PM	Parking Meter		Hedge
	Parking Kiosk	Trash	Trash Receptacle
	Standpipe		Fence
CO	Clean Out		Right-of-Way Line
DS	Down Spout		Bike Rack
MB	Mail Box		Existing Top/Bottom of Step
HH	Hand Hole		Existing Top/Bottom of Curb
CATV	Cable Handhole		Existing Spot Elevation
SS	Survey Stone	C. Curb	Concrete Curb
Traffic Control	Traffic Control Box (Above Ground)	G. Curb	Granite Curb
Verizon	Verizon Juction Box (Above Ground)	St. Curb	Slate Curb
BM	Bench Mark	C. Ftw.	Concrete Footway
	Sewer Manhole	Br. Ftw.	Brick Footway
	Water Valve	A. Ftw.	Asphalt Footway
	Fire Hydrant	St. Ftw.	Slate Footway
	Electrolysis Test Station	Dep. Curb	Depressed Curb
	Highway Grate Inlet (4 Denotes 4 FT, 6 Denotes 6 FT)	Br. Gutter	Brick Gutter
	Open Mouth Grate Inlet (4 Denotes 4 FT, 6 Denotes 6 FT)	D/W	Driveway
4CI	City Inlet (4 Denotes 4 FT, 6 Denotes 6 FT)	St. Wall	Stone Wall
#1	Old City Inlet (#1,#2,#3 or #4 Denotes Size)	Br. Wall	Brick Wall
	Old Grate Inlet (#1,#2,#3 or #4 Denotes Size)	C. Wall	Concrete Wall
	Gas Valve	S.R.E.	Sewer Return Elevation
Door	Door Sill	S.R.L.	Sewer Return Location

GENERAL NOTES:

1. ALL DISTANCES SHOWN ARE IN DISTRICT STANDARD MEASUREMENT. PAYMENT FOR ALL WORK WILL BE BASED UPON THAT STANDARD.
2. THE LOCATIONS AND ELEVATIONS OF THE EXISTING UTILITIES ARE APPROXIMATE. THE ELEVATIONS OF THE EXISTING UTILITIES MUST BE FIELD CHECKED DURING CONSTRUCTION.
3. ALL SIDEWALK AND CURBING TO BE REPLACED IN KIND ALONG FULL LIMITS OF CONSTRUCTION TO NEXT EXISTING JOINT OR AS DIRECTED BY PWD.
4. WELDED PIPE BOOT SEAL MUST BE INSTALLED AT ANY POINT WHERE A PIPE PENETRATES GEOMEMBRANE LINER.
5. SUFFICIENT EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR AS TO PREVENT STANDING WATER OR SEDIMENTATION OF STORMWATER SYSTEMS. 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.
6. 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.
7. EROSION CONTROL MATTING SHALL BE PLACED OVER ALL SOIL SURFACES NOT STABILIZED BY PLANTING.
8. SUPPORT AND PROTECT ALL UTILITIES, UTILITY POLES, OVERHEAD WIRES, TRAFFIC SIGNAGE, TRAFFIC SIGNALS, AND STREET LIGHTING WITHIN THE LIMITS OF WORK.
9. VERTICAL DATUM IS ON CITY OF PHILADELPHIA DATUM
10. LINE AND GRADE STAKES FOR CURB, PAVING, ETC. WILL BE FURNISHED BY THE 9TH SURVEY DISTRICT OF THE CITY OF PHILADELPHIA. CONTACT INFORMATION: 9TH SURVEY DISTRICT, 4000 N. AMERICAN ST., PHILA., PA, 19140, (215) 685-3050
11. NOTIFY THE 9TH SURVEY DISTRICT A MINIMUM OF TWO (2) WEEKS PRIOR TO THE START OF WORK TO SCHEDULE A TIME FOR CURB STAKE LAYOUT SERVICES.

PHILADELPHIA WATER DEPARTMENT

PLAN PREPARED FOR THE CITY OF PHILADELPHIA WATER DEPARTMENT BY:

EXAMPLE PLAN 2021 - NOT FOR CONSTRUCTION
THIS PLAN WAS DEVELOPED TO DEMONSTRATE DRAWING STANDARDS AND MAY NOT REFLECT CURRENT DESIGN STANDARDS

DRAFT <MILESTONE>
SUBMISSION <DATE>

INSERT COMPANY LOGO AND ADDRESS HERE

GREEN STORMWATER INFRASTRUCTURE PROJECT

INDEX SHEET

BERKS AND SEDGLEY GREENING

CITY OF PHILADELPHIA
WATER DEPARTMENT

APPROVED _____ CONSULTING ENGINEERING FIRM

APPROVED _____ DEPUTY COMMISSIONER, PLANNING & ENVIRONMENTAL SERVICES

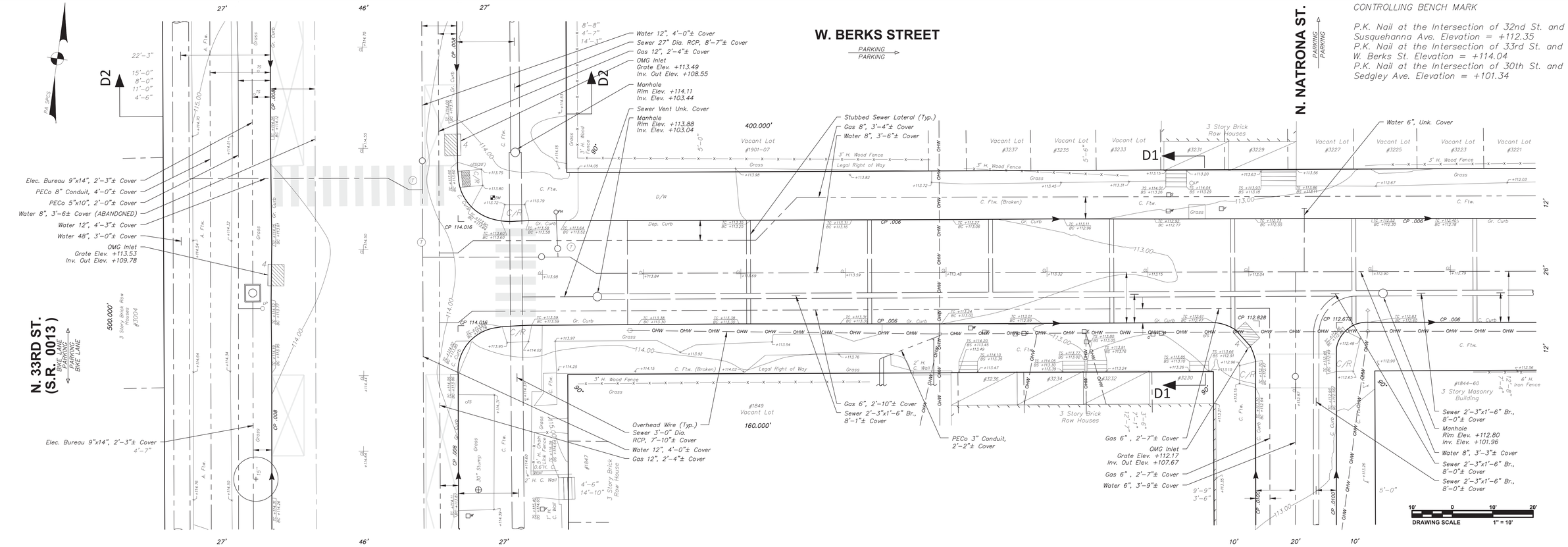
APPROVED _____ WATER COMMISSIONER

SCALE: 1" = 300'

WORK NO. S-50179-G

SHEET NO. T-1 OF 1 SHEETS

DRAWN BY	CAD	XXX XXXX
PROJECT. ENGR.	PROJECT. ENGR.	XXX XXXX
SUPERVISOR		DATE



CONTROLLING BENCH MARK

P.K. Nail at the Intersection of 32nd St. and Susquehanna Ave. Elevation = +112.35
P.K. Nail at the Intersection of 33rd St. and W. Berks St. Elevation = +114.04
P.K. Nail at the Intersection of 30th St. and Sedgley Ave. Elevation = +101.34

S E C T I O N D1 – D1
SCALE: 1/4" = 1'-0"

S E C T I O N D2 – D2
SCALE: 1/4" = 1'-0"

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LEGEND

Water Curb Box	Cable Handhole	Utility Manhole	Existing Top/Bottom of Step
Gas Curb Box	Survey Stone	Grating	Existing Top/Bottom of Curb
Water Box	Traffic Control Box (Above Ground)	Cellar Door	Existing Spot Elevation
Unknown Curb Box	Verizon Junction Box (Above Ground)	Steps	C. Curb — Concrete Curb
Pole	Bench Mark	Porch	G. Curb — Granite Curb
Lamp Post	Sewer Manhole	Planter	St. Curb — Slate Curb
PECo Pole	Water Valve	Bus Shelter	C. Ftw. — Concrete Footway
PECo Pole w/ Light	Fire Hydrant	Curb Ramp	Br. Ftw. — Brick Footway
SEPTA Pole	Electrolysis Test Station	Compliant Curb Ramp	A. Ftw. — Asphalt Footway
Traffic Light	Highway Grate Inlet (4 Denotes 4 FT, 6 Denotes 6 FT)	Tree/Trunk Size in "	St. Ftw. — Slate Footway
Traffic Sign	Open Mouth (4 Denotes 4 FT, 6 Denotes 6 FT) Grate Inlet	Tree/Trunk Size in "	Dep. Curb — Depressed Curb
Iron Pole	City Inlet (4 Denotes 4 FT, 6 Denotes 6 FT)	Existing Pavement Markings	Br. Gutter — Brick Gutter
Bollard	Old City Inlet (#1,#2,#3 or #4 Denotes Size)	Hedge	Dr. — Driveway
Parking Meter	Old Grate Inlet (#1,#2,#3 or #4 Denotes Size)	Trash Receptacle	St. Wall — Stone Wall
Parking Kiosk	Gas Valve	Fence	Br. Wall — Brick Wall
Standpipe	Door Sill	Right-of-Way Line	C. Wall — Concrete Wall
Clean Out	Unknown Utility Manhole	Bike Rack	S.R.E. — Sewer Return Elevation
Down Spout			S.R.L. — Sewer Return Location
Mail Box			
Hand Hole			

NOTICE:

PURSUANT TO THE REQUIREMENTS OF PENNSYLVANIA ACT 50 (2017), THE CONTRACTOR SHALL CONTACT THE PENNSYLVANIA ONE CALL SYSTEM AT 1-800-242-1776, AT LEAST 3 DAYS PRIOR TO EXCAVATION

HIGHWAY DISTRICT NO.	03	WARD NUMBER	28 & 32		
SURVEY DISTRICT NO.	09	DRAINAGE SHT. NO.	40 & 41		
		OUTFALL NO.	D39 & S05	PA ONE CALL	20160991564 20160991569 20160991600

EXAMPLE PLAN 2021 - NOT FOR CONSTRUCTION
THIS PLAN WAS DEVELOPED TO DEMONSTRATE DRAWING STANDARDS AND MAY NOT REFLECT CURRENT DESIGN STANDARDS

PHILADELPHIA WATER DEPARTMENT

PLAN PREPARED FOR THE CITY OF PHILADELPHIA WATER DEPARTMENT BY:

DRAFT BASEPLAN SUBMISSION <DATE>

INSERT COMPANY LOGO AND ADDRESS HERE

GREEN STORMWATER INFRASTRUCTURE PROJECT

BERKS AND SEDGLEY GREENING
BASE PLAN
W. BERKS STREET
N. 33RD ST. TO N. NATRONA ST.

APPROVED _____
CONSULTING ENGINEERING FIRM

CITY OF PHILADELPHIA
WATER DEPARTMENT

SCALES:

PLAN		1"=10'
PROFILE	HORIZ.	N/A
	VERT.	N/A
SECTION		1/4" = 1'

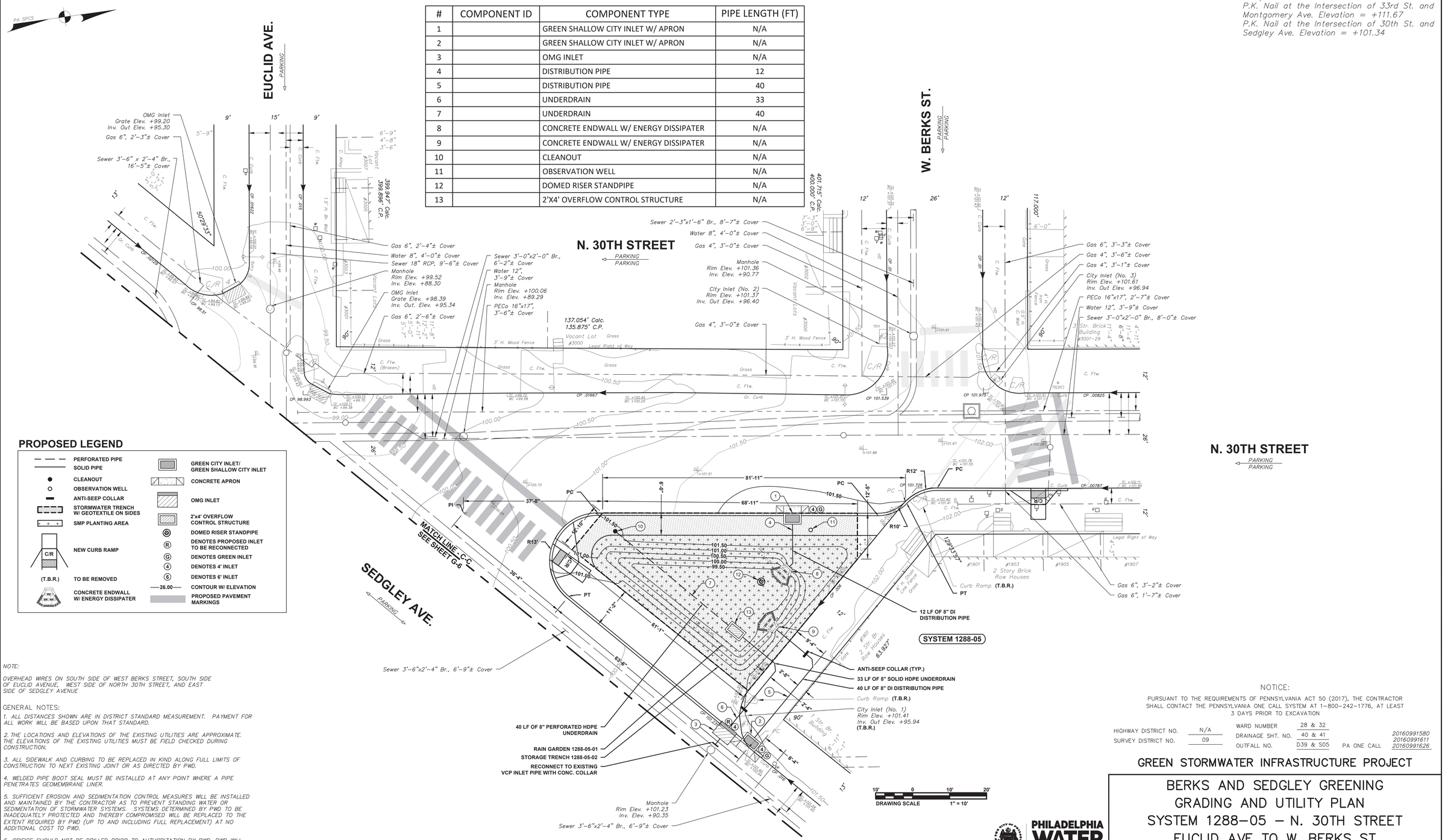
WORK NO. S-50179-G
SHEET NO. G-6 OF 19 SHEETS

