

CITY OF QUINCY

Grant County, Washington



DESIGN & CONSTRUCTION STANDARDS

September 30, 2023

Adopted November 7, 2023 - Ordinance Number 23-602

Table of Contents

CHAPTER 1 - GENERAL REQUIREMENTS AND DEFINITIONS	3
INTRODUCTION AND GENERAL REQUIREMENTS	3
DEFINITIONS.....	4
GENERAL DEVELOPER RESPONSIBILITY.....	5
CHAPTER 2 – DEVELOPMENT PROCEDURE	7
DEVELOPMENT PROCEDURE REQUIREMENTS.....	7
PLAN REVIEW REQUIREMENTS	8
Preliminary Review	8
Variances.....	8
Construction Plan Approval	9
CONSTRUCTION PLAN FORMAT.....	9
GENERAL CONSTRUCTION REQUIREMENTS	10
Fees, Bonds and Liability Insurance	12
CONSTRUCTION COMPLETION	13
CHAPTER 3 - STREET IMPROVEMENTS.....	14
STREET DESIGN REQUIREMENTS	14
Street Classifications	14
Street Layout & Geometry	14
Street Curb, Gutter & Sidewalk.....	15
Driveways.....	15
Intersection Sight Distance	15
Streetlights.....	15
Monuments.....	15
Signs & Pavement Markings	15
Traffic Studies	16
STREET CONSTRUCTION REQUIREMENTS.....	16
City of Quincy Material Requirements.....	16
CHAPTER 4 – STORM DRAINAGE.....	17
Introduction	17
Drainage Plan Required	17
Design Requirements.....	18

Runoff Control.....	19
Oil Separation Devices	20
Erosion and Sedimentation Control.....	21
Infiltration/Retention Facilities.....	21
City of Quincy Material Requirements.....	22
CHAPTER 5 – SANITARY SEWER	23
Introduction	23
Design Requirements	23
Main Sewer Laterals.....	24
Side Sewers	24
Sewer Force Mains / Lift Stations	25
City of Quincy Material Requirements.....	25
CHAPTER 6 – WATER SYSTEM	26
Introduction	26
Valves	27
Testing.....	27
Water Service Lines.....	27
Fire Hydrants.....	28
Separation	28
Irrigation Systems	29
Pressure Reducing Valve (PRV) Stations	29
City of Quincy Material Requirements.....	31
Quincy Standard Drawing Details Appendix	31

CHAPTER 1 - GENERAL REQUIREMENTS AND DEFINITIONS

INTRODUCTION AND GENERAL REQUIREMENTS

These standards shall apply to all improvements within the public right-of-way and/or public easements, to all improvements required within the proposed public right-of-way of new subdivisions, for all improvements intended for ownership, operations, or maintenance by the City and for all other improvements for which the City Code requires approval from the City Municipal Services Director and/or City Planning Commission and/or the City Council. These standards are intended as guidelines for designers and developers in preparing their plans, studies and/or reports and for the City in reviewing same.

All construction within any right-of-way or municipal easement, or connection to an existing City utility or storm drainage system, or extension of private water and sewer mains and appurtenances on private property shall comply with the current edition of the Washington State Department of Transportation (WSDOT) Standard Specifications for Road, Bridge, and Municipal Construction as revised by these City of Quincy Design & Construction Standards (CQDCS). All construction shall conform to the applicable standards in effect at time of Construction Plan approval, or when the permit is issued if no Construction Plans are required. Construction plan approval shall expire one year after approval date if construction has not started; however, if Construction Plans are approved in conjunction with platting processes, the Construction Plans shall expire concurrently with the preliminary plat. All revisions constrained in the City of Quincy (CQDCS) shall prevail over other specifications unless revised in writing by the City, and except for project-specific Special Provisions that have been approved by the City Engineer.

Alternate design standards may be accepted when it can be shown, to the satisfaction of the City, that such alternate standards will provide a design equal to or superior to that specified. In evaluating the alternate design, the City shall consider appearance, durability, ease of maintenance, public safety, and other appropriate factors, including the latest edition of the Standard Specification for Road, Bridge & Municipal Construction, State of Washington.

Where improvements are not covered by these details nor by the Standard Specifications nor by the standard details, the City will be the sole judge in establishing appropriate standards. Where these “standards” conflict with any existing City ordinances or discrepancies exists within the body of this text, the higher “standards” shall be utilized as determined by the Municipal Services Director, or his/her representative.

The purpose of these Design and Construction Standards is to provide consistent requirements, standards, and specifications for the design and construction of public worlds infrastructure improvements by the City and by private developers.

These Design and Construction Standards will not affect any considerations involving issues under the State Environmental Policy Act (SEPA). The City's responsible official will continue to make all necessary SEPA decisions when individual proposals are submitted.

Plans for major improvements in the public right-of-way or within public easements, or improvements to be "deeded" to the City, shall bear an approval signature from the City.

All plans, specifications, engineering calculations, diagrams, details, and other relevant data shall be designed and prepared by a Civil Engineer licensed by the State of Washington (Consultant). The designer shall submit calculations or other appropriate materials supporting the design of utilities, pavements, storm drainage facilities, structures and other designs when requested by the City.

DEFINITIONS

Definitions: As used herein are as follows:

Consultant:	Means an engineer licensed in the State of Washington, employed by the Developer to design the improvement, and prepare plans and specifications, perform construction staking or similar services.
Construction Documents:	Means the project plans, specifications and special provisions prepared by the Developer's Consultant for the public works improvements and approved by the City.
City:	City of Quincy, Washington, Grant County, a municipal corporation, as represented by its authorized officials, employees or agents, existing under and by virtue of the laws of the State of Washington. Actions designated as taken by the City are the acts of the Council acting through the Mayor.
City Engineer:	Means the appointed City Engineer for the City of Quincy or his/her duly authorized agent or representative.
Contractor:	Means the Developer's contractor or subcontractor or under Contract with the City to do the construction of the public works improvements.
Developer:	The party having an agreement with the City to cause the installation of certain improvements, to become a part of the City's utility and/or roadway system upon completion and acceptance. The term shall also include the Developer's contractor employed to do the work or the Contractor's employees.

Drawings / Plans:	Means drawings, including reproductions thereof, of the work to be done, prepared by an Engineer licensed in the State of Washington.
Maintenance Bond:	Means a bond furnished by the Developer and written by a corporate body qualified to write surety in the State of Washington, guaranteeing that the Developer will repair any defects found in the work within the time period as further identified herein.
Mayor:	Means mayor of the City of Quincy or his/her authorized representative.
Performance Bond:	Means a bond furnished by the Developer and written by a corporate body qualified to write surety in the State of Washington, guaranteeing that the work will be completed in accordance with the plans and specifications.
Municipal Services Director:	Means the appointed official for the City, responsible for managing the Department of Public Works, Building Department, Engineering Department, and the Utilities owned by the City of Quincy.
Specifications:	Means the directions, provisions, and requirements designated by an Engineer licensed in the State of Washington for the performance of the work and for the quantity and quality of materials, as contained or referenced herein.
Work:	The labor or materials or both, superintendent, equipment, transportation, facilities and other appurtenances necessary to complete the Contract.

GENERAL DEVELOPER RESPONSIBILITY

It is the Developer's responsibility to be fully informed regarding the nature, quality, and the extent of the work to be done, and, if in doubt, to secure specific instructions from the City.

The Owner/Developer shall, if other than himself, name and identify the person who shall be designated to act on his behalf on matters relating to the project. The Consultant may, at the Owner/Developer's discretion and direction, be the Agent. The identified person shall be the single point of contact for the duration of the project.

The Owner/Developer shall retain the services of a Consultant, licensed to practice Civil Engineering in the State of Washington, who is qualified to perform the required engineering services design and construction stake/survey, as required, of the proposed public

improvements. If the project includes installation of domestic water infrastructure, the Consultant shall comply with the requirements of WAC 246-290.

If, at any time during the project, the Owner/Developer terminates or reduces the level of the services of the Consultant or the designated Agent as specifically identified and accepted by the City, the Owner/Developer and Consultant/Agent shall immediately notify the City.

The Owner/Developer has the overall responsibility for project management, construction management, contract administration, permit acquisition, compliance, testing, and, if required, right-of-way acquisition. No construction work shall commence prior to a Pre-Construction Conference and plan approval by the City Engineer.

Payment for City Services: The Developer shall be responsible for promptly reimbursing the City for all costs and expenses incurred by the City in the pursuit of project submittal, review, approval, and construction. These costs include, but are not limited to, the utilization of staff and consultants as may be necessitated to adequately review and inspect construction of the project(s). All legal, administrative, and engineering fees for project review, meetings, approvals, site visits, construction inspection, etc., shall be subject to prompt reimbursement. The Developer is cautioned that project approval (City acceptance) and occupancy permits will be denied until all bills are paid in full.

CHAPTER 2 – DEVELOPMENT PROCEDURE

DEVELOPMENT PROCEDURE REQUIREMENTS

Any project that includes the construction of public infrastructure or represents an impact to public infrastructure shall comply with the following procedures. Public infrastructure includes all construction or impact to public streets, water, sanitary sewer, irrigation, storm drainage and any other facilities that will be owned, operated, and maintained by the City.

Unless otherwise specifically stated, the term “public improvement” or “public infrastructure” shall mean any improvement constructed within public right-of-way, or one that will be transferred to the City following construction, including, but not limited to, sanitary sewer, storm drainage, water irrigation, roadway, sidewalk, traffic signals, and streetlights.

Improvements for which these procedures shall typically apply include Street, Stormwater, Sewer, and Water impacts. Examples include:

Street:	All public street or roadway facilities and their appurtenances including traffic signals, street lighting, driveways, sidewalks, curb ramps, curb, gutter, bicycle and pedestrian facilities, and parking areas. The required procedures for private on-site sidewalks, private parking and loading facilities, private driveways, and other improvements are addressed through the Building Department.
Stormwater:	Public stormwater and drain systems and their appurtenances located within the public right-of-way or public easements, and infrastructure for private, on-site stormwater systems, located outside the public right-of-way. On-site stormwater system designs will be reviewed by the City to ensure systems meet the required stormwater regulations.
Sanitary Sewer:	Public sanitary sewer interceptors, trunks, collectors, and their appurtenances including portions of the building sewers located within the public right-of-way or public easement. The required procedures for private sanitary sewer service laterals and appurtenances located outside of the public rights-of-way or public easements are addressed through the Building Department.
Water:	Public water mains, water systems, irrigation mains, irrigation systems and their appurtenances. The required procedures for private, on-site water systems from the City meter to the building are addressed through the Building Department.

Minor improvements, such as residential driveway approaches or isolated sidewalk sections, may be exempt from these requirements at the discretion of the City Engineer.