DRAWN BY	CAD	XXX XXXX
PROJECT. ENGR.		XXX XXXX

CONTROLLING BENCH MARK

P.K. Nail at the Intersection of 32nd St. and Susquehanna Ave. Elevation = +112.35
P.K. Nail at the Intersection of 33rd St. and Montgomery Ave. Elevation = +111.67
P.K. Nail at the Intersection of 30th St. and Sedgley Ave. Elevation = +101.34

#	COMPONENT ID	COMPONENT TYPE	PIPE LENGTH (FT)
1		GREEN SHALLOW CITY INLET W/ APRON	N/A
2		GREEN SHALLOW CITY INLET W/ APRON	N/A
3		OMG INLET	N/A
4		DISTRIBUTION PIPE	12
5		DISTRIBUTION PIPE	40
6		UNDERDRAIN	33
7		UNDERDRAIN	40
8		CONCRETE ENDWALL W/ ENERGY DISSIPATER	N/A
9		CONCRETE ENDWALL W/ ENERGY DISSIPATER	N/A
10		CLEANOUT	N/A
11		OBSERVATION WELL	N/A
12		DOMED RISER STANDPIPE	N/A
13		2'X4' OVERFLOW CONTROL STRUCTURE	N/A



PROPOSED LEGEND

- PERFORATED PIPE
- SOLID PIPE
- CLEANOUT
- OBSERVATION WELL
- ANTI-SEEP COLLAR
- STORMWATER TRENCH W/ GEOTEXTILE ON SIDES
- SMP PLANTING AREA
- NEW CURB RAMP
- (T.B.R.) TO BE REMOVED
- CONCRETE ENDWALL W/ ENERGY DISSIPATER
- GREEN CITY INLET/ GREEN SHALLOW CITY INLET
- CONCRETE APRON
- OMG INLET
- 2'x4' OVERFLOW CONTROL STRUCTURE
- DOMED RISER STANDPIPE
- (R) DENOTES PROPOSED INLET TO BE RECONNECTED
- (G) DENOTES GREEN INLET
- (4) DENOTES 4' INLET
- (6) DENOTES 6' INLET
- —26.00— CONTOUR W/ ELEVATION
- PROPOSED PAVEMENT MARKINGS

NOTE:

OVERHEAD WIRES ON SOUTH SIDE OF WEST BERKS STREET, SOUTH SIDE OF EUCLID AVENUE, WEST SIDE OF NORTH 30TH STREET, AND EAST SIDE OF SEDGLEY AVENUE

GENERAL NOTES:

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11. NOTIFY THE 9TH SURVEY DISTRICT A MINIMUM OF TWO (2) WEEKS PRIOR TO THE START OF WORK TO SCHEDULE A TIME FOR CURB STAKE LAYOUT SERVICES.

EXAMPLE PLAN 2021 - NOT FOR CONSTRUCTION
THIS PLAN WAS DEVELOPED TO DEMONSTRATE DRAWING STANDARDS AND MAY NOT REFLECT CURRENT DESIGN STANDARDS

DRAFT PRELIMINARY DESIGN SUBMISSION <DATE>

INSERT COMPANY LOGO AND ADDRESS HERE

PHILADELPHIA WATER DEPARTMENT

PLAN PREPARED FOR THE CITY OF PHILADELPHIA WATER DEPARTMENT BY:

NOTICE:

PURSUANT TO THE REQUIREMENTS OF PENNSYLVANIA ACT 50 (2017), THE CONTRACTOR SHALL CONTACT THE PENNSYLVANIA ONE CALL SYSTEM AT 1-800-242-1776, AT LEAST 3 DAYS PRIOR TO EXCAVATION

HIGHWAY DISTRICT NO.	N/A	WARD NUMBER	28 & 32		
SURVEY DISTRICT NO.	09	DRAINAGE SHT. NO.	40 & 41		20160991580
		OUTFALL NO.	D39 & S05	PA ONE CALL	20160991611 20160991626

GREEN STORMWATER INFRASTRUCTURE PROJECT

BERKS AND SEDGLEY GREENING GRADING AND UTILITY PLAN SYSTEM 1288-05 – N. 30TH STREET EUCLID AVE TO W. BERKS ST

APPROVED _____ CONSULTING ENGINEERING FIRM

CITY OF PHILADELPHIA WATER DEPARTMENT

SCALES:

PLAN		1"=10'
PROFILE	HORIZ.	N/A
	VERT.	N/A
SECTION		N/A

WORK NO. S-50179-G
SHEET NO. G-5 OF 14 SHEETS

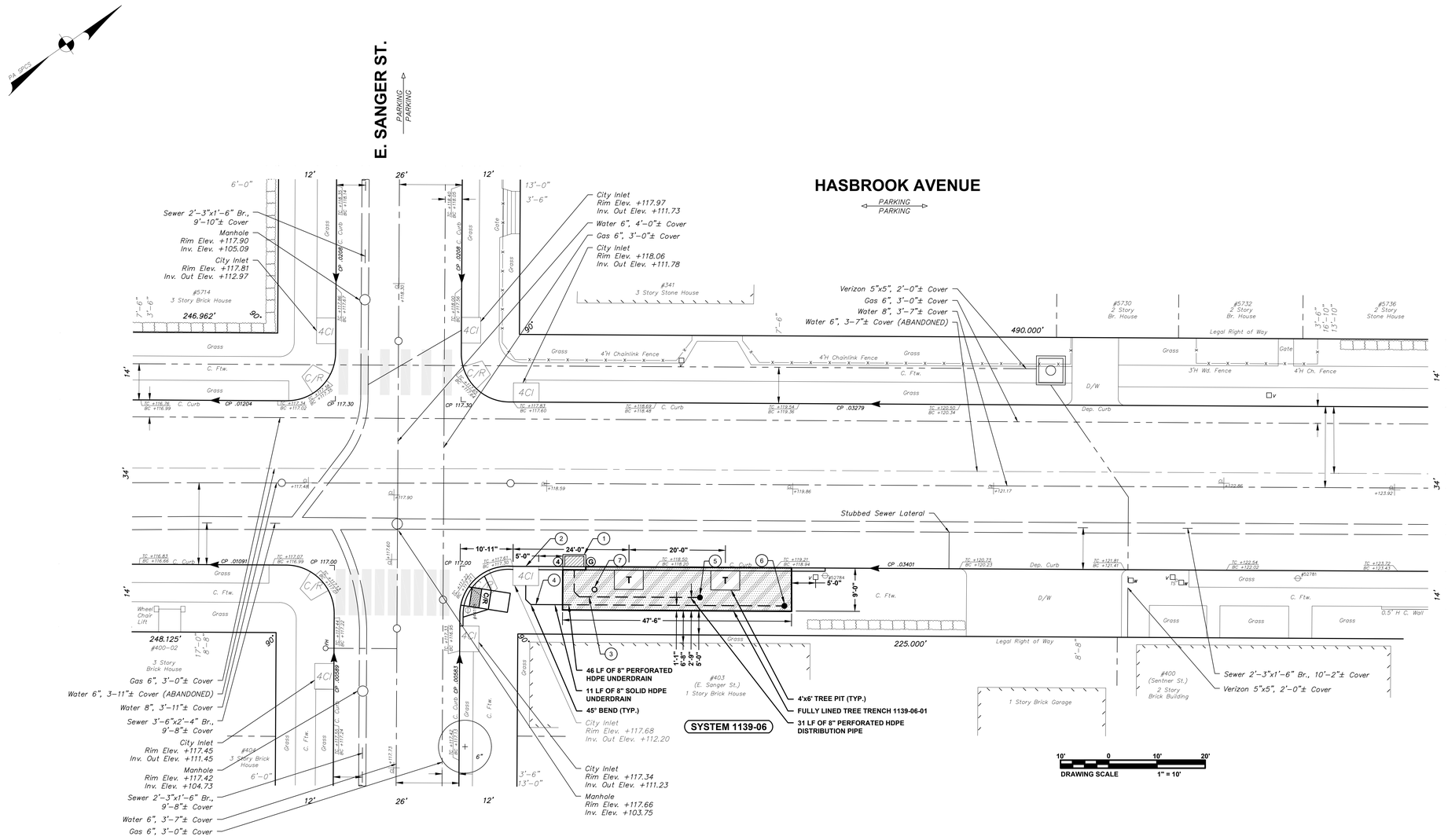
DRAWN BY	CAD	XXX XXXX
PROJECT. ENGR.	PROJECT. ENGR.	XXX XXXX

CONTROLLING BENCH MARK

F. Hyd. rim on the intersection of Rising Sun Avenue and Godfrey Street
Elev. = 121.29

PROPOSED LEGEND

PERFORATED PIPE	CITY INLET
SOLID PIPE	GREEN CITY INLET/ GREEN SHALLOW CITY INLET
CLEANOUT	CONCRETE APRON
OBSERVATION WELL	HIGHWAY GRATE INLET
ANTI-SEEP COLLAR	GREEN HIGHWAY GRATE INLET
STORMWATER TRENCH W/ GEOTEXTILE ON SIDES	TREE PIT
STORMWATER TRENCH W/ GEOMEMBRANE LINER ON SIDES	DENOTES PROPOSED INLET TO BE RECONNECTED
SMP PLANTING AREA	DENOTES GREEN INLET
GEOMEMBRANE LINER ON BOTTOM	DENOTES 4' INLET
NEW CURB RAMP	DENOTES 6' INLET
TO BE REMOVED	



NOTE:

OVERHEAD WIRES ON EAST SIDE OF HASBROOK AVENUE AND NORTH SIDE OF EAST SANGER STREET

GENERAL NOTES:

1. *ALL DISTANCES SHOWN ARE IN DISTRICT STANDARD MEASUREMENT. PAYMENT FOR ALL WORK WILL BE BASED UPON THAT STANDARD.*
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11. *NOTIFY THE 5TH SURVEY DISTRICT A MINIMUM OF TWO (2) WEEKS PRIOR TO THE START OF WORK TO SCHEDULE A TIME FOR CURB STAKE LAYOUT SERVICES.*

#	COMPONENT ID	COMPONENT TYPE	PIPE LENGTH (FT)
1		GREEN HWY GRATE INLET	N/A
2		CITY INLET	N/A
3		DISTRIBUTION PIPE	31
4		UNDERDRAIN	57
5		CLEANOUT	N/A
6		CLEANOUT	N/A
7		OBSERVATION WELL	N/A

EXAMPLE PLAN 2021 - NOT FOR CONSTRUCTION
THIS PLAN WAS DEVELOPED TO DEMONSTRATE DRAWING STANDARDS AND MAY NOT REFLECT CURRENT DESIGN STANDARDS

DRAFT PRELIMINARY DESIGN SUBMISSION <DATE>

INSERT COMPANY LOGO AND ADDRESS HERE

PHILADELPHIA WATER DEPARTMENT

PLAN PREPARED FOR THE CITY OF PHILADELPHIA WATER DEPARTMENT BY:

NOTICE:

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HIGHWAY DISTRICT NO.	05	WARD NUMBER	35		
SURVEY DISTRICT NO.	05	DRAINAGE SHT. NO.	80		
		OUTFALL NO.	T-06	PA ONE CALL	20152221167 20152221447

GREEN STORMWATER INFRASTRUCTURE PROJECT

LAWNCREST STREETS SOUTHWEST GRADING & UTILITY PLAN– SYSTEM 1139-06 HASBROOK AVENUE E. SANGER ST. TO SENTNER ST.

APPROVED _____ CONSULTING ENGINEERING FIRM

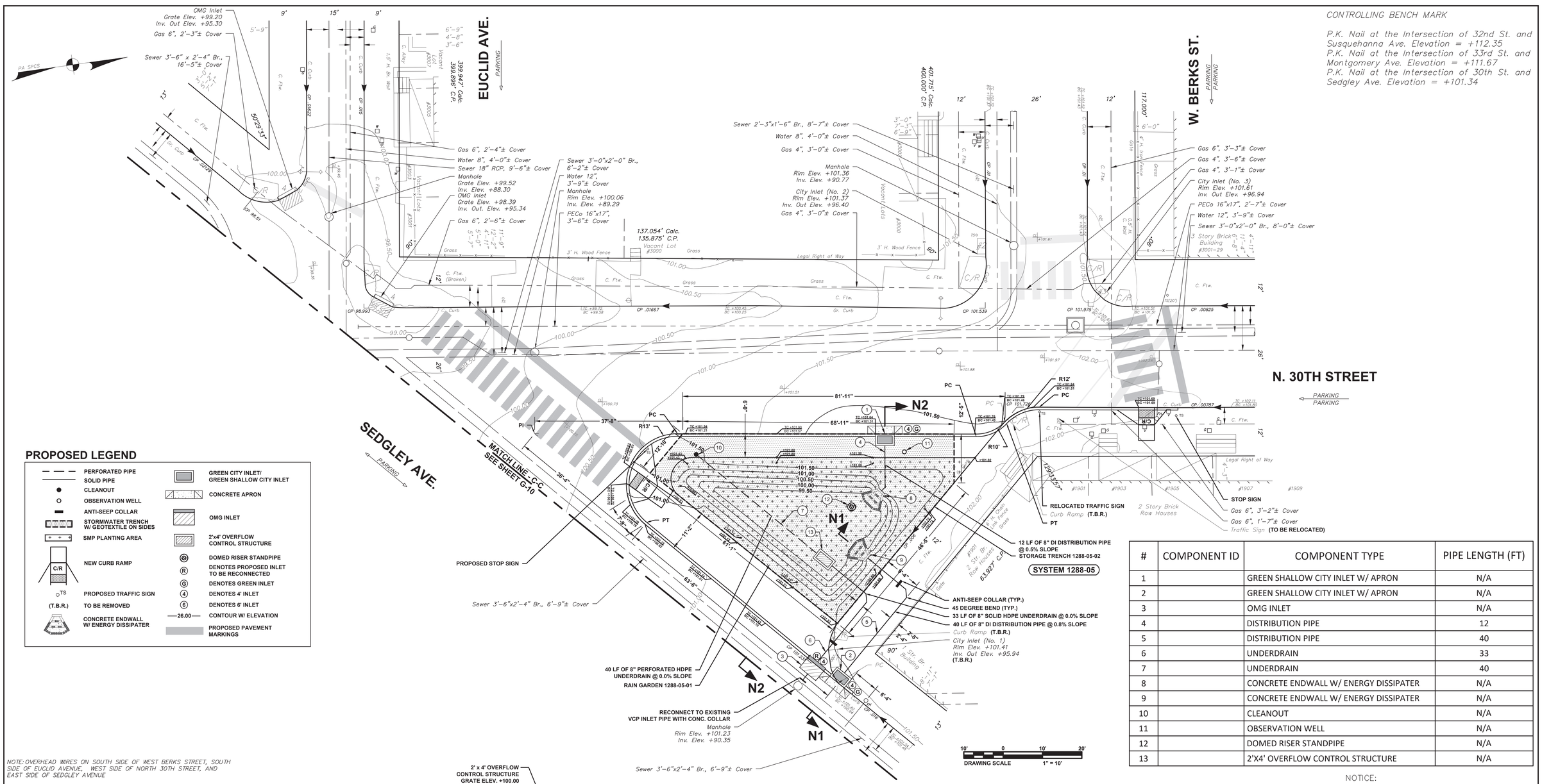
CITY OF PHILADELPHIA WATER DEPARTMENT

SCALES:

PLAN		1"=10'
PROFILE	HORIZ.	N/A
	VERT.	N/A
SECTION		N/A

WORK NO. S-50179-G
SHEET NO. G-13 OF 67 SHEETS

DRAWN BY	CAD	XXX XXXX
PROJECT. ENGR.	PROJECT. ENGR.	XXX XXXX



CONTROLLING BENCH MARK

P.K. Nail at the Intersection of 32nd St. and Susquehanna Ave. Elevation = +112.35
P.K. Nail at the Intersection of 33rd St. and Montgomery Ave. Elevation = +111.67
P.K. Nail at the Intersection of 30th St. and Sedgley Ave. Elevation = +101.34

PROPOSED LEGEND

- PERFORATED PIPE
- SOLID PIPE
- CLEANOUT
- OBSERVATION WELL
- ANTI-SEEP COLLAR
- STORMWATER TRENCH W/ GEOTEXTILE ON SIDES
- SMP PLANTING AREA
- NEW CURB RAMP (C/R)
- PROPOSED TRAFFIC SIGN
- (T.B.R.) TO BE REMOVED
- CONCRETE ENDWALL W/ ENERGY DISSIPATER
- GREEN CITY INLET/ GREEN SHALLOW CITY INLET
- CONCRETE APRON
- OMG INLET
- 2'x4' OVERFLOW CONTROL STRUCTURE
- DOMED RISER STANDPIPE
- DENOTES PROPOSED INLET TO BE RECONNECTED
- DENOTES GREEN INLET
- DENOTES 4' INLET
- DENOTES 6' INLET
- 26.00 CONTOUR W/ ELEVATION
- PROPOSED PAVEMENT MARKINGS

#	COMPONENT ID	COMPONENT TYPE	PIPE LENGTH (FT)
1		GREEN SHALLOW CITY INLET W/ APRON	N/A
2		GREEN SHALLOW CITY INLET W/ APRON	N/A
3		OMG INLET	N/A
4		DISTRIBUTION PIPE	12
5		DISTRIBUTION PIPE	40
6		UNDERDRAIN	33
7		UNDERDRAIN	40
8		CONCRETE ENDWALL W/ ENERGY DISSIPATER	N/A
9		CONCRETE ENDWALL W/ ENERGY DISSIPATER	N/A
10		CLEANOUT	N/A
11		OBSERVATION WELL	N/A
12		DOMED RISER STANDPIPE	N/A
13		2'X4' OVERFLOW CONTROL STRUCTURE	N/A

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HIGHWAY DISTRICT NO. 03
SURVEY DISTRICT NO. 09
WARD NUMBER 28 & 32
DRAINAGE SHT. NO. 40 & 41
OUTFALL NO. D39 & S05
PA ONE CALL 20160991580, 20160991611, 20160991626

NOTE: OVERHEAD WIRES ON SOUTH SIDE OF WEST BERKS STREET, SOUTH SIDE OF EUCLID AVENUE, WEST SIDE OF NORTH 30TH STREET, AND EAST SIDE OF SEDGLEY AVENUE

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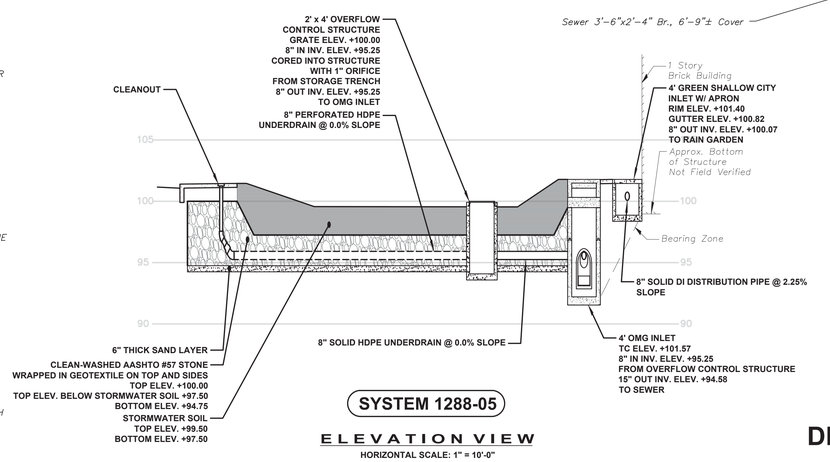

SYSTEM 1288-05

ELEVATION VIEW

HORIZONTAL SCALE: 1" = 10'-0"
VERTICAL SCALE: 1" = 5'-0"

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DRAFT SUBSTANTIALLY COMPLETE DESIGN SUBMISSION <DATE>

PHILADELPHIA WATER DEPARTMENT

PLAN PREPARED FOR THE CITY OF PHILADELPHIA WATER DEPARTMENT BY:

INSERT COMPANY LOGO AND ADDRESS HERE

GREEN STORMWATER INFRASTRUCTURE PROJECT

BERKS AND SEDGLEY GREENING GRADING AND UTILITY PLAN SYSTEM 1288-05 – N. 30TH STREET EUCLID AVE TO W. BERKS ST

APPROVED _____ CONSULTING ENGINEERING FIRM

CITY OF PHILADELPHIA WATER DEPARTMENT

SCALES:
PLAN 1"=10'
PROFILE HORIZ. 1"=10'
VERT. 1"=5'
SECTION 1/4"=1'-0"

WORK NO. S-50179-G
SHEET NO. G-7 OF 19 SHEETS

DRAWN BY	CAD	XXX XXXX
PROJECT. ENGR.	PROJECT. ENGR.	XXX XXXX

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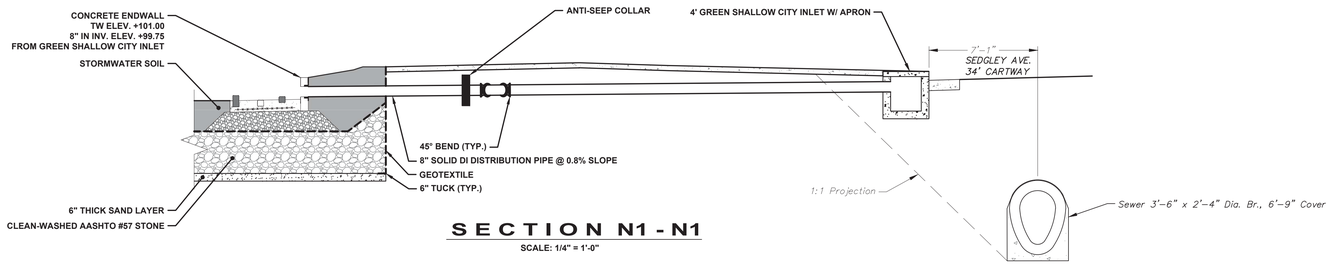
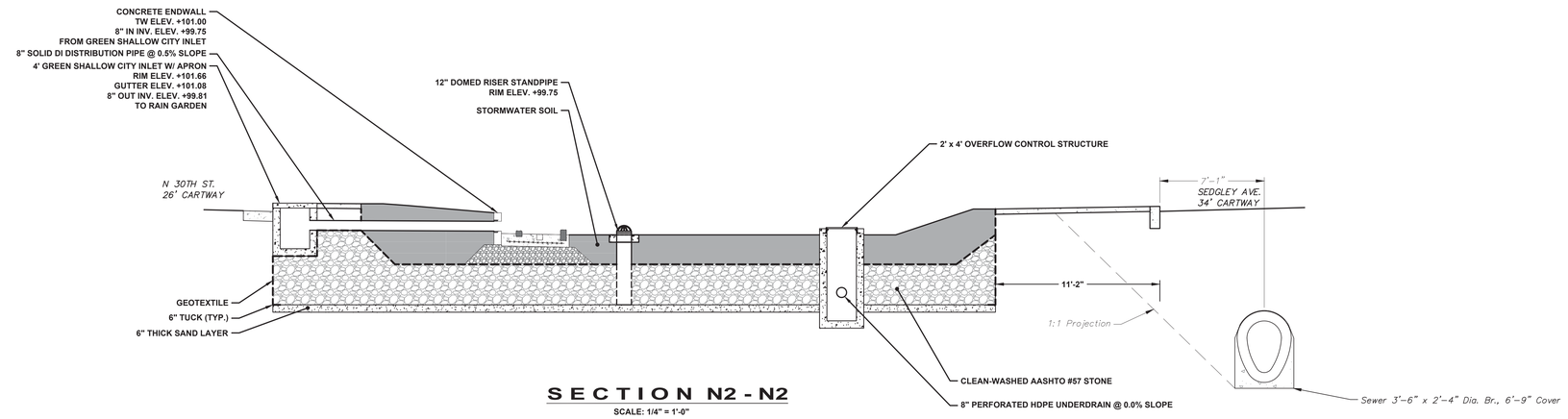


SECTION N1 - N1

SCALE: 1/4" = 1'-0"



SECTION N2 - N2

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GREEN STORMWATER INFRASTRUCTURE PROJECT

BERKS AND SEDGLEY GREENING GRADING AND UTILITY PLAN SYSTEM 1288-05 - N. 30TH STREET EUCLID AVE TO W. BERKS ST

APPROVED _____ CONSULTING ENGINEERING FIRM

CITY OF PHILADELPHIA WATER DEPARTMENT

SCALES:

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WORK NO. S-50179-G
SHEET NO. G-8 OF 19 SHEETS

DRAWN BY	CAD	XXX XXXX
PROJECT. ENGR.	PROJECT. ENGR.	XXX XXXX

CONTROLLING BENCH MARK

F. Hyd. rim on the intersection of Rising Sun Avenue and Godfrey Street
Elev. = 121.29

PROPOSED LEGEND

- PERFORATED PIPE
- SOLID PIPE
- CLEANOUT
- OBSERVATION WELL
- STORMWATER TRENCH W/ GEOTEXTILE ON SIDES
- STORMWATER TRENCH W/ GEOMEMBRANE LINER ON SIDES
- SMP PLANTING AREA
- GEOMEMBRANE LINER ON BOTTOM
- NEW CURB RAMP (C/R)
- (T.B.R.) TO BE REMOVED
- CITY INLET
- GREEN CITY INLET/ GREEN SHALLOW CITY INLET
- CONCRETE APRON
- HIGHWAY GRATE INLET
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- (G) DENOTES GREEN INLET
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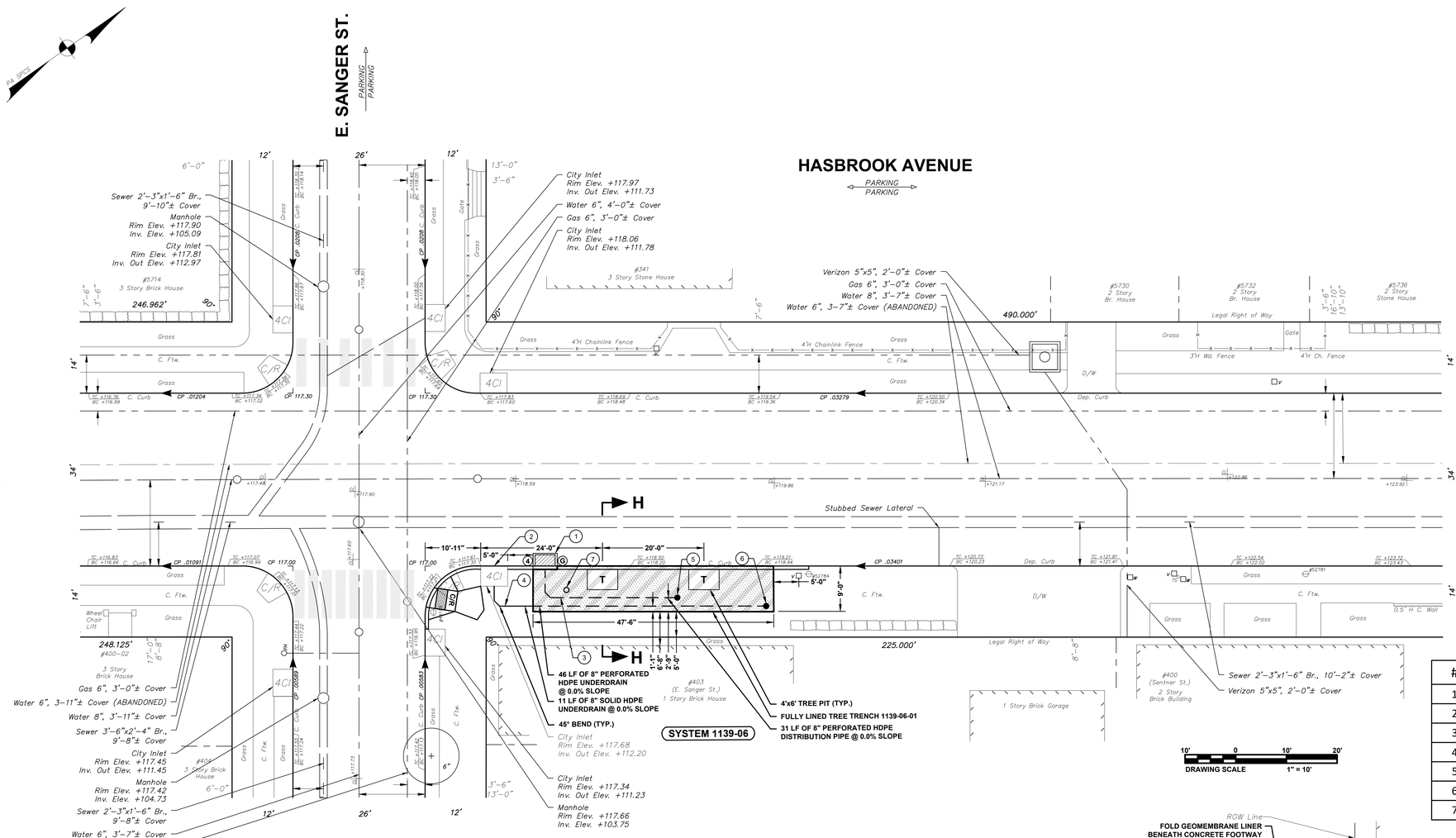
- (6) DENOTES 6' INLET



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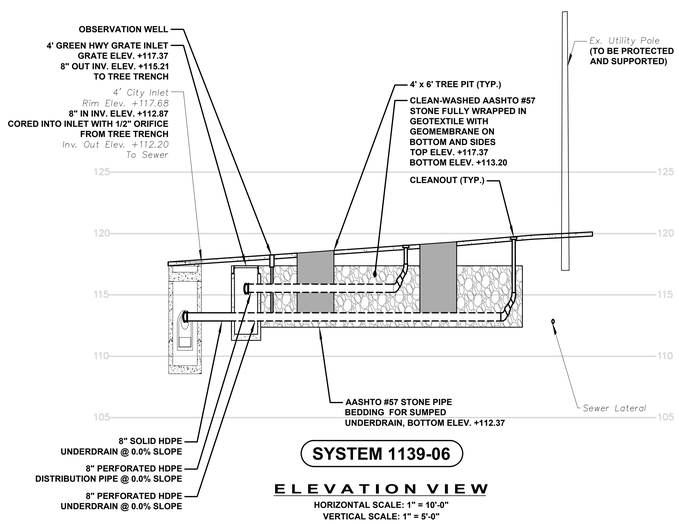
DRAWING SCALE 1" = 10'



SYSTEM 1139-06

ELEVATION VIEW

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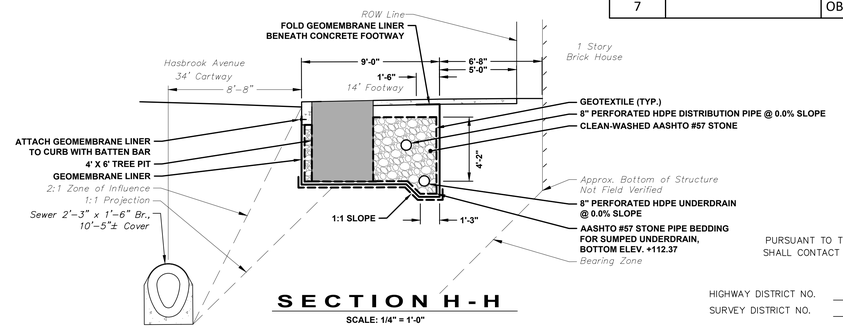
VERTICAL SCALE: 1" = 5'-0"



SECTION H-H

SCALE: 1/4" = 1'-0"

NOTE:

OVERHEAD WIRES ON EAST SIDE OF HASBROOK AVENUE AND NORTH SIDE OF EAST SANGER STREET

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GREEN STORMWATER INFRASTRUCTURE PROJECT

LAWNCREST STREETS SOUTHWEST GRADING & UTILITY PLAN- SYSTEM 1139-06 HASBROOK AVENUE E. SANGER ST. TO SENTNER ST.

PHILADELPHIA WATER DEPARTMENT

PLAN PREPARED FOR THE CITY OF PHILADELPHIA WATER DEPARTMENT BY:

INSERT COMPANY LOGO AND ADDRESS HERE

APPROVED _____ CONSULTING ENGINEERING FIRM

CITY OF PHILADELPHIA WATER DEPARTMENT

SCALES:

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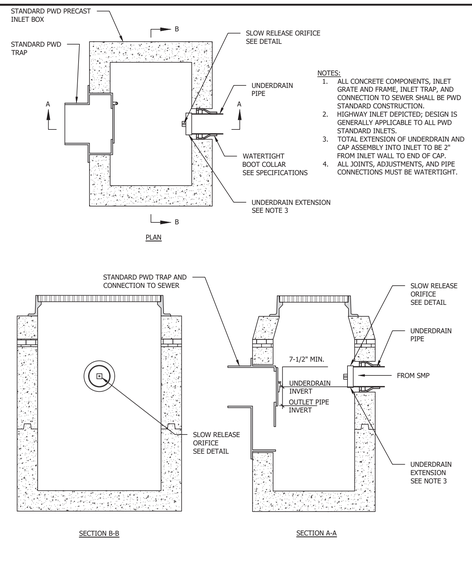
WORK NO. S-50179-G
SHEET NO. G-13 OF 67 SHEETS

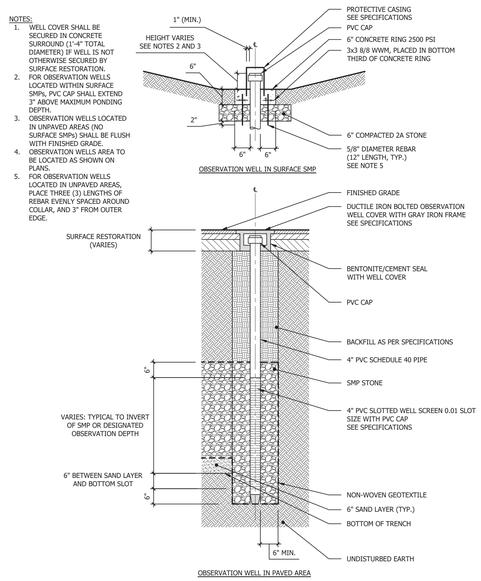
DRAWN BY	CAD	XXX XXXX
PROJECT. ENGR.	PROJECT. ENGR.	XXX XXXX



NOTES:
1. ALL CONCRETE COMPONENTS, INLET GRATE AND FRAME, INLET TRAP, AND CONNECTION TO SEWER SHALL BE PWD STANDARD CONSTRUCTION.
2. HIGHWAY INLET DEPICTED; DESIGN IS GENERALLY APPLICABLE TO ALL PWD STANDARD INLETS.
3. TOTAL EXTENSION OF UNDERDRAIN AND CAP ASSEMBLY INTO INLET TO BE 2' FROM INLET WALL TO END OF CAP.
4. ALL JOINTS, ADJUSTMENTS, AND PIPE CONNECTIONS MUST BE WATERTIGHT.

STANDARD INLET WITH UNDERDRAIN CONNECTION

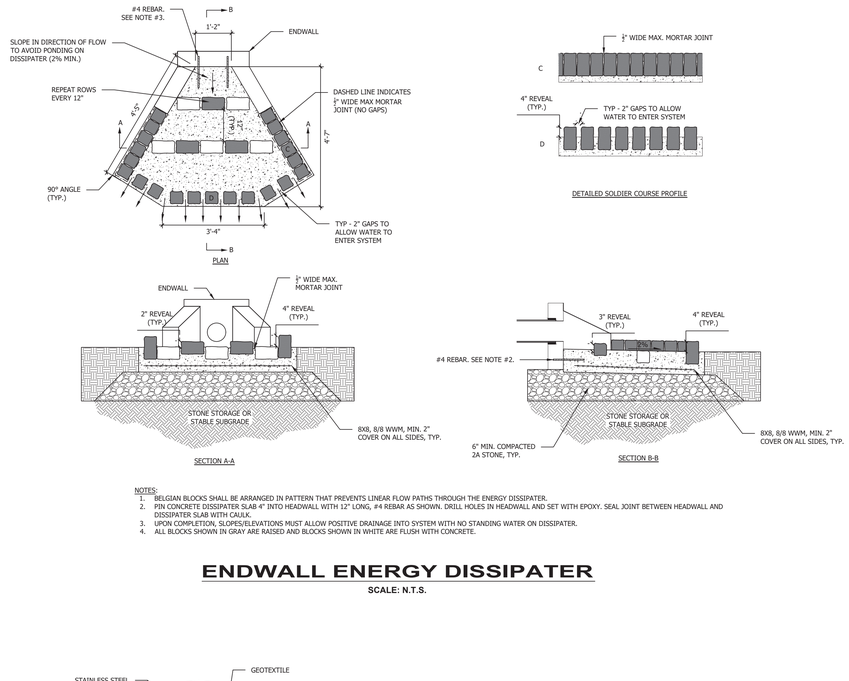
SCALE: N.T.S.



NOTES:
1. WELL COVER SHALL BE SECURED IN CONCRETE SURROUND (1'-4" TOTAL DIAMETER) IF WELL IS NOT OTHERWISE SECURED BY SURFACE RESTORATION.
2. FOR OBSERVATION WELLS LOCATED WITHIN SURFACE SMPs, PVC CAP SHALL EXTEND 3" ABOVE MAXIMUM PONDING DEPTH.
3. OBSERVATION WELLS LOCATED IN UNPAVED AREAS (NO SURFACE SMPs) SHALL BE FLUSH WITH FINISHED GRADE.
4. OBSERVATION WELLS AREA TO BE LOCATED AS SHOWN ON PLANS.
5. FOR OBSERVATION WELLS LOCATED IN UNPAVED AREAS, PLACE THREE (3) LENGTHS OF REBAR EVENLY SPACED AROUND COLLAR, AND 3" FROM OUTER EDGE.

OBSERVATION WELL IN INFILTRATION TRENCH

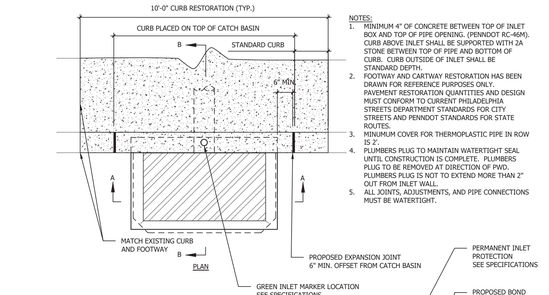
SCALE: N.T.S.



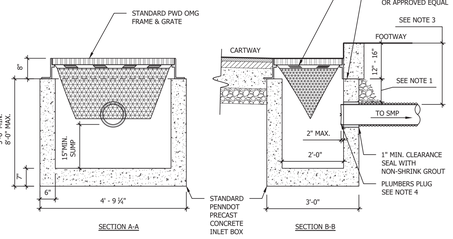
NOTES:
1. BELGIAN BLOCKS SHALL BE ARRANGED IN PATTERN THAT PREVENTS LINEAR FLOW PATHS THROUGH THE ENERGY DISSIPATER.
2. PIN CONCRETE DISSIPATER SLAB 4" INTO HEADWALL WITH 12" LONG, #4 REBAR AS SHOWN. DRILL HOLES IN HEADWALL AND SET WITH EPOXY. SEAL JOINT BETWEEN HEADWALL AND DISSIPATER SLAB WITH CAULK.
3. UPON COMPLETION, SLOPES/ELEVATIONS MUST ALLOW POSITIVE DRAINAGE INTO SYSTEM WITH NO STANDING WATER ON DISSIPATER.
4. ALL BLOCKS SHOWN IN GRAY ARE RAISED AND BLOCKS SHOWN IN WHITE ARE FLUSH WITH CONCRETE.

ENDWALL ENERGY DISSIPATER

SCALE: N.T.S.

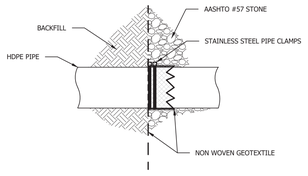


NOTES:
1. MINIMUM 4" OF CONCRETE BETWEEN TOP OF INLET BOX AND TOP OF PIPE OPENING. (PENNDOT RC-46M). CURB ABOVE INLET SHALL BE SUPPORTED WITH 2A STONE BETWEEN TOP OF PIPE AND BOTTOM OF CURB. CURB OUTSIDE OF INLET SHALL BE STANDARD DEPTH.
2. FOOTWAY AND CARTWAY RESTORATION HAS BEEN DRAWN FOR REFERENCE PURPOSES ONLY. PAVEMENT RESTORATION QUANTITIES AND DESIGN MUST CONFORM TO CURRENT PHILADELPHIA STREETS DEPARTMENT STANDARDS FOR CITY STREETS AND PENNDOT STANDARDS FOR STATE ROUTES.
3. MINIMUM COVER FOR THERMOPLASTIC PIPE IN ROW IS 2'.
4. PLUMBERS PLUG TO MAINTAIN WATERTIGHT SEAL UNTIL CONSTRUCTION IS COMPLETE. PLUMBERS PLUG TO BE REMOVED AT DIRECTION OF PWD. PLUMBERS PLUG IS NOT TO EXTEND MORE THAN 2" OUT FROM INLET WALL.
5. ALL JOINTS, ADJUSTMENTS, AND PIPE CONNECTIONS MUST BE WATERTIGHT.



GREEN HIGHWAY GRATE INLET

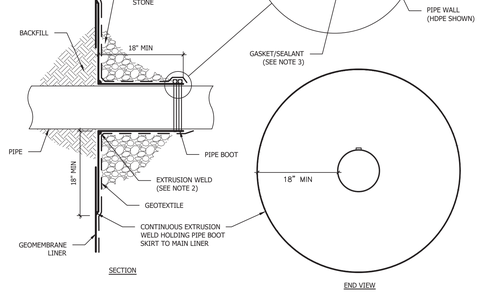
SCALE: N.T.S.



NOTES:
1. THIS DETAIL APPLIES TO ALL PIPE PENETRATIONS THROUGH GEOTEXTILE LINER, EXCEPT WHERE ANTI-SEEP COLLAR IS PLACED AT THE PENETRATION. SEE PLANS FOR LOCATION AND PIPE SIZE/MATERIAL.
2. CUT ASTERISK SHAPE IN GEOTEXTILE FOR PIPE OPENING AND PLACE STEEL CLAMP OVER UNCUT PORTION OF GEOTEXTILE SO THERE ARE NO GAPS BETWEEN CLEAN-WASHED STONE AND BACKFILL. SOME BUNCHING OF GEOTEXTILE AROUND PIPE IS ACCEPTABLE.
3. CLAMPS MAY BE PLACED ON EITHER THE AASHTO #57 STONE OR BACKFILL SIDE OF THE GEOTEXTILE.

GEOTEXTILE PIPE PENETRATION

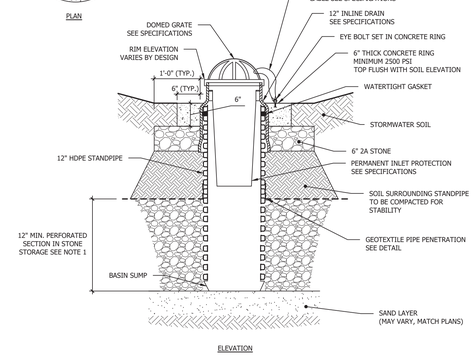
SCALE: N.T.S.



NOTES:
1. THIS DETAIL APPLIES TO ALL PIPE PENETRATIONS THROUGH GEOMEMBRANE LINER. SEE PLANS FOR LOCATION, PIPE SIZE, PIPE MATERIAL, AND PIPE ANGLE.
2. WELD CONNECTING PIPE BOOT TO SKIRT NOT NECESSARY IF PREFABRICATED.
3. FOR CORRUGATED PIPE, INSERT PIPE ADAPTERS TO CREATE SMOOTH SURFACE FOR CLAMPS.

GEOMEMBRANE PIPE PENETRATION

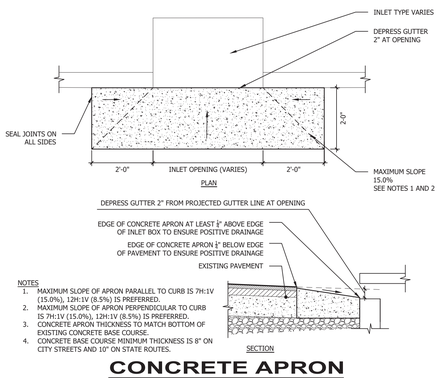
SCALE: N.T.S.