PLAN REVIEW REQUIREMENTS

The Consultant shall prepare, seal, and submit to the City Engineering Department two complete sets of detailed construction plans, profiles, cross section, support data, design calculations, project details, and project specifications as applicable. A stormwater report shall be prepared, sealed, and submitted to accompany the construction plans. All such plans and specifications shall be in accordance with the requirements of the most current edition of the WSDOT Standard Specifications for Road, Bridge, and Municipal Construction, the Manual on Uniform Traffic Control Devices, the Department of Health Water System Design Manual, the Department of Ecology Criteria for Sewage Works Design, the Stormwater Management Manual for Eastern Washington, City of Quincy Standards, and all design of domestic water shall be compliant with WAC 246-290.

The City shall review the submitted plans and specifications within 30 business days and shall return one reviewed and noted copy indicating the changes, additions, deletions, or modifications that are required to make the plans and specifications acceptable. When the revised plans, specifications, and other materials are resubmitted to the City, the City shall review and upon acceptance, approve the revised plans and specifications notifying the Consultant of approval and the remainder of the review and inspection fees to be paid. Review of the revised plans and specifications will be on a first-come first-served basis, and a response will be provided to the applicant within 15 business days. The response will include additional comments or approval notifications.

Preliminary Review

Any applicant or property owner proposing an action that may require construction plans may request a preliminary review of the proposal by the City of Quincy. The preliminary review may be included as part of the pre-application process.

Variances

Variances from these Standards may be requested by the applicant. The variance application shall be accompanied by a recommendation from the City Engineer. Applications for any variance shall be submitted in writing. The application shall state fully all substantiating facts and evidence pertinent to the request.

The Public Works Department may recommend to the Hearing Examiner and/or City Council a variance from the requirements of these standards and regulations when, in his opinion, undue hardship may be created because of strict compliance with the provisions of these standards and requirements. The recommend conditions that they deem necessary to be desirable for the public interest. No variance shall be granted unless it can be shown that:

- There are special physical circumstances or conditions affecting said property such that the strict application of the provisions of these standards and requirements would deprive the applicant of the reasonable use or development of his land; and
- The variance is necessary to insure such property the rights and privileges enjoyed by other properties in the vicinity and under similar circumstances; and
- The granting of the variance will not be detrimental to the public welfare or injurious to other property in the vicinity.

Construction Plan Approval

It is the Developer's responsibility to obtain signatures and dates from all outside utilities within the City of Quincy indicating that they have reviewed and approved the plans. If required, the approval from outside utilities must be received prior to final plan acceptance and plan approval consideration by the City. If significant changes are required to the plans following the City's review, after initially receiving outside utility approval, the owner may be required to obtain the signature and date of possible impacted utilities as designated by the City.

Upon acceptance, the City Engineer, or their designee, will approve and sign the plans, such approved plans and specifications shall not be changed, modified, or altered without written authorization from the City Engineer, The Developer shall provide the City with a minimum of three (3) copies of the approved plan set and specifications for use by City Inspectors and City Departments as required.

CONSTRUCTION PLAN FORMAT

The City desires to maintain a consistent format to its construction drawings and, therefore, requires that all construction drawings conform the following format unless exceptions are approved in advance by the City Municipal Services Director and/or City Engineer.

The following format and requirements are minimum for Street, Storm Water, Water & Sewer Construction. Unusual or special facilities or construction requirements may dictate additional drawings and/or drawing requirements.

1. Sheet size: 24" x 36"

2. Plan

A separate construction plan is required at a sufficient scale not more than 1" = 50', showing all existing or proposed utilities, existing or proposed street surfacing and improvements, street centerline and stationing, street right-of-way margins, street names, legal identifications of properties such as lot number or tax lot number, section subdivision lines, all property lines and all water and sewer easements and rights-of-way.

Show the following:

- a) Locations of streets, rights-of-way, existing utilities, driveways, and sewers.
- b) All associated right-of-way, adjacent property lines, easements and/or proposed property lines. All utility easements, including County recording numbers.
- c) Site topography at a minimum of one (1') foot intervals, to include a minimum of five (5') foot within adjacent areas.
- d) Vicinity and site location map.
- e) All known existing structures, both above and below ground, which might interfere with the proposed construction, particularly water mains, gas mains, storm drains, overhead and underground power lines, telephone lines, and television cables.
- f) Show the location, material, and dimensions of the proposed roadway, sidewalk, curb, and gutter.

3. Profile

A separate drawing showing the vertical profile of the proposed roadway is required. The scale of these drawings shall at a sufficient scale not more than 1" = 50' horizontal and 1" = 5' vertical with horizontal grid of 50' and vertical grid of 5'.

Show the following:

- a) Above the ground line indicate the profile location by street name or other right-of-way designation.
- b) Show all crossing utilities and designate special materials or construction procedures that may be required.
- c) Provide a legend to clearly illustrate the composition of the profile.

GENERAL CONSTRUCTION REQUIREMENTS

Prior to construction, the Construction plans shall be reviewed and approved by the City's Engineering Department

Prior to construction, the Contractor shall schedule and attend a pre-construction meeting with the City and any other affected utility representative. The City shall host the Pre-Construction Conference within two weeks of the scheduling request by the applicant. The Developer's contractor will submit his insurance and construction schedule at this conference. Construction may proceed, per the approved schedule, following the completion of the Pre-Construction Conference, provided all the necessary documentation has been submitted and approved.

Work shall be performed only by Washington State licensed and bonded contractors with demonstrated experience in constructing public roads of the type being proposed for construction. No contractor shall perform work prior to obtaining all required licenses.

It is the responsibility of the Owner/Developer to ensure that construction is in conformance with the approved plans and specifications. The Owner/Developer is ultimately responsible for the work that is done. The City shall be notified not less than three working days before construction is to start. The Contractor shall obtain approval of materials to be used from the City prior to ordering or delivery of materials.

The City of Quincy may assign a construction inspector to the project at the Owner/Developer's expenses, the cost of which is covered by the plan review/inspection fees. In addition to routine observation. The City inspector will inspect specific elements and milestones during the work. All tests' inspections or reviews to be completed by the City shall be scheduled a minimum of two working days in advance. The City's inspection will not relieve the Owner/Developer's liability of all work being performed in conformance with the approved plans, specifications, and permits.

The Owner/Developer shall independently hire and cover all costs associated with quality assurance sampling and materials testing by a certified testing company and provide documentation of the results of the sampling and testing to the City. The requirements for sampling and testing are contained in the current edition of the WSDOT Standard Specifications for Road, Brigade and Municipal Construction, and these City of Quincy Construction Standards.

The Owner/Developer, or his assigned Agent, shall administer, manage, and supervise the construction and will be readily available to approve design changes, when necessary. The Contractor shall have a representative with authority on site whenever work is being performed. Any problems that are encountered or changes required due to construction conditions will be reviewed with the Consultant and the Owner/Developer. Changes that require any increase or decrease to the contractor's cost will be the responsibility of the Owner/Developer and may result in increased City review and inspection fees.

All construction shall meet the requirements of the most current edition of the WSDOT Standard Specifications for Road, Bridge, and Municipal Construction. The Manual on uniform Traffic Control Devices, the Department of Health Water System Design Manual, the Department of Ecology Criteria for Sewage Works Design, the Stormwater Management Manual for Eastern Washington, City of Quincy Standards, the approved plans, the approved Project Specifications, and other applicable regulations. All changes, alterations, or revisions to the approved plans or specifications shall be submitted for acceptance by the City Engineer.

Copies of all test records shall be furnished to the City Engineer on a weekly basis, or as deemed necessary by the City Engineer. The City Engineer, or his designee, will visit the project site to review the work related to the required inspection. Such site visits do not relieve the applicant, or the contractor of any responsibilities for performing all work in accordance with the approved

plans. The City Engineer, or his designee, may also visit the project site from time to time to monitor the overall progress of the project.

Failure to comply with testing requirements may necessitate appropriate testing and certification as directed by the City Engineer. Costs of such testing and certification shall be borne by the contractor and/or applicant. At the time that such action is directed by the City Engineer, no further work will be permitted on the project until all tests have been completed and all corrections have been made to the satisfaction of the City Engineer.

The City shall have the authority to cause a suspension of construction when, in the City's opinion, such work is not being done in conformance with the approved plans, specifications, regulations or permit. Any resultant delays, impacts, or added expenses shall not be the City's responsibility.

Upon written notice that the public improvements have been substantially completed, the City will, in the company of the Owner/Developer or his Agent, make a final inspection of the construction. The Owner/Developer shall see that all necessary additions, corrections, repairs, and/or modifications are made.

Fees, Bonds and Liability Insurance

Plan review and inspection fees are in addition to the City of Quincy permit application fees. The fees will be based upon the time necessary to review, comment, and meet with the project proponent. Such time will be dependent upon the plan's completeness, clarity, and conformance to drainage standards.

The City may require persons constructing improvements to post with the City surety and cash bonds or certified check in the amount of 150 percent of the estimated construction cost. Whenever the property owner is required to post other bonds on the project or on construction related to the facility, the bonds may, with the permission of the City Engineer, be combined into a single bond to the extent allowed by law; provided, that the amount thus bonded shall not at any time be less than the amount that would be required under separate bonds. The single bond shall clearly specify on its face those separate bonds which it is intended to replace.

Construction and Performance Bond: Prior to commencing construction the owner or person constructing the facility shall post a construction and performance bond, or in lieu of a bond the applicant may establish a cash escrow account with his/her bank or with the City Treasurer in the amount specified above. The amount of the bond or cash account shall be sufficient to reimburse the City if it should become necessary for the City to enter the property for the purpose of correcting and/or eliminating hazardous conditions relating to soil stability, erosion and/or drainage control. The instructions to the escrow agent shall specifically provide that after prior written notice unto the owner and the owners failure to correct and/or eliminate existing or potential hazardous conditions in a timely manner, the escrow agent shall be authorized without any further notice to the owner or his consent to disburse the necessary funds to the City for the purpose of correcting and/or eliminating such conditions as specified in the City complaint. The

construction and performance bond shall be released three years after determination by the Department that all facilities are constructed in compliance with the approved plans.

Liability Policy: The owner or person constructing the improvements shall maintain a liability policy during the construction period with policy limits of not less than \$100,000 per individual, \$300,000 per occurrence and \$50,000 property damage, which shall name City of Quincy as an additional insured without cost to the City.

CONSTRUCTION COMPLETION

At the conclusion of construction and when all corrections and repairs have been made, the Owner/Developer shall submit record drawings together with a Certificate of Work Completion, which shall include, but not be limited to, testing record, material certifications and warranties, and request for City Engineer certification of completed public improvements.

No building or service connection to sanitary sewers, storm drains, or water lines will be permitted until these systems have received certification by the City Engineer, or unless otherwise approved by the City for connections.

All public improvements including “As-Built Drawings” must be completed prior to receiving a Certificate of Occupancy.

All necessary easements entitling the City to properly maintain the facility have been conveyed to the City of Quincy.

When all public improvements have been completed in an acceptable manner and following receipt of a Certificate of Work Completion package, the City Engineer shall provide a certification of completed public improvements. Certification by the City shall not relieve the Owner/Developer’s, or the Contractor’s liability of work being performed conformance with the approved plans, specifications, and permit.

Only after Certificate of Work Completion is approved by the City Engineer and City of Quincy Council will the City of Quincy assume the maintenance and operation of the improvements.

CHAPTER 3 - STREET IMPROVEMENTS

STREET DESIGN REQUIREMENTS

Street Classifications

Arterial streets serve as the high-volume corridors that connect the major traffic generators and shall be designed to meet the minimum right-of-way and roadway dimensions as shown on the City Standard Details. Face of curb radii at intersections shall be a minimum of fifty (50) feet, or as approved by the City Engineer. Arterial streets shall be designed for a WB-50 vehicle and HL-93 loadings.

Collector streets shall be designed to meet the minimum right-of-way and roadway dimensions as shown on the City Standard Details. Face of curb radii at intersections shall be a minimum of thirty-five (35) feet, or as approved by the City Engineer. Collector streets shall be designed for a WB-50 vehicle and HL-93 loadings.

Local Access (Residential and other streets not designated as Arterial and or Collector) streets shall be designed to meet the minimum right-of-way and roadway dimensions as shown on the City Standard Details. Face of curb radii at intersections shall be a minimum of twenty-five (25) feet, or as approved by the City Engineer.

Street Layout & Geometry

The street centerline radius shall be designed to meet minimum standards for applicable design speeds as presented in the Policy on Geometric Design of Highways and Streets (Green Book) published by the American Association of State Highway and Transportation Officials, or as approved by the City Engineer.

The maximum length of a cul-de-sac street shall be 600 feet measured along the street centerline from the nearest street intersection to the throat of the cul-de-sac. Where it is not feasible to construct a cul-de-sac turnaround, the City may allow the use of an “L” or “Hammerhead” turnaround upon approval by the City Engineer and Fire Department. The cul-de-sac shall have a minimum right-of-way radius of 60 feet and a minimum driving radius of 48 feet to the face of the curb.

A subdivision of 30 or more lots shall have two or more access points consistent with the International Fire Code. All street intersection angles shall not be less than 80 degrees, including private roads. Offset street intersections shall not be less than 200 feet for Arterial and Collector streets and 100 feet for Local Access streets. A tangent at least 200 feet long shall be introduced between reverse curves on Collectors and Arterials.

Street grades shall be kept to a maximum of six (6) percent for Arterials, eight (8) percent for Collectors, and ten (10) percent for Local Access streets, unless otherwise approved by the City Engineer. The minimum grade for all streets shall be five-tenths (0.5) percent. Vertical curves

shall be designed when the profile point of intersection grade difference is greater than one (1) percent. AASHTO requirements for sight-distance shall apply.

Street Curb, Gutter & Sidewalk

Cement concrete barrier curb and gutter and sidewalks shall be installed along both sides of all new streets, or as approved by the City Engineer. Sidewalk widths shall be five (5) feet along Local Access, Arterial and Collector streets (or otherwise as designated in the City of Quincy Municipal Code). Pedestrian ramps shall be designed to City Standard Details and shall meet ADA requirements. Crosswalks between pedestrian ramps shall be designed meet ADA requirements with cross slopes less than 2% or current ADA Standards.

Driveways

Driveways shall be located on the lowest classification of roadway abutting the development. Driveway widths and locations are limited to one per lot or as approved by the City Engineer. A "Corner" lot driveway shall be located as far as possible from the street intersection. Driveway widths shall be as specified on the City Standard Details.

Intersection Sight Distance

The sight distance triangle Clearview shall remain clear of anything erected, placed, planted, or allowed to grow in such a manner as to materially impede vision between the heights of 2.5' and 10' above the intersection centerline elevation. At the discretion of the City Engineer, City infrastructure may be located within the Clearview including but not limited to regulatory signage, illumination, and utility poles.

Fencing, transformers, pedestals, and other above ground utilities shall not inhibit intersection sight triangles or access to any City utility. The Fire Marshall may require an emergency vehicle access in addition to other access points. If required, the access shall be designed to meet the standards as approved by the Fire Marshall

Streetlights

Streetlights shall be installed in accordance with Grant PUD requirements and City Standard Details. Typical street light locations include intersections, fire hydrants, outside of curves, and along straight roadway segments. Actual locations shall be approved by Grant PUD and the City Engineer.

Monuments

In all new developments, monuments with cover caps and cases shall be installed at the centerline of street intersections, angle point and points of curves, and at other locations as determined by the City Engineer.

Signs & Pavement Markings

Traffic signs, posts, sleeves, pavement markings, and channelization devices shall be provided and installed by the developer in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD) and City Design and Construction Standards. Center line

markings shall be installed on all paved arterials and collectors, and any lower classified roadways having an ADT of 6,000 vehicles per day or greater.

Traffic Studies

A traffic study shall, at a minimum, be a thorough review of the intermediate and long-range effects of the proposed development on the City's transportation system and may result in mitigation of those resulting impacts.

If 25 or more peak hour trips are generated by the development, a traffic study is mandatory. If less than 25 peak hour trips are generated by the development, the City Engineer may require a traffic study to be completed on a project basis, at the Developer's expense. This decision may be based upon the size of the proposed development, existing traffic/roadway conditions, existing and anticipated traffic volumes, trip distribution, accident history, property zoning, truck traffic percentage, event-based traffic, expressed community concern, and other factors relating to complexity, and location of proposed development.

STREET CONSTRUCTION REQUIREMENTS

All new street design and construction must conform to these Design and Construction Standards of the City of Quincy, the Manual on Uniform Traffic Control Devices, the City of Quincy Municipal Code, the Washington State Chapter of American Public Works Association, and the latest edition of the Standard Specifications for Road, Bridge & Municipal Construction.

City of Quincy Material Requirements

All Materials shall meet the Current WSDOT Standard Specifications unless otherwise approved by the City Engineer.

CHAPTER 4 – STORM DRAINAGE

Introduction

Urban development can cause significant changes in patterns of stormwater flow from land into receiving waters. Water quality can be affected when runoff carries sediment or other pollutants into streams and wetlands or into groundwater. Stormwater management can help to reduce these effects. Stormwater management involves careful application of site design principles, construction techniques and source controls to prevent sediment and other pollutants from entering surface or groundwater, treatment of runoff to reduce pollutants, and flow controls to reduce the impact of altered hydrology.

Future stormwater drainage problems may be reduced or avoided if future developers, both private and public, provide for storm and surface water drainage of their respective properties. Storm Drainage Standards are set forth to protect life and property from loss and damage by flooding, to protect channels, streams, and ground water from pollution and excessive flows.

The following storm drainage standards are intended to reduce and prevent adverse storm drainage impacts. They represent the minimum design standards for the construction of storm drainage facilities improvements within the City of Quincy. Compliance with these standards does not relieve the designer, owner, or developer of the responsibility to apply conservative and sound professional judgment to protect the health, safety and welfare of the general public. Special site conditions and environmental constraints and considerations may require a greater level of protection than would normally be required under these standards.

Drainage Plan Required

Permanent drainage and stormwater infiltration/retention facilities shall be provided on property improvements within the City of Quincy in accordance with these Standards for the following types of improvements:

1. All plats and short plats creating new building lots of 0.75 acres or less in individual lot size.
2. All developments, including remodeling, reconstruction, redevelopment, and new construction adding ten (10,000) thousand square feet or more of new impervious surfaces, including gravel parking areas.
3. Developments entailing construction which would change the point of discharge of surface waters, discharge surface waters at a higher velocity and/or quantity than that of the pre-development discharge rate or tend to add to pollution of surface waters.

4. Grading Permits.

Design Requirements

All land development shall provide a drainage plan for surface water flows entering, flowing within, and leaving the subject property. The plan is to conform to the following design standards and requirements.

The City of Quincy requires plans for storm drainage and infiltration/retention facilities be prepared by a registered Civil Engineer currently licensed by the State of Washington and qualified by experience and education in the field of hydraulics, hydrology, or a closely related field. Storm drainage plans or revisions to any approved plan shall be reviewed and approved by the City prior to any construction. Approval by the City shall be in the form of a signature block with signatures from all departments with jurisdiction.

Developments in the City of Quincy shall comply with the requirements of the Current Stormwater Management Manual for Eastern Washington (SWMMEW) prepared by the Washington State Department of Ecology.

On-site storm drainage improvements must be sufficient to mitigate impacts due to flooding, erosion, sedimentation, or pollution.

All drainage system elements must always provide adequate maintenance and accessibility. Storm drainage facilities shall be designed to eliminate interference from underground utilities and from conditions which exceed design loads for any pipe or other structural element.

The designer of any storm drainage system element shall consider system reliability in terms of layout, specifications of materials and methods of installation.

Discharge at Natural Location: All surface and stormwater runoff from a proposed development that would construct new or modify existing drainage facilities should be discharged at the natural location and not be diverted onto or away from the adjacent downstream property. Diversions may be allowed if it corrects an existing problem and does not create or exacerbate a new problem.

Tributary Area Analysis: Proposed developments must identify the upstream tributary drainage area and provide an analysis of the pre-existing drainage volume and quality and an analysis of the impact of the proposal on the drainage system.

Proposed projects must control the peak rate runoff to not exceed the pre-development peak rates for the site. The methods of peak rate runoff control may include retention and/or infiltration. On-site bio-filtration in combination with infiltration systems is the preferred method for management of on-site stormwater and shall be considered and shown to be infeasible before transporting stormwater off-site is accepted.

All proposed development drainage conveyance systems must be analyzed, designed, and constructed to handle drainage flows from existing off-site tributaries, the abutting street sections, and on-site storm drainage.

Developments involving clearing and grading and/or that propose new, or modifications of existing drainage facilities shall include an erosion/sedimentation control plan which includes suitable measures to prevent sediment-laden runoff from leaving the site during construction. Erosion/sedimentation control may be achieved by structural control measures (sediment trap or pond), covers (mulch, sodding, plastic covering) and/or construction practices (straw bale barriers, silt fence, stabilized construction entrances).

It shall be clear in the Drainage Report whether a Construction Stormwater General Permit is required for the project by the Department of Ecology. If the permit is required, the Stormwater Pollution Prevention Plan (SWPPP) shall be submitted to the City.

Maintenance and operation of all private drainage facilities is the responsibility of the property owner or a properly formed homeowners association and shall be performed in compliance with City of Quincy maintenance standards. The City reserves the right to maintain a private drainage facility when the facility is out of compliance with maintenance standards as determined by the City of Quincy. Any and all costs associated with this City maintenance will be paid by the property owner or homeowners association.

Runoff Control

Developments shall be designed and constructed to provide control of the quality and quantity of stormwater runoff both during and after construction. Erosion and sedimentation control plans shall be submitted and approved by the City prior to the beginning of any construction. Peak discharge control and retention facilities shall be provided in accordance with these Standards. Biofiltration, oil/grease separation devices, or other pollution control mechanisms are to be installed prior to occupancy and release of any performance securities held by the City.

Maximum allowable release rates from stormwater infiltration/retention systems shall be based upon the pre-development runoff from the development site.

The on-site drainage system including conveyance, flow restriction, infiltration/retention, pollution control, and emergency overflow elements must be professionally designed and sized to handle runoff from the site and conveyance through the site. The design should be carefully analyzed for potential problems, flow impediments, construction or maintenance difficulties, and potential erosion or other property damage.