NOTES:
1. STANDPIPE SHALL INCLUDE PERFORATED SECTION OPEN TO STONE TRENCH. PERFORATIONS SHALL BE 0.5" DIAMETER, 2" O/C DRILLED VERTICALLY AND RADIALLY, AND OFFSET 1" EVERY OTHER ROW.
2. STONE/SOIL SHALL BE COMPACTED TO SECURE STANDPIPE IN PLACE AND PREVENT MOVEMENT.
3. ALL JOINTS MUST BE WATERTIGHT.

DOMED RISER STANDPIPE

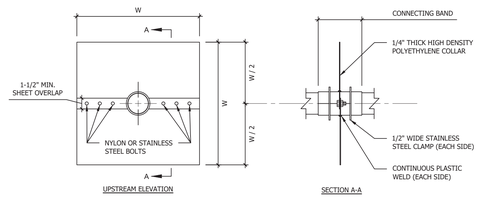
SCALE: N.T.S.



NOTES
1. MAXIMUM SLOPE OF APRON PARALLEL TO CURB IS 7H:1V (15.0%), 12H:1V (8.5%) IS PREFERRED.
2. MAXIMUM SLOPE OF APRON PERPENDICULAR TO CURB IS 7H:1V (15.0%), 12H:1V (8.5%) IS PREFERRED.
3. CONCRETE APRON THICKNESS TO MATCH BOTTOM OF EXISTING CONCRETE BASE COURSE.
4. CONCRETE BASE COURSE MINIMUM THICKNESS IS 8" ON CITY STREETS AND 10" ON STATE ROUTES.

CONCRETE APRON

SCALE: N.T.S.



NOTES:
1. CONNECTING BAND SHALL BE SEALED AT BOTH ENDS WITH CAULK OR MASTIC.
2. COLLAR MATERIAL SHALL BE RIGID POLYETHYLENE SHEET.
3. STAINLESS STEEL SHALL BE GRADE 304 OR BETTER.
4. DIMENSION "W" SHALL BE 3 TIMES THE DIAMETER OF THE INTERSECTING PIPE.
5. ONE COLLAR WITH TWO HOLES MAY BE USED WHEN CLOSE PARALLEL PIPES ARE INSTALLED.

ANTI-SEEP COLLAR

SCALE: N.T.S.

DESIGNER NOTES:

1. OTHER SITE DETAILS MUST BE ADDED AS APPLICABLE.

PLAN PREPARED FOR THE CITY OF PHILADELPHIA WATER DEPARTMENT BY:

PHILADELPHIA WATER DEPARTMENT

INSERT COMPANY LOGO AND ADDRESS HERE

EXAMPLE PLAN 2021 - NOT FOR CONSTRUCTION
THIS PLAN WAS DEVELOPED TO DEMONSTRATE DRAWING STANDARDS AND MAY NOT REFLECT CURRENT DESIGN STANDARDS

DRAFT SUBSTANTIALLY COMPLETE
DESIGN SUBMISSION <DATE>

GREEN STORMWATER INFRASTRUCTURE PROJECT

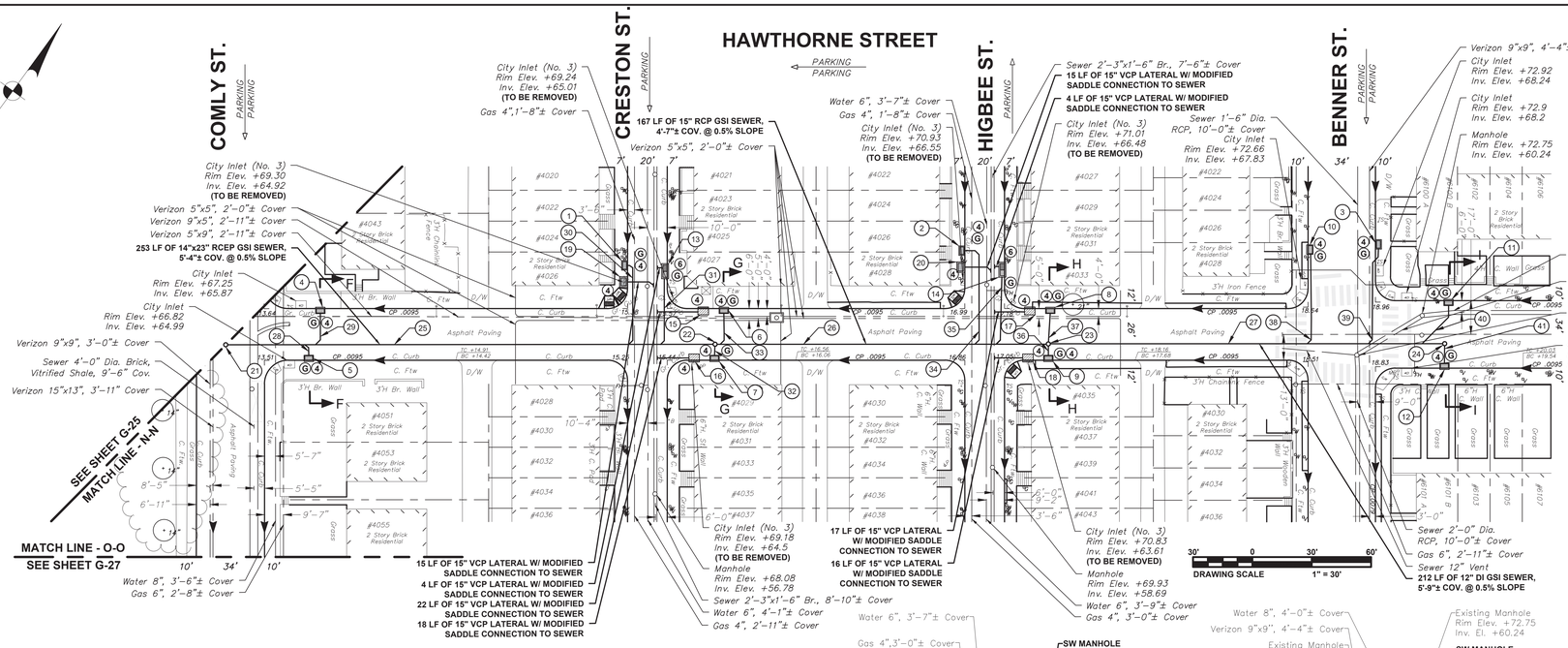
BERKS AND SEDGLEY GREENING CONSTRUCTION DETAILS 1

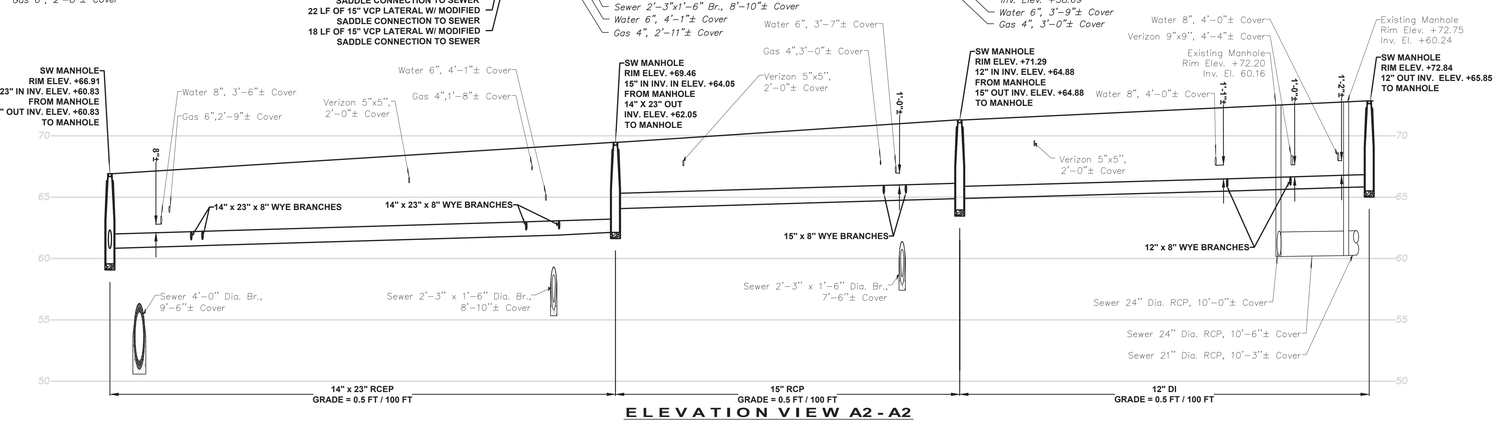
APPROVED _____ CONSULTING ENGINEERING FIRM

CITY OF PHILADELPHIA WATER DEPARTMENT

WORK NO. S-50179-G
SHEET NO. G-19 OF 22 SHEETS

DRAWN BY	CAD	XXX XXXX
PROJECT. ENGR.	PROJECT. ENGR.	XXX XXXX



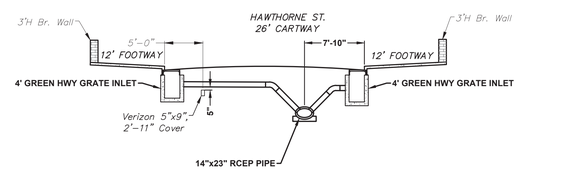


ELEVATION VIEW A2 - A2

HORIZONTAL SCALE: 1" = 30'-0"
VERTICAL SCALE: 1" = 5'-0"

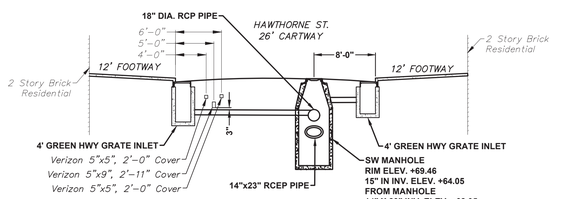
CONTROLLING BENCH MARK

Stone on 5'x5' Range Line at N.E. Corner of Sanger St. & Charles St.
Elev.=+44.51'



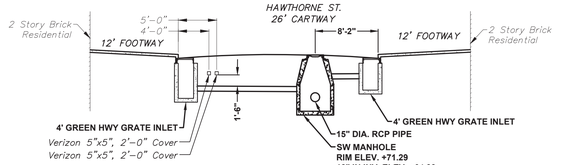
SECTION F-F

SCALE: 1/8" = 1'-0"



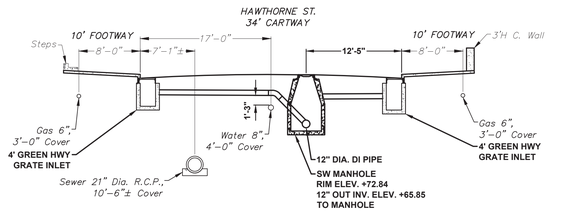
SECTION G-G

SCALE: 1/8" = 1'-0"



SECTION H-H

SCALE: 1/8" = 1'-0"



SECTION I-I

SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. ALL DISTANCES SHOWN ARE IN DISTRICT STANDARD MEASUREMENT. PAYMENT FOR ALL WORK WILL BE BASED UPON THAT STANDARD.
2. THE LOCATIONS AND ELEVATIONS OF THE EXISTING UTILITIES ARE APPROXIMATE. THE ELEVATIONS OF THE EXISTING UTILITIES MUST BE FIELD CHECKED DURING CONSTRUCTION.
3. ALL SIDEWALK AND CURBING TO BE REPLACED IN KIND ALONG FULL LIMITS OF CONSTRUCTION TO NEXT EXISTING JOINT OR AS DIRECTED BY PWD.
4. WELDED PIPE BOOT SEAL MUST BE INSTALLED AT ANY POINT WHERE A PIPE PENETRATES GEOMEMBRANE LINER.
5. SUFFICIENT EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR AS TO PREVENT STANDING WATER OR SEDIMENTATION OF STORMWATER SYSTEMS. 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.
6. 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.
7. EROSION CONTROL MATTING SHALL BE PLACED OVER ALL SOIL SURFACES NOT STABILIZED BY PLANTING.
8. SUPPORT AND PROTECT ALL UTILITIES, UTILITY POLES, OVERHEAD WIRES, TRAFFIC SIGNAGE, TRAFFIC SIGNALS, AND STREET LIGHTING WITHIN THE LIMITS OF WORK.
9. VERTICAL DATUM IS ON CITY OF PHILADELPHIA DATUM.
10. LINE AND GRADE STAKES FOR CURB, PAVING, ETC. WILL BE FURNISHED BY THE 5TH SURVEY DISTRICT OF THE CITY OF PHILADELPHIA. CONTACT INFORMATION: 5TH SURVEY DISTRICT, 6601 RISING SUN AVE., PHILA., PA, 19111, (215) 685-0585.
11. NOTIFY THE 5TH SURVEY DISTRICT A MINIMUM OF TWO (2) WEEKS PRIOR TO THE START OF WORK TO SCHEDULE A TIME FOR CURB STAKE LAYOUT SERVICES.

STRUCTURES				
#	COMPONENT ID	COMPONENT TYPE	GRATE/RIM ELEV.	OUT INV. ELEV.
1		GREEN CITY INLET	+69.27	+66.27
2		GREEN CITY INLET	+71.07	+68.07
3		GREEN CITY INLET	+73.20	+70.20
4		GREEN HWY GRATE INLET	+67.06	+64.56
5		GREEN HWY GRATE INLET	+66.71	+64.21
6		GREEN HWY GRATE INLET	+69.60	+65.60
7		GREEN HWY GRATE INLET	+69.48	+66.98
8		GREEN HWY GRATE INLET	+71.68	67.68
9		GREEN HWY GRATE INLET	+71.22	+68.72
10		GREEN HWY GRATE INLET	+72.90	+70.40
11		GREEN HWY GRATE INLET	+72.76	+70.26
12		GREEN HWY GRATE INLET	+72.83	+70.33
13		GREEN DUAL CATCH BASIN HWY GRATE INLET	+69.12	+66.62 (TO GSI SEWER); +64.12 (TO SEWER)
14		GREEN DUAL CATCH BASIN HWY GRATE INLET	+70.74	+68.24 (TO GSI SEWER); +65.74 (TO SEWER)
15		HWY GRATE INLET	+69.56	+64.56
16		HWY GRATE INLET	+69.18	+64.18
17		HWY GRATE INLET	+70.95	+65.95
18		HWY GRATE INLET	+70.83	+65.83
19		CITY INLET	+69.30	+64.30
20		CITY INLET	+71.30	+66.30
21		SW MANHOLE	+66.91	SEE PLAN FOR ELEVATIONS
22		SW MANHOLE	+69.46	SEE PLAN FOR ELEVATIONS
23		SW MANHOLE	+71.29	SEE PLAN FOR ELEVATIONS
24		SW MANHOLE	+72.84	SEE PLAN FOR ELEVATIONS

PIPES				
#	COMPONENT ID	COMPONENT TYPE	PIPE SIZE/DIA. (IN)	PIPE LENGTH (FT)
25		GSI SEWER	14" x 23"	246
26		GSI SEWER	15"	167
27		GSI SEWER	12"	199
28		DISTRIBUTION PIPE	8"	7
29		DISTRIBUTION PIPE	8"	17
30		DISTRIBUTION PIPE	8"	43
31		DISTRIBUTION PIPE	8"	34
32		DISTRIBUTION PIPE	8"	5
33		DISTRIBUTION PIPE	8"	17
34		DISTRIBUTION PIPE	8"	55
35		DISTRIBUTION PIPE	8"	38
36		DISTRIBUTION PIPE	8"	5
37		DISTRIBUTION PIPE	8"	15
38		DISTRIBUTION PIPE	8"	47
39		DISTRIBUTION PIPE	8"	50
40		DISTRIBUTION PIPE	8"	25
41		DISTRIBUTION PIPE	8"	9

NOTE: PIPES CONNECTING GREEN INLETS TO GSI SEWER MAIN ARE DUCTILE IRON PIPE UNLESS INDICATED OTHERWISE.