Storm drainage piping shall be constructed in accordance with the current version of the WSDOT Standard Specifications and Standard Plans. Minimum diameter for storm water conveyance pipelines between separate structures shall be 12 inches.

Pavement drainage shall comply with Chapter 5 – Drainage of Highway Pavements of the Washington State Department of Transportation's (WSDOT's) Hydraulics Manual.

Conveyance systems (pipes, ditches, swales, etc.) should be designed to convey the water tributary to them as described for road pavement drainage. If the conveyance system is not associated with road pavement drainage (i.e. the runoff being conveyed is directly from areas such as parking lots, roofs, landscaped areas, etc.) then the conveyance system shall be sized to safely convey the peak runoff from the 25-year design storm event using the Rational Method or the Single Event Hydrograph Method and the Short Duration Regional Storm as identified in the Stormwater Management Manual for Eastern Washington.

Conveyance systems shall be allowed to overtop for design storm events larger than the aforementioned design events, to the extent that the overtopping does not create or contribute to a flooding or erosion problem. The project design shall demonstrate a stabilized conveyance path (e.g. overland) for the 100-peak flow within the project site to ensure it is adequately conveyed to an exempt water body or to an adequately sized surface water management facility, and discharges at the natural location for the project site.

A backwater analysis should be performed on any proposed conveyance system design or existing conveyance system to be affected by the project to ensure adequate conveyance capacity, unless it can be reasonably concluded that the system will have adequate capacity. (e.g. Pipe flowing less than 70 percent full using a Manning's equation and low flow velocities so as to not create significant head losses at junctions.)

The peak discharge rate from the road right-of-way and developed property shall be limited to the pre-development peak rate runoff for all events from a two-year to a 100 year storm event as defined by Table 1. Peak runoff rate shall be computed using the Soil Conservation Service TR-55 method, or other approved models.

Stormwater infiltration/retention facilities shall be provided to retain all surface water runoff in excess of the allowable peak discharge in accordance with provisions for "infiltration/retention facilities" of these standards up to the "100-year" storm event.

Oil Separation Devices

Whenever paved parking is provided for more than 20 vehicles, or for any paved parking or access roadway draining to an open waterway, an oil/grease separation device shall be installed by the Owner for spill control. The device shall be constructed and installed consistent with current State Requirements. It shall be located at a point where it can be easily maintained and where it will intercept floating contaminants flowing off road rights-of-way, parking lots, and other sources of pollutants. Selection and sizing of oil separation device type shall be subject to approval of the City Engineer. The applicant should consider the use of vegetative or other natural filtration means. Effluent discharges from any oil removal treatment device to the storm sewer or surface water system shall be in compliance with State Department of Ecology regulations for discharge to storm drains or surface waters.

All stormwater must enter the separator through an inlet pipe, unless the separator is an integral part of an approved catch basin.

The property owner assumes full responsibility and liability for proper maintenance and operation of the oil separator unless the separator is a part of a publicly operated drainage system.

Access to the separator shall be always maintained for inspection.

Oil accumulation in the oil separator compartment shall not exceed three inches at any time.

Following oil removal, the separator shall be backfilled with clean water to prevent oil carry-over to clear well.

Waste oil accumulations removed from the separator shall be disposed of in an acceptable manner and shall not be disposed or discharged to the ground water, storm drains, or streams.

Design of an oil separator facility should be based upon flows from an approved infiltration/retention system over the area contributory to the oil separator and the provision of one hour retention time in the oil separator at that flow. In addition the oil separator must be designed with a depth to width ratio of between 0.3 and 0.5.

Erosion and Sedimentation Control

Standards should be provided as necessary during and after construction to prevent erosion and to prevent silt from being carried off-site. A SWPPP shall be provided to the City if the preparation is required for the Department of Ecology Stormwater General Construction Permit.

Infiltration/Retention Facilities

All stormwater runoff originating from and/or draining from any proposed development shall be controlled and/or conveyed in accordance with all other City standards and policies and as described in these Standards. When existing conditions make stormwater infiltration/retention impossible for a portion of a site, in lieu of providing infiltration/retention for such an area, at the discretion of the City Engineer, compensatory storage volume and reduction of allowable release rates may be provided on another portion of the site. In no case shall the runoff from the total site exceed the allowable release rate.

The stormwater infiltration/retention requirement may be waived at the discretion of the City Engineer if the volume of storage calculated for that development is less than 250 cubic-feet and if the site has no environmental, hydraulic, or hydrologic constraints that must be mitigated by providing storage.

Prior to occupancy of any single phase of a phased development, storm drainage facilities should be completed and operational to provide runoff control, infiltration/retention, and water quality treatment for the phase for which occupancy is requested.

Stormwater infiltration/retention systems should be designed to maximize reliability, ease of maintenance, and water quality of runoff and should minimize hazards to persons or property (both on-site and offsite), nuisance values, and risk of failure.

Sufficient infiltration/retention storage capacity shall be provided to store the excess runoff from the developed site during a storm event having a probability of occurrence commonly known as the “100-year storm”. A non-erosive overflow path shall be provided from each infiltration /retention facility to protect adjacent property from damage.

Controlled Overflow Requirements: All infiltration/retention storage facilities should include a provision for control of overflows, and suitable data shall be provided to support the design. Under no circumstances should the overflow be overland to private property not included as part of the development without written permission. No overflow will be allowed into irrigation canals.

The proposed site should have favorable topography and suitable soils that are conducive to infiltration.

A log of the soils and infiltration test data shall be submitted to reveal site soil conditions and infiltration rates.

Ground water depth, location, flow and general characteristics shall be considered.

City of Quincy Material Requirements

All Materials shall meet the Current WSDOT Standard Specifications unless otherwise approved by the City Engineer.

CHAPTER 5 – SANITARY SEWER

Introduction

The standards established by this section are intended to represent the minimum standards for the design and construction of sanitary sewer facilities. Greater or lesser requirements may be mandated by the City due to localized conditions. The following design and construction considerations shall apply.

It is the intent of the City of Quincy to have all buildings connected to a gravity sewer collection system. Line extensions may be required to provide service to developments instead of septic systems. Longer routes may be required to avoid lift station and pressurized main lines.

Design Requirements

All extensions and additions to the City's sanitary sewer system shall conform to the Design and Construction Standards of the City of Quincy, the Washington State Department of Ecology, and designed by a Civil Engineer currently licensed by the State of Washington.

All sanitary sewer improvements shall be designed in accordance with the Washington state Department of Ecology's Criteria for Sewage Works Design (Orange Book) current edition and the following minimum City Standards set forth herein.

All new lots and developments shall be served by a public sanitary sewer line adjacent to the lot or development site.

Sewer lines shall be extended by the Developer to the point where the adjoining property owner's responsibility for further extension begins. This typically requires an extension across the entire frontage of the property to the property line of the adjoining owner. In some cases, it may require dedication of an easement and a line extension across the property or extension across two or more sides of the developing property. Extensions will be consistent with and implement the City's adopted Comprehensive Sewer Plan, including alignments, sizes, and depths necessary to serve future areas within the Urban Growth Area (UGA) boundary.

Sewer lines shall be located in streets, or alleys to serve abutting properties. Lines located in streets, or alleys shall be offset from the street centerline and not located within a vehicle wheel path. When necessary, sewer lines may be located within public easements, or alleys. Sewer lines located in easements, or alleys shall generally be located in the center of the easement, but may, with the approval of the City Engineer, be offset to accommodate the installation of other utilities or to satisfy special circumstances.

Main Sewer Laterals

The minimum size for public sewer lines is eight (8) inches in diameter. The developer's sewer system must provide capacity for the proposed development but must also provide capacity for future extensions consistent with the General Sewer Plan.

Manholes shall be installed at intervals of no greater than 400 feet and at all vertical and horizontal angle points in the sewer main. Curved or deflected pipelines will not be permitted. Sewer lines shall be terminated with a manhole. In special circumstances, a flush-end (cleanout) may be installed on the end of a sewer main extension, provided the end is no further than 150 feet from the last manhole and the sewer main line and grade will permit further extension.

Sewer mains generally should not exceed a slope of 5%, unless site constraints require steeper slopes. Should the sewer main slope exceed 5%, the Developer's Engineer shall provide calculations to determine if energy dissipaters and/or pipe restraints are necessary. The City Engineer will make the final determination if dissipaters and restraints are required. Sewer mains with a slope of 20% or greater shall be secured with concrete anchors, with spacing requirements determined by the City Engineer.

All new sewer line installations shall be satisfactorily tested and inspected prior to being placed into service including low pressure air and deflection testing, and television inspection, all at the expense of the Developer.

Side Sewers

Each building containing sanitary sewer facilities shall be served by a separate private side sewer line. Branched side sewers serving multiple buildings and properties shall not be permitted. A single side sewer serving multi-unit buildings is permitted.

Sewer services to residential single-family lots shall be a minimum of 4-inch diameter, and commercial properties shall be a minimum of 6-inch diameter.

Side sewers shall have a minimum slope of 2.0%.

Side sewers services shall be installed in accordance with these Construction Standards and as shown on the City Standard Details.

Side sewers shall be constructed at a 90° to the lateral sewer.

Side sewers shall extend 10-feet beyond the right-of-way and the pipe end shall be capped and marked for future connection. Services shall be located a minimum of 10-feet from water services and on the low side of the lot.

Sewer lines shall be designed for gravity flow operation and in accordance with the General Sewer Plan.

Sewer Force Mains / Lift Stations

Sewer force mains may be necessary in specific City locations as determined by the City Engineer. Lift stations and force mains shall be limited to those locations and circumstances where they are consistent with the General Sewer Plan and are the only viable solution to serve the proposed development and other properties in the vicinity. Lift stations and force mains shall be designed by a Professional Civil Engineer licensed in the State of Washington in accordance with the direction and requirements given by the City Engineer, for review and approval by the City of Quincy Public Works Director and City Engineer. Hydraulic analysis including modeling shall be performed by the Developer's Civil Engineer as determined necessary by the City Engineer.

The design of sewer lines and appurtenances is subject to review and approval by the City Engineer. The City Engineer may, at his discretion, adjust these Design and Construction Standards as necessary to facilitate installation of sewer lines and appurtenances for the health, safety, and protection of the general public.

City of Quincy Material Requirements

All Materials shall meet the Current WSDOT Standard Specifications unless otherwise approved by the City Engineer.

CHAPTER 6 – WATER SYSTEM

Introduction

All extensions and additions to the City of Quincy's domestic water system shall conform to the Design and Construction Standards of the City of Quincy, the Washington State Department of Health (DOH), American Water Works Association, and designed by a Civil Engineer currently licensed by the State of Washington.

All new lots and developments shall be served by a public domestic water supply line to be maintained by the City of Quincy and located adjacent to the lot or development site. The water supply line shall be capable of providing sufficient flow and pressure to satisfy the fire flow and domestic service requirements of the proposed lots and development requirements. If determined necessary by the City Engineer, hydraulic analysis including modeling shall be performed by the City or its agents, and all costs shall be borne by the Developer.