EXAMPLE PLAN 2021 - NOT FOR CONSTRUCTION
THIS PLAN WAS DEVELOPED TO DEMONSTRATE DRAWING STANDARDS AND MAY NOT REFLECT CURRENT DESIGN STANDARDS

DRAFT SUBSTANTIALLY COMPLETE
DESIGN SUBMISSION <DATE>

PHILADELPHIA WATER DEPARTMENT

PLAN PREPARED FOR THE CITY OF PHILADELPHIA WATER DEPARTMENT BY:

INSERT COMPANY LOGO AND ADDRESS HERE

NOTICE:

PURSUANT TO THE REQUIREMENTS OF PENNSYLVANIA ACT 50 (2017), THE CONTRACTOR SHALL CONTACT THE PENNSYLVANIA ONE CALL SYSTEM AT 1-800-242-1776, AT LEAST 3 DAYS PRIOR TO EXCAVATION

HIGHWAY DISTRICT NO. 05
SURVEY DISTRICT NO. 05
WARD NUMBER 82
DRAINAGE SHT. NO. 72
OUTFALL NO. F21
PA ONE CALL 20160200723 20160200724 20160693294 20160693295 20160693411

GREEN STORMWATER INFRASTRUCTURE PROJECT

WISSINOMING PARK
GSI SEWER TO SMP 1267-01-01
HAWTHORNE STREET
COMLY ST. TO BENNER ST.

APPROVED _____ CONSULTING ENGINEERING FIRM

CITY OF PHILADELPHIA WATER DEPARTMENT

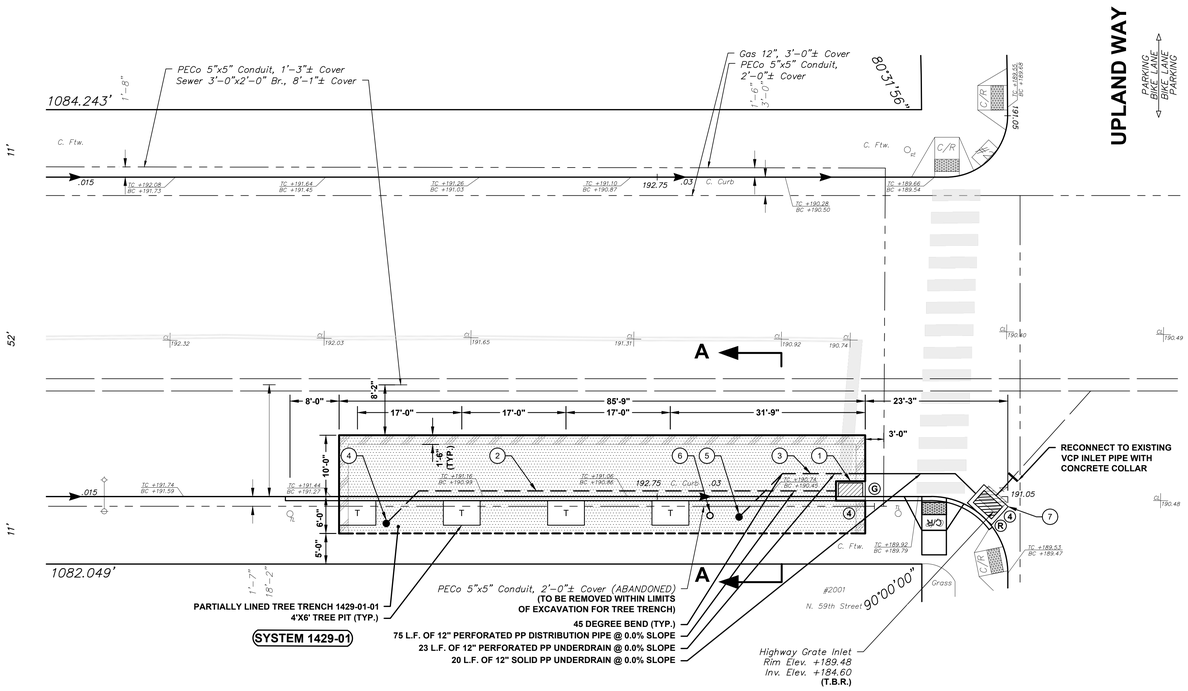
SCALES:
PLAN 1"=30'
PROFILE HORIZ. 1"=30'
VERT. 1"=5'
SECTION 1/8"=1'-0"

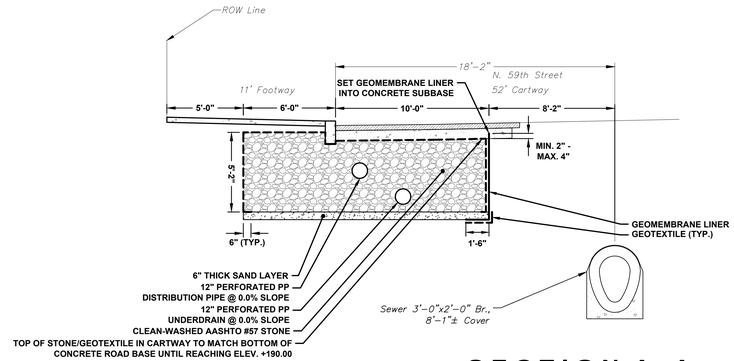
WORK NO. S-50179-G
SHEET NO. G-26 OF XX SHEETS

DRAWN BY	CAD	XXX XXXX
PROJECT. ENGR.		XXX XXXX

CONTROLLING BENCH MARK

MAG NAIL IN U.P. #J3144 LOCATED ON
THE N.E. CORNER OF W. BERKS ST. AND UPLAND WAY
ELEV. = 191.00



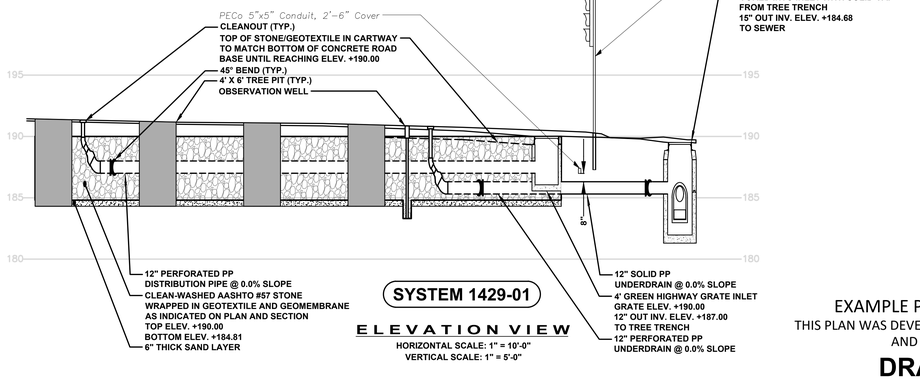


SECTION A-A
SCALE: 1/4" = 1'-0"

#	COMPONENT ID	COMPONENT TYPE	PIPE LENGTH (FT)
1	G14290101-14-05	GREEN HWY GRATE INLET	N/A
2	G14290101-20-05	DISTRIBUTION PIPE	75
3	G14290101-21-05	UNDERDRAIN	43
4	G14290101-50-05	CLEANOUT	N/A
5	G14290101-50-10	CLEANOUT	N/A
6	G14290101-51-05	OBSERVATION WELL	N/A
7	G14290101-60-05	HWY GRATE INLET	N/A

PROPOSED LEGEND

- SOLID PIPE
- PERFORATED PIPE
- ANTI-SEEP COLLAR
- STORMWATER TRENCH W/ GEOTEXTILE ON SIDES
- STORMWATER TRENCH W/ GEOMEMBRANE ON SIDES
- GEOMEMBRANE LINER
- T — TREE PIT
- CLEANOUT
- OBSERVATION WELL
- GREEN HIGHWAY GRATE INLET
- HIGHWAY GRATE INLET
- (G) DENOTES PROPOSED GREEN INLET
- (R) DENOTES PROPOSED INLET TO BE RECONNECTED
- (4) DENOTES 4' INLET
- (T.B.R.) TO BE REMOVED



SYSTEM 1429-01

ELEVATION VIEW
HORIZONTAL SCALE: 1" = 10'-0"
VERTICAL SCALE: 1" = 5'-0"

NOTE:

OVERHEAD WIRES ON EAST SIDE OF N. 59TH STREET.

GENERAL NOTES:

1. ALL DISTANCES SHOWN ARE IN DISTRICT STANDARD MEASUREMENT. PAYMENT FOR ALL WORK WILL BE BASED UPON THAT STANDARD.
2. THE LOCATIONS AND ELEVATIONS OF THE EXISTING UTILITIES ARE APPROXIMATE. THE ELEVATIONS OF THE EXISTING UTILITIES MUST BE FIELD CHECKED DURING CONSTRUCTION.
3. ALL SIDEWALK AND CURBING TO BE REPLACED IN KIND ALONG FULL LIMITS OF CONSTRUCTION TO NEXT EXISTING JOINT OR AS DIRECTED BY PWD.
4. WELDED PIPE BOOT SEAL MUST BE INSTALLED AT ANY POINT WHERE A PIPE PENETRATES GEOMEMBRANE LINER.
5. SUFFICIENT EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR AS TO PREVENT STANDING WATER OR SEDIMENTATION OF STORMWATER SYSTEMS. 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.
6. 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.
7. EROSION CONTROL MATTING SHALL BE PLACED OVER ALL SOIL SURFACES NOT STABILIZED BY PLANTING.
8. SUPPORT AND PROTECT ALL UTILITIES, UTILITY POLES, OVERHEAD WIRES, TRAFFIC SIGNAGE, TRAFFIC SIGNALS, AND STREET LIGHTING WITHIN THE LIMITS OF WORK.
9. VERTICAL DATUM IS ON CITY OF PHILADELPHIA DATUM.
10. LINE AND GRADE STAKES FOR CURB, PAVING, ETC. WILL BE FURNISHED BY THE 7TH SURVEY DISTRICT OF THE CITY OF PHILADELPHIA. CONTACT INFORMATION: 7TH SURVEY DISTRICT, 6448 WOODLAND AVE, PHILA., PA, 19142, (215) 685-3052.
11. NOTIFY THE 7TH SURVEY DISTRICT A MINIMUM OF TWO (2) WEEKS PRIOR TO THE START OF WORK TO SCHEDULE A TIME FOR CURB STAKE LAYOUT SERVICES.

PHILADELPHIA WATER

PLAN PREPARED FOR
THE CITY OF PHILADELPHIA
WATER DEPARTMENT BY:

INSERT COMPANY LOGO
AND ADDRESS HERE

EXAMPLE PLAN 2021 - NOT FOR CONSTRUCTION
THIS PLAN WAS DEVELOPED TO DEMONSTRATE DRAWING STANDARDS
AND MAY NOT REFLECT CURRENT DESIGN STANDARDS

DRAFT PRE-FINAL DESIGN SUBMISSION <DATE>

NOTICE:

PURSUANT TO THE REQUIREMENTS OF PENNSYLVANIA ACT 50 (2017), THE CONTRACTOR SHALL CONTACT THE PENNSYLVANIA ONE CALL SYSTEM AT 1-800-242-1776, AT LEAST 3 DAYS PRIOR TO EXCAVATION

HIGHWAY DISTRICT NO. 01
SURVEY DISTRICT NO. 07
WARD NUMBER 34/52
DRAINAGE SHT. NO. 33
OUTFALL NO. S-27/S-50
PA ONE CALL 20181993459 20181993460

GREEN STORMWATER INFRASTRUCTURE PROJECT

UPLAND WAY GREENING
GRADING & UTILITY PLAN – SYSTEM 1429-01
N. 59TH STREET
LANCASTER AVE. TO UPLAND WAY

APPROVED _____
CONSULTING ENGINEERING FIRM

CITY OF PHILADELPHIA
WATER DEPARTMENT

SCALES:
PLAN 1"=10'
PROFILE HORIZ. 1"=10'
VERT. 1"=5'
SECTION 1/4"=1'

WORK NO. S-50258-G
SHEET NO. G-2 OF 10 SHEETS

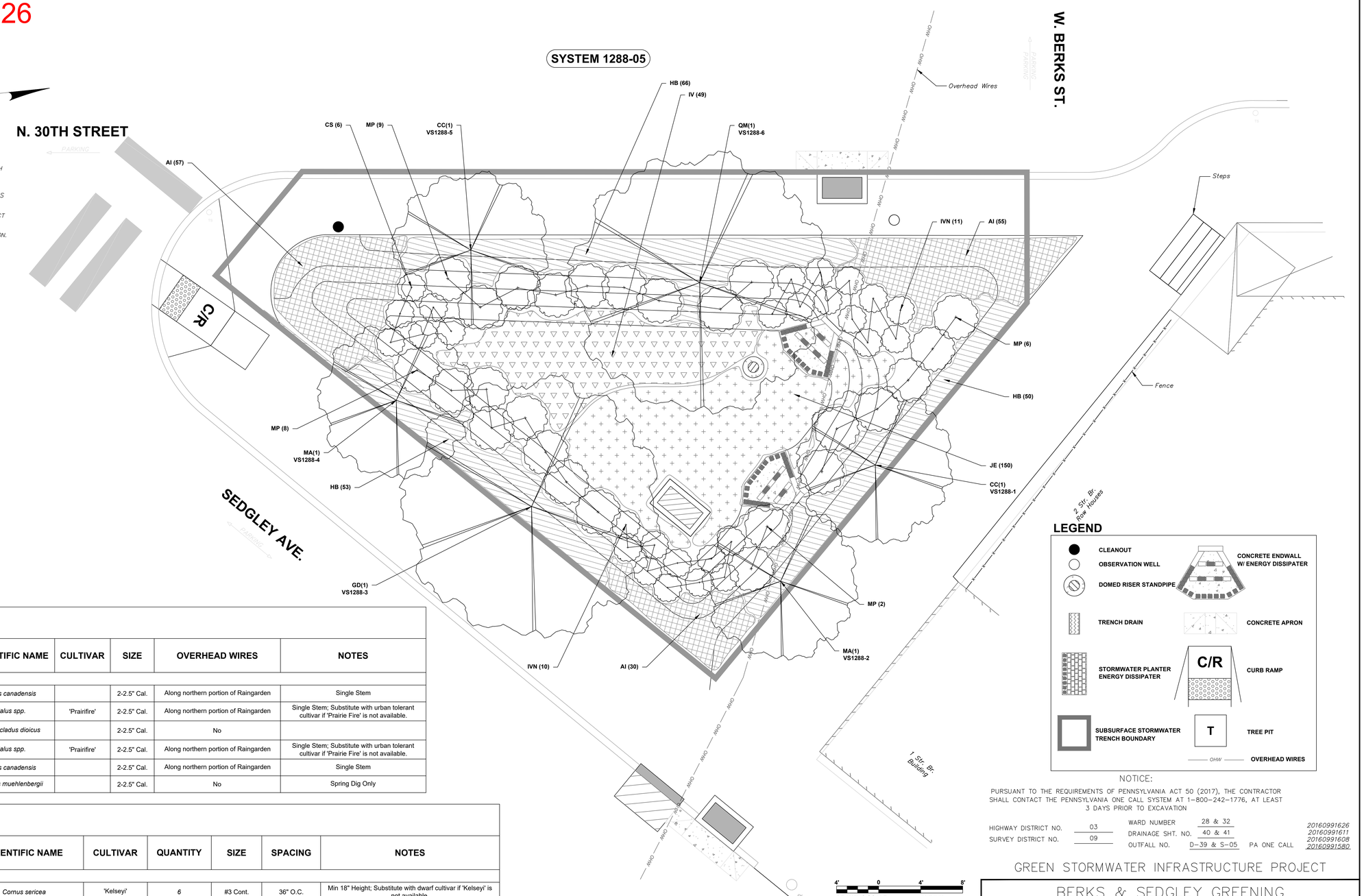
DRAWN BY	CAD	XXX XXXX
PROJECT. ENGR.	PROJECT. ENGR.	XXX XXXX
SUPERVISOR		DATE

Revised June 2026

PA SPCS

LANDSCAPE NOTES:

1. ADJUST LOCATIONS OF PLANTS AS NECESSARY TO AVOID DAMAGE TO EXISTING UNDERGROUND UTILITIES AND EXISTING ABOVE GROUND ELEMENTS. ADJUSTMENTS SHALL BE COMPLETED AT CONTRACTOR'S EXPENSE AND SHALL BE COORDINATED WITH THE PHILADELPHIA WATER DEPARTMENT (PWD).
2. LANDSCAPE SUBCONTRACTOR SHALL COORDINATE WORK WITH THE GENERAL CONTRACTOR AND ALL OTHER TRADES.
3. LANDSCAPE INSTALLATION SHALL BE COORDINATED WITH OTHER WORK AT THIS LOCATION.
4. THE CONTRACTOR SHALL PAY FOR AND SUBMIT RESULTS OF ALL TESTING OF SOILS, AMENDMENTS, ETC. ASSOCIATED WITH THE WORK IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS PRIOR TO THE COMMENCEMENT OF PLANTING.
5. PLANT SIZES IN THE PLANT SCHEDULE ARE TO BE CONSIDERED MINIMUM SIZES.
6. THE PLANT SCHEDULE IDENTIFIES PLANT SPECIES AND QUANTITIES FOR EACH LOCATION. APPROXIMATE SPACING IS AS SHOWN ON THE PLANTING PLANS.
7. IF REQUESTED BY PWD, THE CONTRACTOR SHALL ENSURE PLANTS ARE TAGGED FOR REVIEW AND APPROVAL BY PWD PRIOR TO ORDERING. APPROVAL OF PLANTS AT OFF-SITE LOCATIONS DOES NOT IMPLY FINAL APPROVAL OF PLANTS AT TIME OF DELIVERY OR AT THE TIME OF INSTALLATION.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING WATER AND HAND WATERING OF PLANTS AFTER INSTALLATION AND UP TO FINAL COMPLETION OF THE PROJECT, AND FOR THE MAINTENANCE PERIOD (SEE SPECIFICATIONS).
9. RESEED ALL DISTURBED AREAS.



SYSTEM 1288-05 TREE SCHEDULE

TREE COMPONENT ID	KEY	COMMON NAME	SCIENTIFIC NAME	CULTIVAR	SIZE	OVERHEAD WIRES	NOTES
VS1288-1	CC	Eastern Redbud	*Cercis canadensis*		2-2.5" Cal.	Along northern portion of Raingarden	Single Stem
VS1288-2	MA	Crabapple	*Malus spp.*	'Prairifire'	2-2.5" Cal.	Along northern portion of Raingarden	Single Stem; Substitute with urban tolerant cultivar if 'Prairie Fire' is not available.
VS1288-3	GD	Kentucky Coffeetree	*Gymnocladus dioicus*		2-2.5" Cal.	No	
VS1288-4	MA	Crabapple	*Malus spp.*	'Prairifire'	2-2.5" Cal.	Along northern portion of Raingarden	Single Stem; Substitute with urban tolerant cultivar if 'Prairie Fire' is not available.
VS1288-5	CC	Eastern Redbud	*Cercis canadensis*		2-2.5" Cal.	Along northern portion of Raingarden	Single Stem
VS1288-6	QM	Chinkapin Oak	*Quercus muehlenbergii*		2-2.5" Cal.	No	Spring Dig Only

SYSTEM 1288-05 PLANT SCHEDULE

	KEY	COMMON NAME	SCIENTIFIC NAME	CULTIVAR	QUANTITY	SIZE	SPACING	NOTES
	SHRUBS							
	CS	Red Twig Dogwood	*Cornus sericea*	'Kelseyi'	*6*	#3 Cont.	36" O.C.	Min 18" Height; Substitute with dwarf cultivar if 'Kelseyi' is not available.
	MP	Bayberry	*Myrica pensylvanica*		*25*	#3 Cont.	36" O.C.	Min 18" Height
	IVN	Winterberry	*Ilex verticillata*	'Nana' RED SPRITE	*21*	#3 Cont.	36" O.C.	Substitute 1 male pollinator per Approx. 10 female plants, such as Ilex verticillata 'Jim Dandy'; Substitute with dwarf cultivar if 'RED SPRITE' is not available.
HATCH PATTERN	**HERBACEOUS**							
	HB	Daylily	*Hemerocallis*	'Bella Lugosi'	*169*	#1 Cont.	18" O.C.	Substitute with yellow cultivar if 'Bella Lugosi' is not available.
	IV	Blue Flag Iris	*Iris versicolor*		*49*	#1 Cont.	18" O.C.	
	AI	Bluestar	*Amsonia*	'Blue Ice'	*142*	#1 Cont.	18" O.C.	Substitute with dwarf cultivar if 'Blue Ice' is not available.
	GRASSES							
	JE	Common Rush	*Juncus effusus*		150	#1 Cont.	18" O.C.	

LEGEND

- CLEANOUT
- OBSERVATION WELL
- DOMED RISER STANDPIPE
- TRENCH DRAIN
- STORMWATER PLANTER ENERGY DISSIPATER
- SUBSURFACE STORMWATER TRENCH BOUNDARY
- CONCRETE ENDWALL W/ ENERGY DISSIPATER
- CONCRETE APRON
- C/R CURB RAMP
- T TREE PIT
- OHW OVERHEAD WIRES

NOTICE:

PURSUANT TO THE REQUIREMENTS OF PENNSYLVANIA ACT 50 (2017), THE CONTRACTOR SHALL CONTACT THE PENNSYLVANIA ONE CALL SYSTEM AT 1-800-242-1776, AT LEAST 3 DAYS PRIOR TO EXCAVATION

HIGHWAY DISTRICT NO. 03
SURVEY DISTRICT NO. 09
WARD NUMBER 28 & 32
DRAINAGE SHT. NO. 40 & 41
OUTFALL NO. D-39 & S-05
PA ONE CALL 20160991626, 20160991611, 20160991608, 20160991580

PLAN PREPARED FOR THE CITY OF PHILADELPHIA WATER DEPARTMENT BY:

PHILADELPHIA WATER DEPARTMENT

EXAMPLE PLAN 2021 - NOT FOR CONSTRUCTION
THIS PLAN WAS DEVELOPED TO DEMONSTRATE DRAWING STANDARDS AND MAY NOT REFLECT CURRENT DESIGN STANDARDS

DRAFT SUBSTANTIALLY COMPLETE
DESIGN SUBMISSION <DATE>

INSERT COMPANY LOGO AND ADDRESS HERE

GREEN STORMWATER INFRASTRUCTURE PROJECT

BERKS & SEDGLEY GREENING LANDSCAPE PLAN SYSTEM 1288-05

APPROVED _____ CONSULTING ENGINEERING FIRM

CITY OF PHILADELPHIA WATER DEPARTMENT

SCALES:
PLAN 1/4"=1'

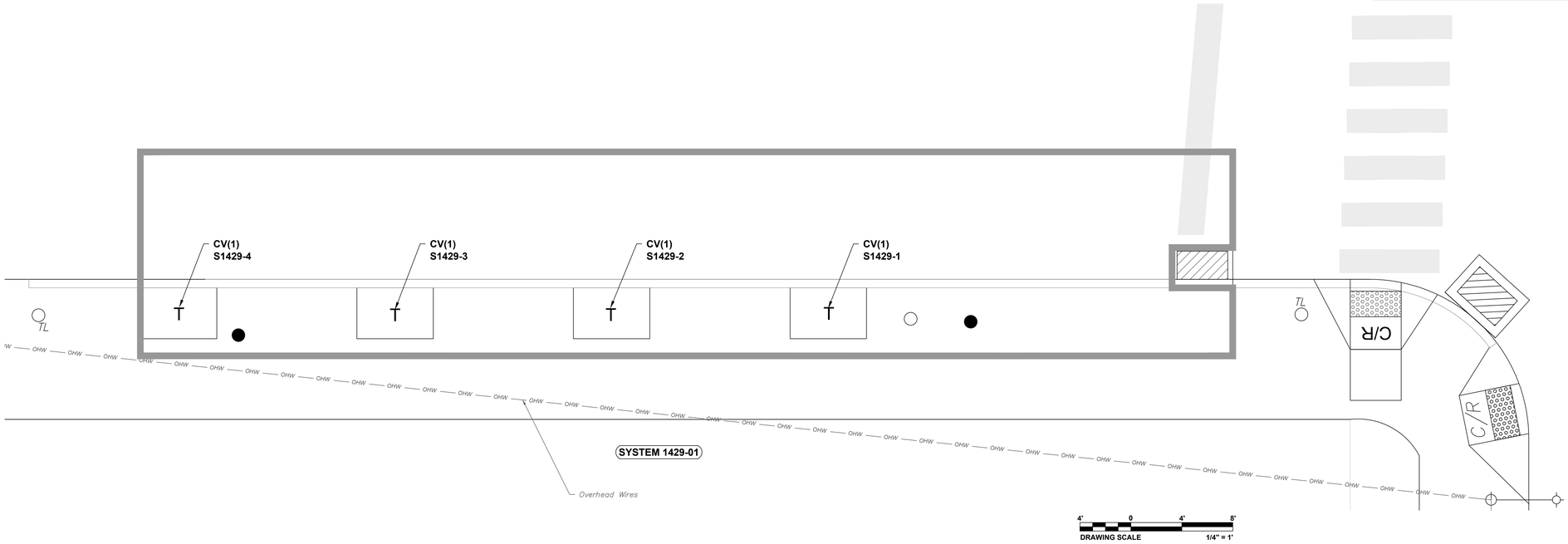
WORK NO. S-50179-G
SHEET NO. L-3 OF X SHEETS

DRAWN BY	CAD	DATE XX/XX/XX
CHECKED BY		DATE XX/XX/XX
SUPERVISOR		DATE

Revised June 2026

PROPOSED LEGEND

- SYSTEM BOUNDARY
- OVERHEAD WIRES
- TREE PIT
- CONCRETE APRON
- CURB RAMP
- CLEANOUT
- OBSERVATION WELL
- GREEN HIGHWAY GRATE INLET
- GREEN CITY INLET
- OMG INLET



SYSTEM 1429-01 TREE SCHEDULE

TREE COMPONENT ID	KEY	COMMON NAME	SCIENTIFIC NAME	CULTIVAR	TREE PIT DIMENSIONS	SIZE	OVERHEAD WIRES	NOTES
S1429-1	CV	Green Hawthorn	*Crataegus viridis*	'Winter King'	4' x 6'	2"-2 1/2" B&B	Yes	Substitute with *Amelancher x grandiflora 'Autumn Brilliance'* if planted in the fall. Substitute with urban tolerant cultivar if 'Winter King' is not available.
S-1429-2	CV	Green Hawthorn	*Crataegus viridis*	'Winter King'	4' x 6'	2"-2 1/2" B&B	No	Substitute with *Amelancher x grandiflora 'Autumn Brilliance'* if planted in the fall. Substitute with urban tolerant cultivar if 'Winter King' is not available.
S-1429-3	CV	Green Hawthorn	*Crataegus viridis*	'Winter King'	4' x 6'	2"-2 1/2" B&B	No	Substitute with *Amelancher x grandiflora 'Autumn Brilliance'* if planted in the fall. Substitute with urban tolerant cultivar if 'Winter King' is not available.
S-1429-4	CV	Green Hawthorn	*Crataegus viridis*	'Winter King'	4' x 6'	2"-2 1/2" B&B	No	Substitute with *Amelancher x grandiflora 'Autumn Brilliance'* if planted in the fall. Substitute with urban tolerant cultivar if 'Winter King' is not available.

GENERAL NOTES:

1. ADJUST LOCATIONS OF PLANTS AS NECESSARY TO AVOID DAMAGE TO EXISTING UNDERGROUND UTILITIES AND EXISTING ABOVE GROUND ELEMENTS. ADJUSTMENTS SHALL BE COMPLETED AT CONTRACTOR'S EXPENSE AND SHALL BE COORDINATED WITH THE PHILADELPHIA WATER DEPARTMENT (PWD).
2. LANDSCAPE INSTALLATION SHALL BE COORDINATED WITH OTHER WORK AT THIS LOCATION.
3. ALL PLANTS SHALL BE IN FULL AND STRICT COMPLIANCE WITH THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1–1996 OR LATER EDITION).
4. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR GRADING AND MAY BE REQUIRED TO PROVIDE ADDITIONAL SOIL. TOP OF MULCH ELEVATION SHALL BE NO HIGHER THAN ELEVATION OF TOP OF ENERGY DISSIPATER.
5. PLANT SIZES IN THE PLANT SCHEDULE ARE TO BE CONSIDERED MINIMUM SIZES.
6. THE PLANT SCHEDULE IDENTIFIES PLANT SPECIES AND QUANTITIES FOR EACH LOCATION. APPROXIMATE SPACING IS AS SHOWN ON THE PLANTING PLANS.
7. IF REQUESTED BY PWD, THE CONTRACTOR SHALL ENSURE PLANTS ARE TAGGED FOR REVIEW AND APPROVAL BY PWD PRIOR TO ORDERING. APPROVAL OF PLANTS AT OFF–SITE LOCATIONS DOES NOT IMPLY FINAL APPROVAL OF PLANTS AT TIME OF DELIVERY OR AT THE TIME OF INSTALLATION.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING WATER AND HAND WATERING OF PLANTS AFTER INSTALLATION AND UP TO FINAL COMPLETION OF THE PROJECT, AND FOR THE MAINTENANCE PERIOD (SEE SPECIFICATIONS).
9. RESEED ALL DISTURBED AREAS.