Water lines shall be extended by the Developer to the point where the adjoining property owner's responsibility for further extension begins. This typically requires an extension across the entire frontage of the property to the property line of the adjoining owner. In some cases, it will require dedication of an easement and a line extension across the property or extension across two or more sides of the developing property. Extensions will be consistent with and implement the City's adopted Water System Plan.

All new public domestic water mains shall be a minimum diameter of 8 inches, or larger diameters as specified in the City's Comprehensive Water Plan, or larger as required to meet the fire flow demand of the development. Cover over new watermains shall be a minimum depth of 42 inches and a maximum of 72 inches.

New water mains shall be located in existing or proposed streets within City right-of-way and shall be offset from the street centerline, not located within a vehicle wheel path.

Larger public water mains may be required depending upon fire flow requirements as determined by the City and City Engineer and the Fire Marshall.

All domestic water mains shall be looped, where possible, as determined by the City Engineer. Temporary dead-end mains over 600 feet in length will only be allowed where future water main looping via public right of way will be assured. No permanent dead-end water mains over 600 feet in length will be allowed to be part of the City of Quincy's public water system unless approved by the City Engineer and the Fire Marshall.

Backflow prevention assemblies shall be installed at the water meter and shall be shown on the plans. Required backflow prevention assembly types shall be as specified in the City. Yearly test

reports shall be provided to the City's Water Quality Inspector. The backflow device shall be on the state approved list, available through the Washington State Dept. of Health. (please see Appendix A and Appendix B)

Valves

Maximum valve spacing in public water mains will be 800 linear feet. Valves shall be installed on all but one of the legs of new water main intersections. Valve operating nut extensions approved by the City will be required on valves where the operating nut is deeper than 36 inches below finished grade.

All valves 8-Inch and small shall be resilient seated ductile iron gate valves and all valves 10-Inch and larger shall be ductile iron butterfly valves.

Minimum 2-inch air and vacuum release valves shall be furnished and installed at high points in the water system.

Testing

All new water main installations shall be satisfactorily tested prior to being placed into service including hydrostatic pressure and bacteriological testing, all at the expense of the Developer.

Disinfection and Flushing

All newly installed pipes, valves, service connections, reservoirs and appurtenances shall be flushed and disinfected in accordance with the standards set by the Washington State DOH, AWWA, WSDOT, and APWA Standard Specifications.

All chlorinated water used in flushing and disinfection shall not be discharged into the ground where it can convey and enter surface waters.

Water Service Lines

All new water service lines shall be a minimum of 1-inch, for 3/4- and 1-inch meters, and shall be a minimum of 2-inch, for 1 1/2- and 2-inch meters. The Developer/Contractor shall furnish and install all water service components (except hot tap and water meter) from the water main to the property line including service saddle, corporation stop, service pipe, meter stop, meter check valve, customer piping, and meter box, all at the Developer's expense. Only one meter shall be served from each main tap. The City of Quincy Public Works shall be present for all service hot taps.

Materials to be used for installation of water service meters shall preclude the use of potentially contaminating materials such as lead and copper.

New water main connections to existing water mains shall be installed with cut-in tees/crosses, unless a hot tap is approved by the City Engineer. If the existing water main is less than 6-inch diameter, a cut-in tee shall be required, and a hot tap will not be considered for approval. All hot taps of water mains 12" and smaller shall be performed by City of Quincy Public Works Crews or

a contractor approved by the City Engineer, using a full circle stainless steel sleeve with tapping gate valve. The contractor shall provide traffic control, excavate the connection location, provide adequate sloping/shoring, and install tapping sleeve and valve prior to City Crew arrival. All work (including City Crew tap) will be at the expense of the Developer.

Fire Hydrants

Maximum spacing of fire hydrants shall be 250 feet for residential-zoned areas, and 300 feet for all other zoned-areas, on alternating sides of the street, and shall be located at intersections or as approved by the Fire Marshall.

Additional hydrants may be required to protect structures as determined by the Fire Marshall and City Engineer. Additional fire hydrants required on a site may require a looped, on-site water main. Easements shall be provided for all on-site, public, looped water mains.

Fire hydrants shall be located at the ends of curb returns or at property lines between lots, and not be located within driveways, driveway ramps, or handicap ramps.

Fire hydrants located within 50 feet of the water main shall be a minimum diameter of 6 inches. Hydrants beyond 50 feet of the water main shall be a minimum diameter of 8 inches, or larger as necessary to achieve required fire flows.

When additional fire hydrants are required or the required fire flow of a new site is greater than the existing fire flow capacity, the public water main shall be extended and looped around the site, reconnecting to the public distribution supply main, at the Developer's expense. Fire hydrants shall be located along the looped public water main as determined by the Fire Chief. The looped water main will remain public and will not require check valves. The looped water main shall be located within an easement centered on the water main, free of any other parallel-aligned private utilities. All water main components shall be located within the easement including valves, hydrants, thrust blocks, fittings, etc. such that the City can maintain the public utility.

Between the time when the hydrant is installed and the hydrant is placed in operation, the hydrant shall at all times be bagged or covered as approved by the City, to clearly indicate that the hydrant is not in service.

City-approved backflow prevention devices are required on all fire line connections to public water mains when the line is not required to be looped.

Separation

Water mains shall maintain a 10-foot horizontal and 18-inch vertical separation above non-potable pipelines (sanitary sewers, reclaimed water, irrigation pipelines, stormwater pipes, and other uses) in accordance with Section 8.4.4 of the Water System Design Manual, Current edition, by the Washington State Department of Health. Additionally, water and sewer mains shall be separated in accordance with Section C1-9.1 of the Criteria for Sewage Works Design, August

2008, by the Washington State Department of Ecology. Gas, power, telephone, and other dry utilities shall maintain a minimum 3-foot horizontal clearance from water mains.

Water mains installed beneath railroad tracks, State highways, irrigation canals, building structures, etc. shall be encased in a continuous welded steel casing (or as approved by permitting agencies) and provided with casing spacers in accordance with these Standards.

Requirements by other agencies involved in crossings shall supersede these Standards.

The design of water mains and appurtenances is subject to review and approval consideration by the City of Quincy Municipal Services Director and City Engineer. The Municipal Director may, at his discretion, adjust these Design and Construction Standards as necessary to facilitate installation of water lines and appurtenances for the health, safety, and protection of the general public.

New water systems shall be placed in service, including all successful testing, prior to placement of Hot Mix Asphalt.

Irrigation Systems

A separate meter is currently required in some locations and Where the City of Quincy Irrigation Water Utility is available and/or as determined by the City Engineer, new subdivisions and developments shall be served by a separate irrigation water distribution system with an individual service for each lot. The irrigation system shall be designed by a professional engineer and constructed in accordance with applicable City of Quincy Construction Standards. All new public irrigation mains shall be a minimum diameter of 8 inches, or larger diameters as required by the City of Quincy. In the event irrigation water is not available in the vicinity of the subdivision, the irrigation system shall be tested, sealed, and buried with ends clearly marked to facilitate a connection when irrigation water is available. Refer to Section 8-03 for material requirements.

Domestic water and non-potable irrigation services should be extended to opposite lot corners in new construction. Where it is impossible to install them in that manner, 10-feet of separation needs to be supplied between the service points (meter boxes).

Pressure Reducing Valve (PRV) Stations

Where the water system pressures are outside of acceptable ranges as identified in the City's Water System Comprehensive Plan, a pressure reducing valve (PRV) station may be required as determined by the City Engineer. The PRV station shall be designed by a Civil Engineer currently licensed by the State of Washington and shall be submitted to the City for review. All costs for design, review, approval, procurement, installation, and construction shall be borne by the Developer, see PRV section below.

The City's Water System Comprehensive Plan and Irrigation Masterplan define the minimum and maximum pressures admissible in the system. In locations not covered by the Plan, the City may

determine a study is necessary to determine a development's impacts on the system, at the expense of the Developer. The topography of the service area dictates the division of the water system into different pressure zones. PRVs are needed where connections between different pressure zones are proposed or required for the extension of the water system. PRVs are deemed necessary when otherwise the potable water or irrigation water would be delivered at pressures non-compliant with the established threshold.

When a PRV is deemed necessary by the City, the Developer shall be responsible for providing a design in accordance with the City's Water System Comprehensive Plan and City Standards.

Said design will be reviewed by the City Engineering Department as part of the development plan review process.

The PRV design and all associated flow calculations and thrust block/restraint calculations must be performed by a Professional Engineer licensed in the State of Washington.

The PRV design must comply with the following criteria:

- All necessary calculations and drawings for any related design shall be submitted to the City for approval. Calculations of flow must be performed by the Developer's engineer based on the Peak Hourly Demand (PHD), plus provisions for required fire flow.
- Pressure zones must adhere to the provisions included in the Comprehensive Plan and Masterplan for the respective utility.
- All PRVs will be placed in vaults that are large enough to provide ample work space for field inspection and valve repair.
- Vaults shall be designed with a gravity drain or sump pump into an adjacent drainage structure, to prevent vault flooding.
- Pressure relief valves will be considered for closed pressure zones to prevent over pressurization if a PRV fails in the open position. A pressure relief valve can be incorporated into the PRV Package Station or can be design in stand-alone configuration. Pressure relief valves shall feature full flow piping to a turned down riser 18" to 36" above ground, for visible detection of relief flow. Relief flow shall be routed to a nearby retention basin of appropriate size.
- The pressure reducing valve shall be set to open at any pressure below its preset setpoint and to close at any pressure above an adjustable deadband, to maintain downstream pressure within 2.5 psi of the pressure setpoint. Downstream pressure control shall not be based on changing upstream pressures. Valve shall be provided with a valve position indicator assembly.
- The upstream pressure shall be sustained at a predetermined minimum, to be established by the City.

City of Quincy Material Requirements

All Materials shall meet the Current WSDOT Standard Specifications unless otherwise approved by the City Engineer.