NOTICE:

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HIGHWAY DISTRICT NO. 01
SURVEY DISTRICT NO. 07
WARD NUMBER 34/52
DRAINAGE SHT. NO. 33
OUTFALL NO. S–27/S–50
PA ONE CALL 20181993459 20181993460

GREEN STORMWATER INFRASTRUCTURE PROJECT

UPLAND WAY GREENING
LANDSCAPE PLAN
SYSTEM 1429–01

PHILADELPHIA WATER DEPARTMENT

PLAN PREPARED FOR THE CITY OF PHILADELPHIA WATER DEPARTMENT BY:

INSERT COMPANY LOGO AND ADDRESS HERE

EXAMPLE PLAN 2021 - NOT FOR CONSTRUCTION
THIS PLAN WAS DEVELOPED TO DEMONSTRATE DRAWING STANDARDS AND MAY NOT REFLECT CURRENT DESIGN STANDARDS

DRAFT PRE-FINAL DESIGN SUBMISSION <DATE>

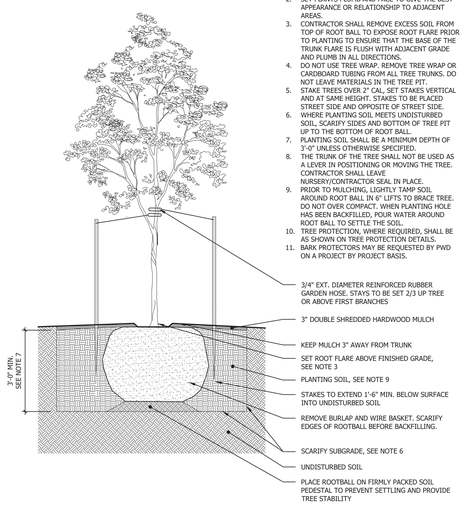
APPROVED _____
PWD PROJECT MANAGER

CITY OF PHILADELPHIA
WATER DEPARTMENT

SCALES:
PLAN 1/4"=1'

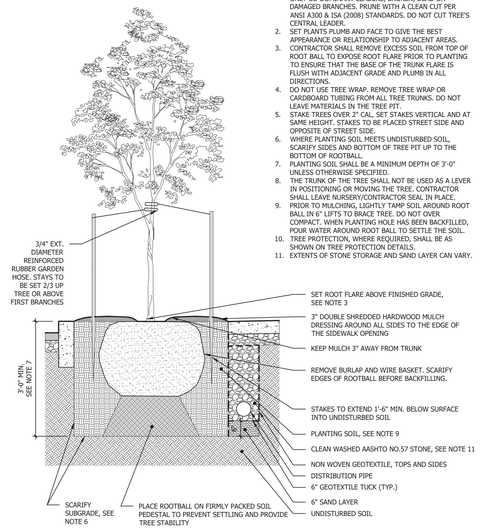
WORK NO. S–50258–G
SHEET NO. L–1 OF 6 SHEETS

DRAWN BY	CAD	PA SOCS
CHKED BY	PROJ MGR	PA SOCS
	SUPERVISOR	DATE



NOTES:
1. DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY TO REMOVE CO-DOMINANT LEADERS, DEAD, AND BROKEN BRANCHES. PRUNE WITH A CLEAN CUT PER ANSI A300 & ISA (2008) STANDARDS. DO NOT CUT TREE'S CENTRAL LEADER.
2. SET PLANTS PLUMB AND FACE TO GIVE THE BEST APPEARANCE OR RELATIONSHIP TO ADJACENT AREAS.
3. CONTRACTOR SHALL REMOVE EXCESS SOIL FROM TOP OF ROOT BALL TO EXPOSE ROOT FLARE PRIOR TO PLANTING TO ENSURE THAT THE BASE OF THE TRUNK FLARE IS FLUSH WITH ADJACENT GRADE AND PLUMB IN ALL DIRECTIONS.
4. DO NOT USE TREE WRAP. REMOVE TREE WRAP OR CARDBOARD TUBING FROM ALL TREE TRUNKS. DO NOT LEAVE MATERIALS IN THE TREE PIT.
5. STAKE TREES OVER 2" CAL, SET STAKES VERTICAL AND AT SAME HEIGHT. STAKES TO BE PLACED STREET SIDE AND OPPOSITE OF STREET SIDE.
6. WHERE PLANTING SOIL MEETS UNDISTURBED SOIL, SCARIFY SIDES AND BOTTOM OF TREE PIT UP TO THE BOTTOM OF ROOT BALL.
7. PLANTING SOIL SHALL BE A MINIMUM DEPTH OF 3'-0" UNLESS OTHERWISE SPECIFIED.
8. THE TRUNK OF THE TREE SHALL NOT BE USED AS A LEVER IN POSITIONING OR MOVING THE TREE. CONTRACTOR SHALL LEAVE NURSERY/CONTRACTOR SEAL IN PLACE.
9. PRIOR TO MULCHING, LIGHTLY TAMP SOIL AROUND ROOT BALL IN 6" LIFTS TO BRACE TREE. DO NOT OVER COMPACT. WHEN PLANTING HOLE HAS BEEN BACKFILLED, POUR WATER AROUND ROOT BALL TO SETTLE THE SOIL.
10. TREE PROTECTION, WHERE REQUIRED, SHALL BE AS SHOWN ON TREE PROTECTION DETAILS.
11. BARK PROTECTORS MAY BE REQUESTED BY PWD ON A PROJECT BY PROJECT BASIS.

TREE PLANTING
SCALE: N.T.S.



NOTES:
1. DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CO-DOMINANT LEADERS, BROKEN, DEAD OR DAMAGED BRANCHES. PRUNE WITH A CLEAN CUT PER ANSI A300 & ISA (2008) STANDARDS. DO NOT CUT TREE'S CENTRAL LEADER.
2. SET PLANTS PLUMB AND FACE TO GIVE THE BEST APPEARANCE OR RELATIONSHIP TO ADJACENT AREAS.
3. CONTRACTOR SHALL REMOVE EXCESS SOIL FROM TOP OF ROOT BALL TO EXPOSE ROOT FLARE PRIOR TO PLANTING TO ENSURE THAT THE BASE OF THE TRUNK FLARE IS FLUSH WITH ADJACENT GRADE AND PLUMB IN ALL DIRECTIONS.
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6. WHERE PLANTING SOIL MEETS UNDISTURBED SOIL, SCARIFY SIDES AND BOTTOM OF TREE PIT UP TO THE BOTTOM OF ROOTBALL.
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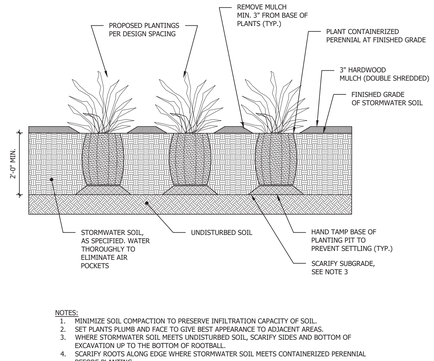
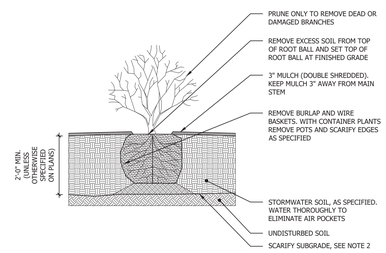
10. TREE PROTECTION, WHERE REQUIRED, SHALL BE AS SHOWN ON TREE PROTECTION DETAILS.
11. EXTENTS OF STONE STORAGE AND SAND LAYER CAN VARY.

TREE PIT IN STORMWATER TRENCH
SCALE: N.T.S.



NOTES:
1. MINIMIZE SOIL COMPACTION TO PRESERVE INFILTRATION CAPACITY OF SOIL.
2. SET PLANTS PLUMB AND FACE TO GIVE BEST APPEARANCE TO ADJACENT AREAS.
3. WHERE STORMWATER SOIL MEETS UNDISTURBED SOIL, SCARIFY SIDES AND BOTTOM OF EXCAVATION UP TO THE BOTTOM OF ROOTBALL.
4. SCARIFY ROOTS ALONG EDGE WHERE STORMWATER SOIL MEETS CONTAINERIZED PERENNIAL BEFORE PLANTING.

CONTAINER PLANTING
SCALE: N.T.S.



NOTES:
1. SET PLANTS PLUMB AND FACE TO GIVE BEST APPEARANCE TO ADJACENT AREAS.
2. WHERE STORMWATER SOIL MEETS UNDISTURBED SOIL, SCARIFY SIDES AND BOTTOM OF EXCAVATION UP TO THE BOTTOM OF THE ROOTBALL.

SHRUB PLANTING
SCALE: N.T.S.

EXAMPLE PLAN 2021 - NOT FOR CONSTRUCTION
THIS PLAN WAS DEVELOPED TO DEMONSTRATE DRAWING STANDARDS AND MAY NOT REFLECT CURRENT DESIGN STANDARDS

DRAFT SUBSTANTIALLY COMPLETE
DESIGN SUBMISSION <DATE>

INSERT COMPANY LOGO AND ADDRESS HERE

PHILADELPHIA WATER DEPARTMENT

PLAN PREPARED FOR THE CITY OF PHILADELPHIA WATER DEPARTMENT BY:

GREEN STORMWATER INFRASTRUCTURE PROJECT

BERKS & SEDGLEY GREENING
LANDSCAPE PLAN
STANDARD DETAILS

APPROVED _____ CONSULTING ENGINEERING FIRM

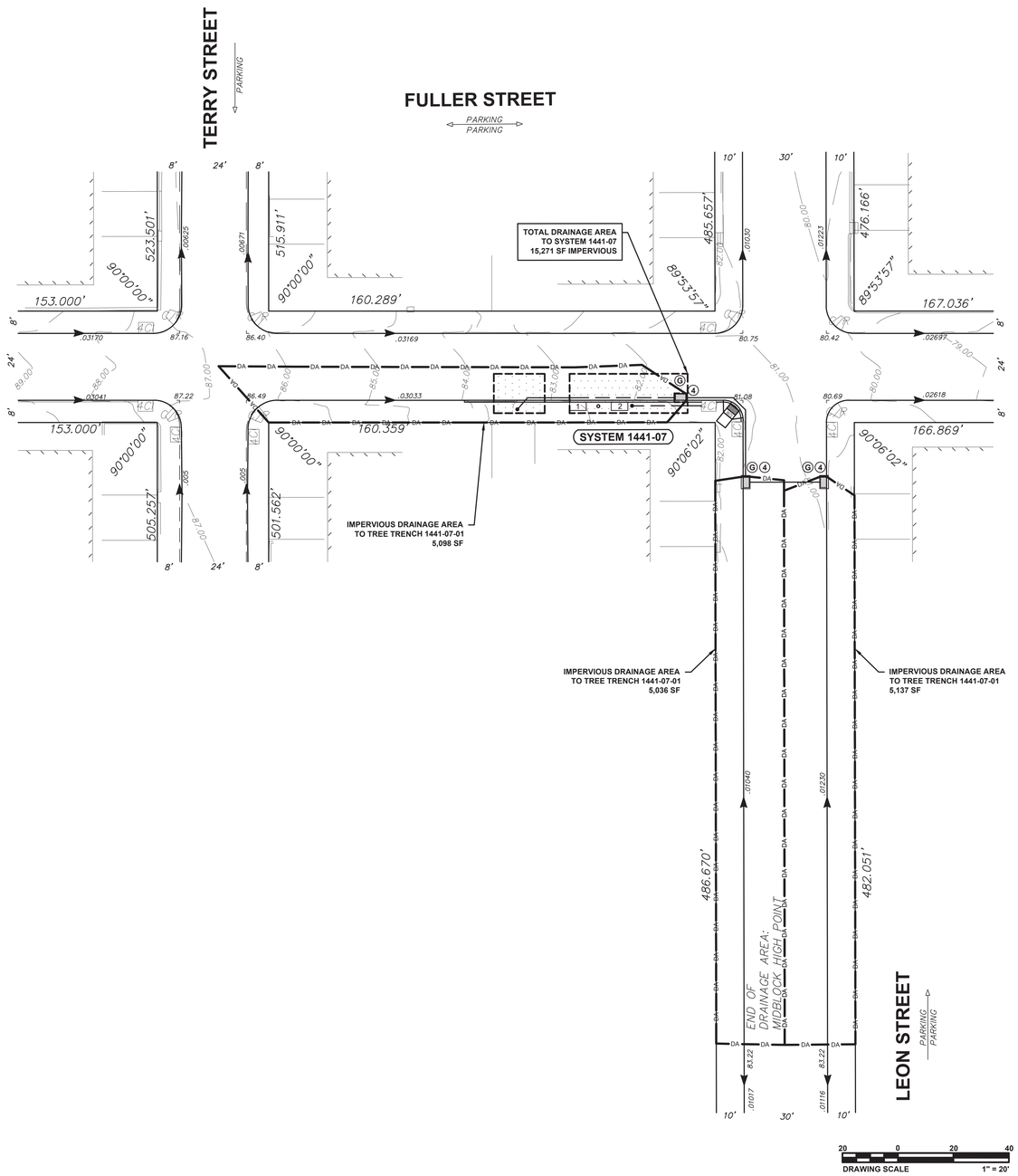
CITY OF PHILADELPHIA WATER DEPARTMENT

WORK NO. S-50179-G
SHEET NO. L-X OF X SHEETS

DRAWN BY	CAD	XXX XXXX
PROJECT. ENGR.		XXX XXXX
SUPERVISOR		DATE

CONTROLLING BENCH MARK

X-XUT ON HYDRANT RUM LOCATED ON THE N.W. CORNER OF LEON & FULLER ELEV. 84.12



PROPOSED LEGEND

PERFORATED PIPE	OMG INLET
SOLID PIPE	HIGHWAY GRATE INLET
DRAINAGE AREA LIMIT	GREEN CITY INLET/ GREEN SHALLOW CITY INLET
STORMWATER TRENCH W/ GEOTEXTILE ON SIDES	GREEN HIGHWAY GRATE INLET
STORMWATER TRENCH W/ GEOMEMBRANE LINER ON SIDES	CONCRETE APRON
GRASS STRIP	TREE PIT
	CLEANOUT
	OBSERVATION WELL

NOTICE:

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HIGHWAY DISTRICT NO. 06
SURVEY DISTRICT NO. 04
WARD NUMBER 64
DRAINAGE SHT. NO. 91
OUTFALL NO. P-02
PA ONE CALL 20182554169, 20182554065, 20182553135

GREEN STORMWATER INFRASTRUCTURE PROJECT

HOLMESBURG STREETS
DRAINAGE AREA MAP
FULLER STREET
TERRY ST. TO LEON ST.

PHILADELPHIA WATER DEPARTMENT

PLAN PREPARED FOR THE CITY OF PHILADELPHIA WATER DEPARTMENT BY:

INSERT COMPANY LOGO AND ADDRESS HERE

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DRAFT SUBSTANTIALLY COMPLETE
DESIGN SUBMISSION <DATE>

APPROVED _____ CONSULTING ENGINEERING FIRM

CITY OF PHILADELPHIA WATER DEPARTMENT

SCALES:

PLAN 1"=20'

WORK NO. S-50267-G
SHEET NO. DA-2 OF 2 SHEETS

DRAWN BY	CAD	XXX XXXX
PROJECT. ENGR.	PROJECT. ENGR.	XXX XXXX
SUPERVISOR		DATE