Quincy Standard Drawing Details Appendix

Streets Map

- AS-1 Quincy West Streets
- AS-2 Quincy East Streets

Roadway

- R-1 Typical Street Standards
- R-2 Trenching / Bedding / Surfacing Repair
- R-3 Cement Concrete Curb & Gutter
- R-4 Cement Concrete Sidewalk
- R-5 Cement Concrete Sidewalk Curb Ramp
- R-6 Cement Concrete Driveway Approaches
- R-7 Standard Cul-De-Sac
- R-8 Offset Cul-De-Sac
- R-9 Local Street Eyebrow
- R-10 Local Street Hammerhead Turnaround
- R-11 Sign Installation
- R-12 Monument Case & Cover

Storm Drainage

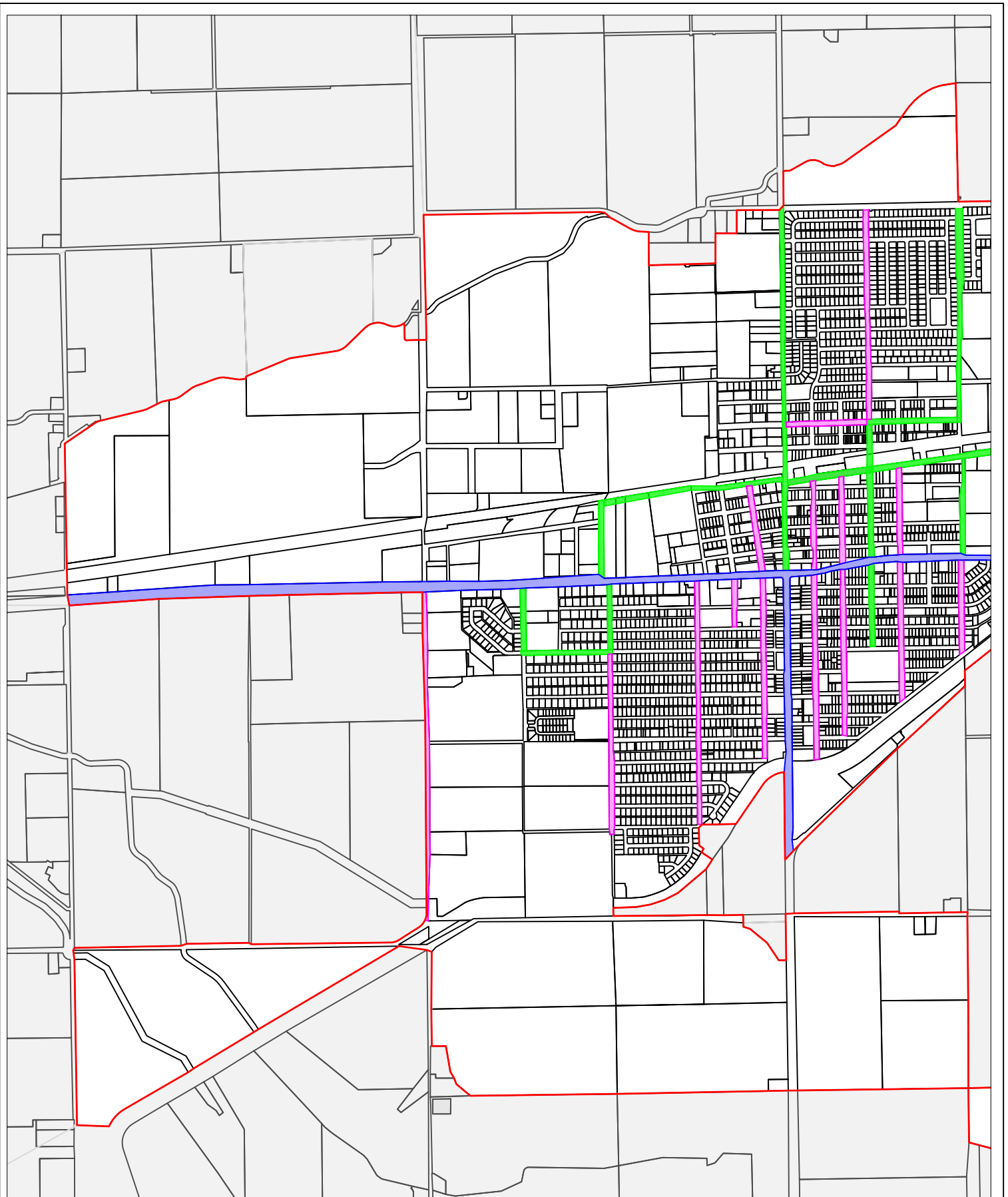
- SD-1 Catch Basin Type I
- SD-2 Concrete Drywell
- SD-3 Infiltration Trench & Drainage Swell?

Sanitary Sewer

- SS-1 Standard Manhole
- SS-2 Standard Drop Manhole Connection
- SS-3 Sewer Cleanout
- SS-4 Sewer Service Installation

Water

- W-1 Valve & Tracer Wire
- W-2 Water Service
- W-3 Concrete Trust Block
- W-4 Fire Hydrant
- W-5 Air / Vacuum Relief
- Exhibit A Installation Guidelines for Small Double Check Valve Assemblies
- Exhibit B WA State approved List of Double Check Valve Assemblies



- Major Arterial Streets
- Secondary Arterial Streets
- State Highway
- City Limits



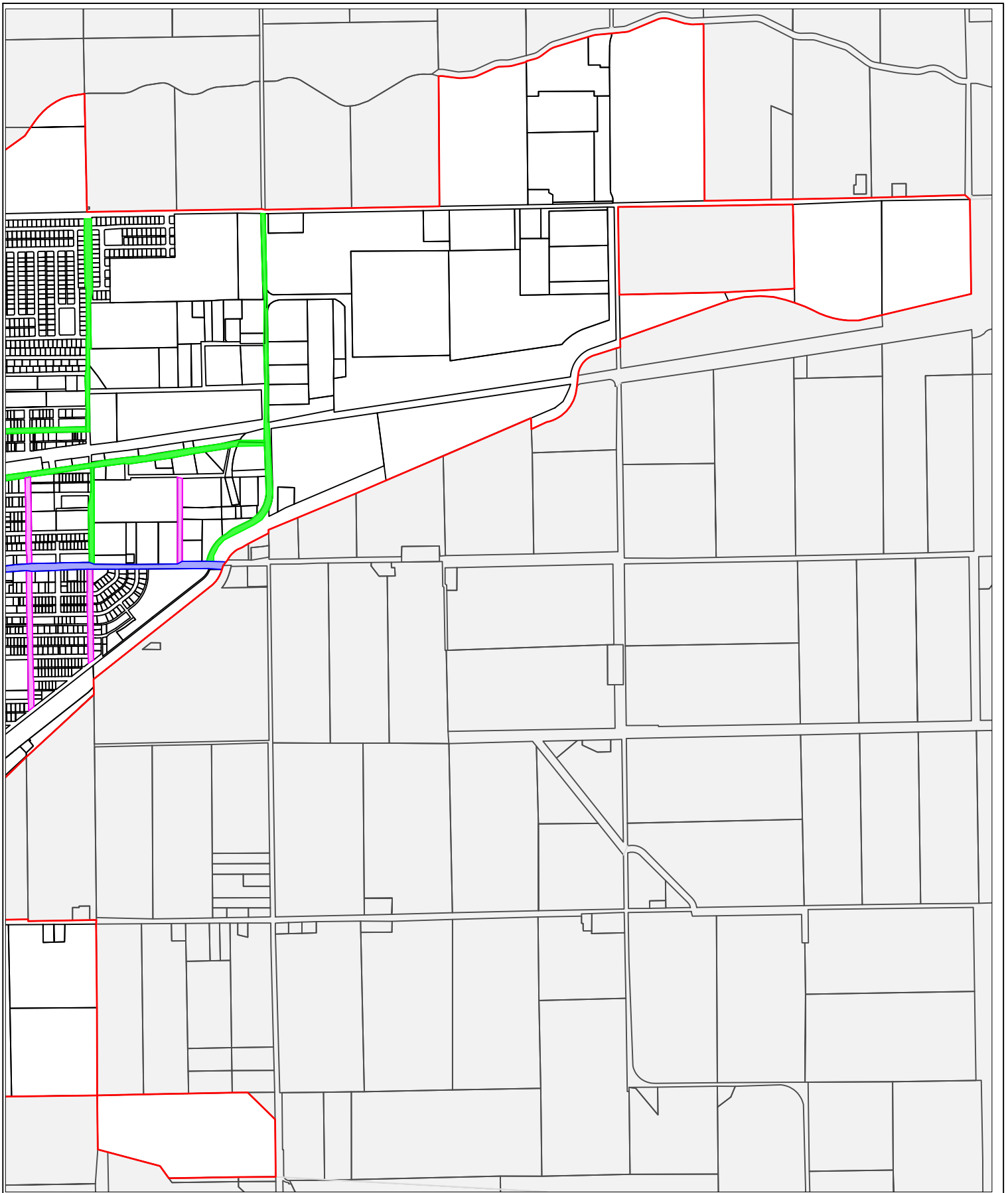
Quincy West - Arterial Streets

City of Quincy Washington - Standard Drawings

Scale: NTS

Date: 9/5/2022

AS-1



- Major Arterial Streets
- Secondary Arterial Streets
- State Highway
- City Limits



Quincy East - Arterial Streets

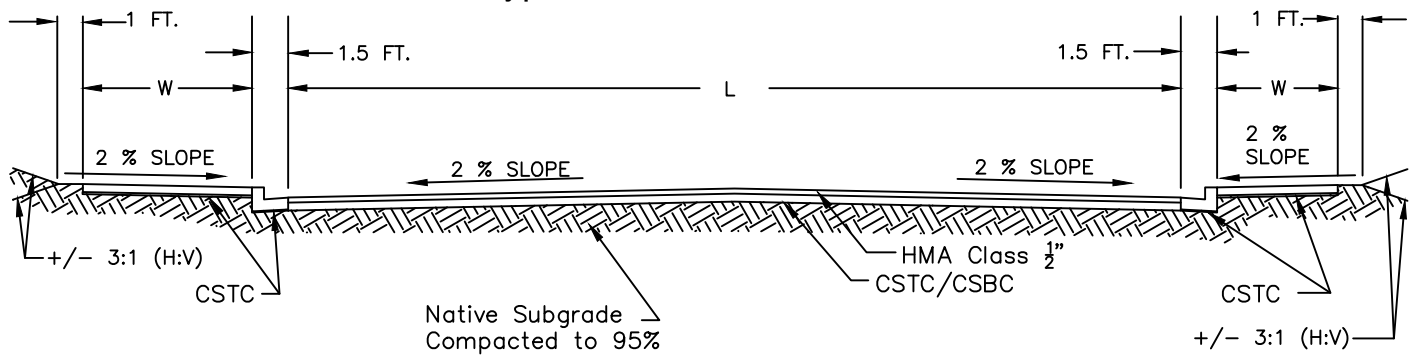
City of Quincy Washington - Standard Drawings

Scale: NTS

Date: 9/5/2022

AS-2

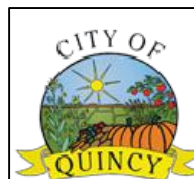
Typical Street Cross Section



	Major Arterial Street	Secondary Arterial Street	Access/Residential Street
Hot Mix Asphalt Width	60 Feet	50 Feet	45 Feet Parking 30 Feet No Parking
Hot Mix Asphalt Thickness	0.25 Feet	0.25 Feet	0.25 Feet
CSTC Thickness	0.25 Feet	0.25 Feet	0.25 Feet
CSBC Thickness	0.50 Feet	0.50 Feet	0.25 Feet
Sidewalk Width "W"	5 Feet	5 Feet	5 Feet
Radius to Back of Curb at Intersection	30 Feet	30 Feet	20 Feet
Right of Way Width	80 Feet	60 Feet	60 Feet
Minimum Curve Radius	500 Feet	300 Feet	100 Feet
Min. to Max. Grade	0.5% to 10%	0.5% to 12%	0.5% to 12%

NOTES:

1. FOR SIDEWALK & DRIVEWAY CONSTRUCTION SEE STANDARD DRAWINGS R-4 & R-6.
2. FOR CURB CONSTRUCTION SEE STANDARD DRAWING R-3.
3. ALL STREETS SHALL HAVE A MINIMUM CENTERLINE SLOPE OF 0.5%.
4. ALL CONSTRUCTION & MATERIALS SHALL MEET THE STANDARD SPECIFICATIONS & BE APPROVED BY THE CITY OF QUINCY.



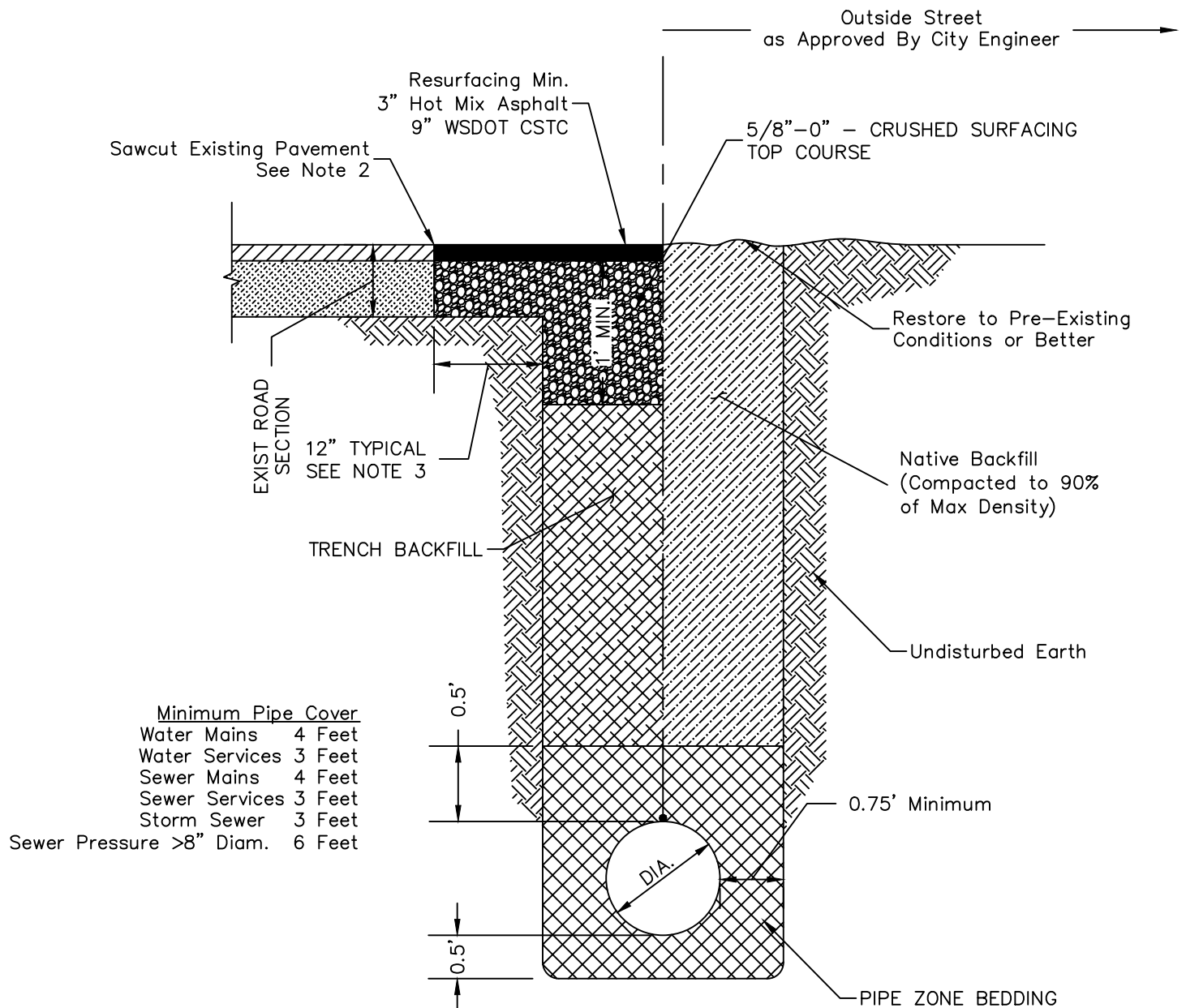
Typical Street Standards

City of Quincy Washington - Standard Drawings

Scale: NTS

Date: 9/05/2022

R - 1



NOTES:

1. THESE TRENCH BACKFILL REQUIREMENTS APPLY TO ALL PUBLIC UTILITY PIPES.
2. SAWCUT EXISTING HMA PAVEMENT FULL DEPTH.
3. 12" FOR TRENCHES WIDER THAN 12". 6" FOR TRENCHES LESS THAN 12".
4. ALL CUT EDGES OF HMA SHALL BE SEALED WITH CSS-1 EMULSIFIED ASPHALT OR EQUIVALENT.



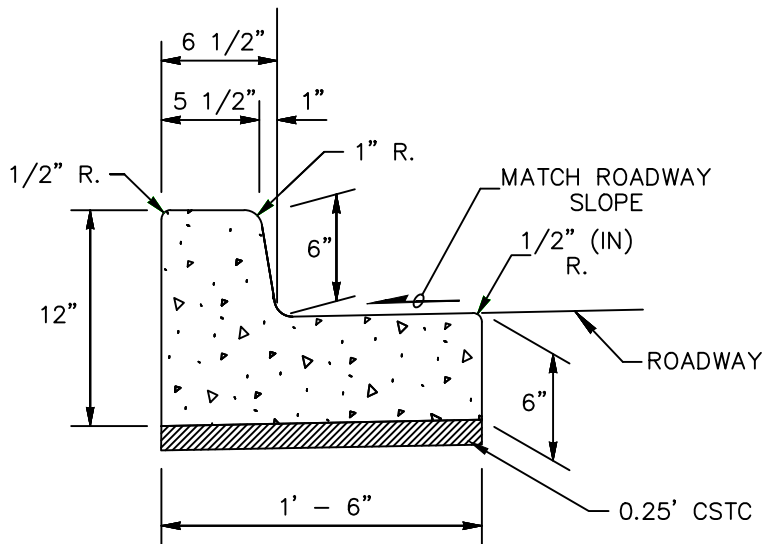
Trenching/Bedding/Surfacing Repair

City of Quincy Washington - Standard Drawings

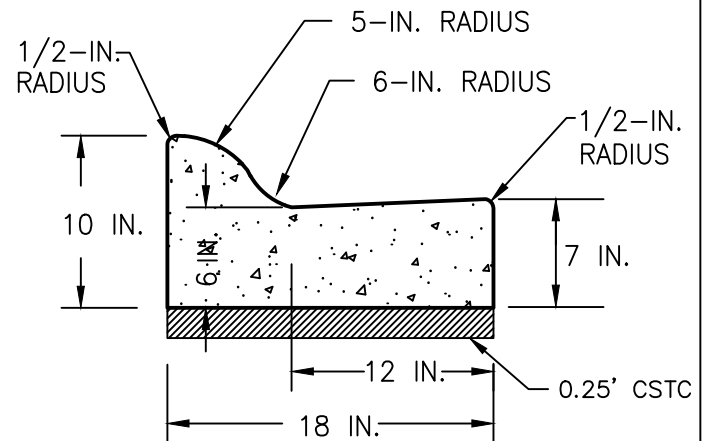
Scale: NTS

Date: 9/05/2022

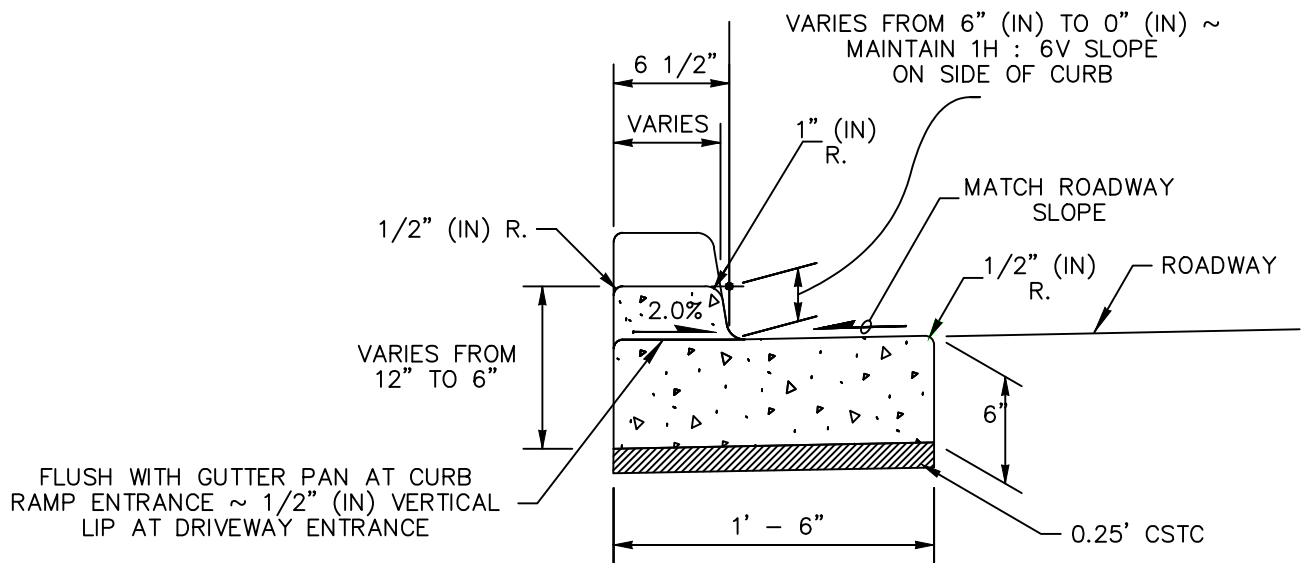
R - 2



CEMENT CONCRETE CURB & GUTTER



ROLLED CURB CROSS SECTION



DEPRESSED CURB AND GUTTER SECTION

AT CURB RAMPS AND
DRIVEWAY ENTRANCES

NOTES:

1. EXPANSION JOINT MATERIAL SHALL BE $\frac{3}{8}$ " THICK PREMOLDED JOINT FILLER FULL THICKNESS OF CONCRETE SPACING.
2. FORMS & SUB-GRADE INSPECTION BY THE CITY REQUIRED PRIOR TO POURING CONCRETE.
3. TOP, FACE & GUTTER SHALL BE BROOM FINISHED PARALLEL TO THE ROADWAY.
4. AT HEAVY TRUCK DRIVEWAY LOCATIONS, REBAR AS REQUIRED BY CITY ENGINEER.



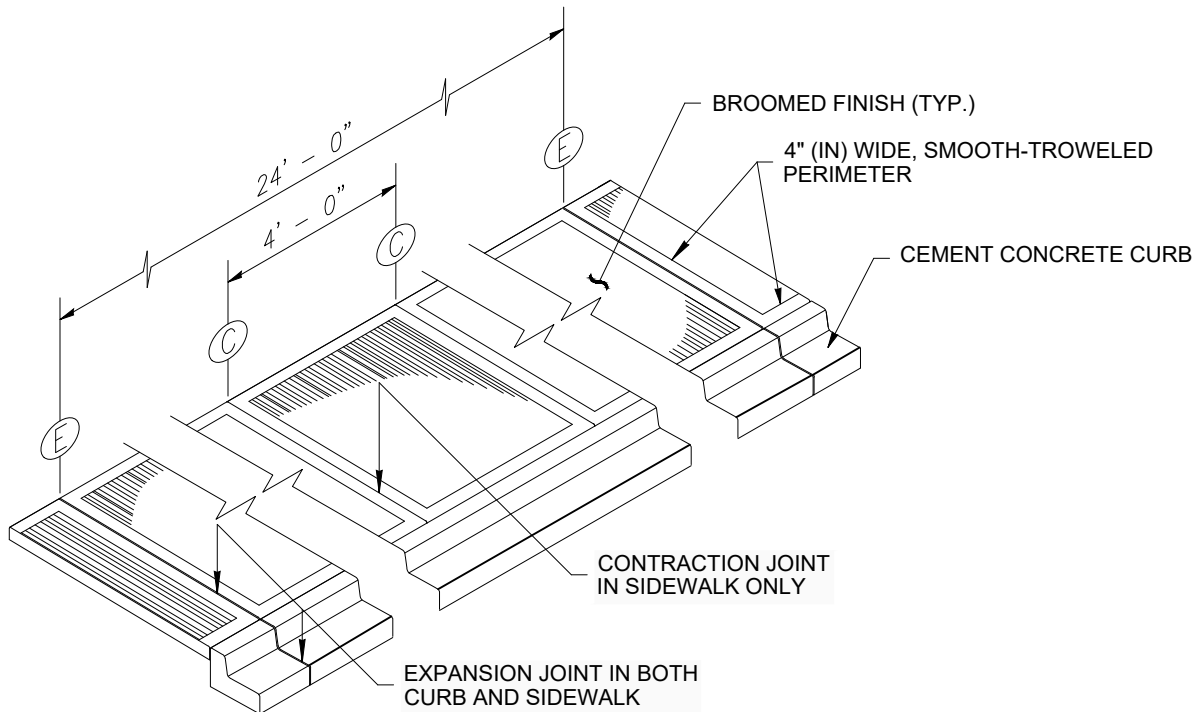
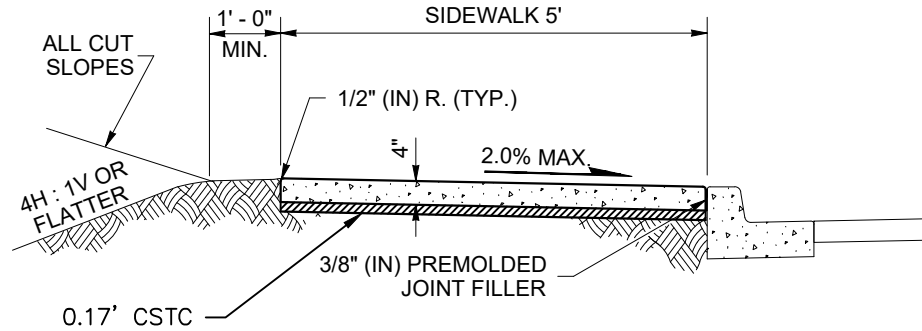
Concrete Curb & Gutter

City of Quincy Washington - Standard Drawings

Scale: NTS

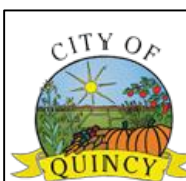
Date: 9/05/2022

R - 3



NOTES:

1. EXPANSION JOINT MATERIAL SHALL BE $\frac{3}{8}$ " THICK ASPHALT SATURATED FELT TO FULL DEPTH OF CONCRETE PLACED AT 24' O.C. AND AT POINTS OF TANGENCY ON CURVES, CATCH BASINS, EDGE OF ALLEYS, DRIVEWAYS & CURB RAMPS.
2. V-GROVE MARKS SHALL BE $\frac{1}{8}$ " DEEP AND $\frac{1}{4}$ " WIDE PLACED AT 4' O.C.
3. ALL JOINTS SHALL BE CLEAN AND EDGED TO A $\frac{1}{4}$ " RADIUS. JOINTS SHALL BE FLUSH WITH THE FINISHED SURFACE.
4. SIDEWALK SHALL MEET ADA REQUIREMENTS & SHALL HAVE NO LESS THAN A 4' WIDTH AS A MINIMUM PEDESTRIAN ACCESSIBLE ROUTE FREE OF VERTICAL & HORIZONTAL OBSTRUCTIONS. GRATINGS, ACCESS COVERS, JUNCTION BOXES, CABLE VAULTS, PULL BOXES & OTHER APPURTENANCES WITHIN THE SIDEWALK SHALL HAVE A SLIP RESISTANT SURFACE, BE FLUSH WITH SIDEWALK AND MATCH GRADE OF THE SIDEWALK.
5. FORMS & SUB-GRADE INSPECTION BY THE CITY REQUIRED PRIOR TO POURING CONCRETE.
6. SIDEWALK SHALL BE 6" THICK IN LOCATIONS WITH ROLLED CURB & GUTTER.



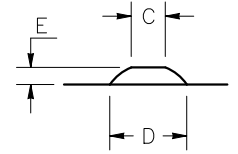
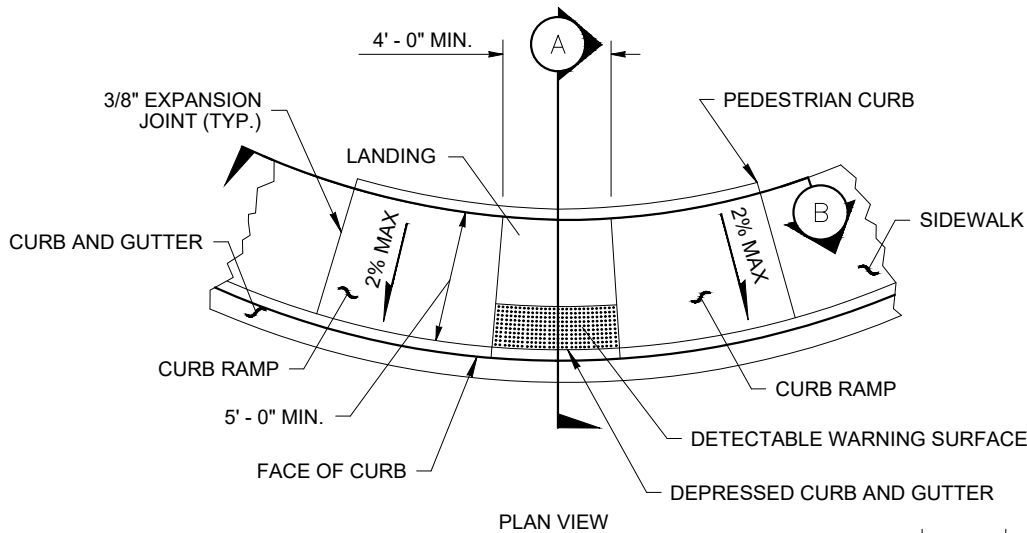
Concrete Sidewalk

City of Quincy Washington - Standard Drawings

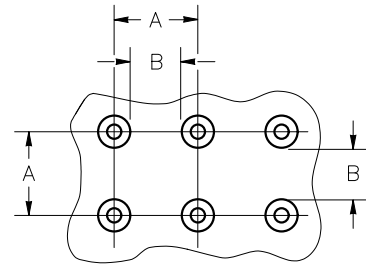
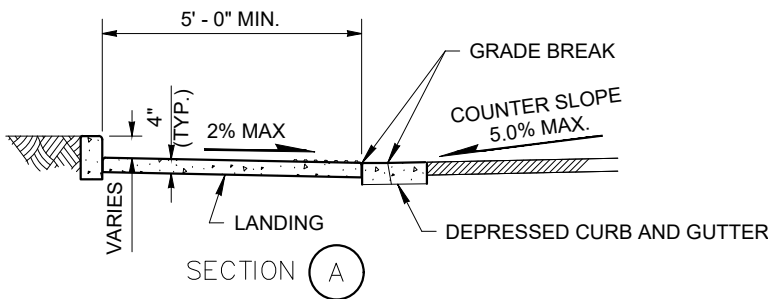
Scale: NTS

Date: 9/05/2022

R - 4



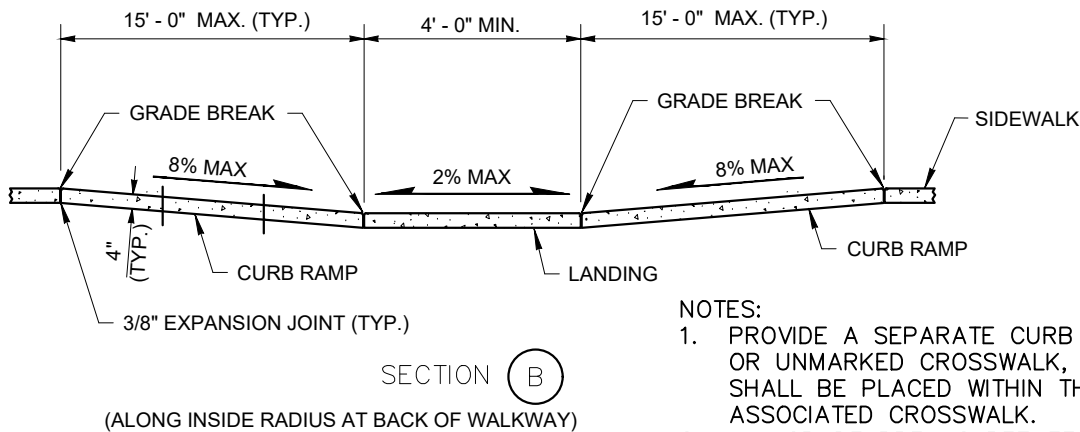
TRUNCATED DOME



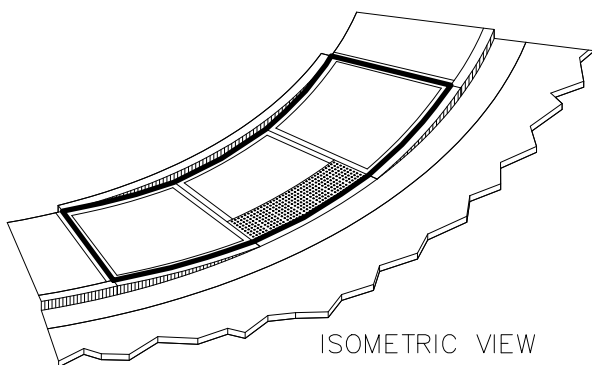
TRUNCATED DOME SPACING

	MIN.	MAX.
A	1.60"	2.40"
B	0.65"	—
C	0.45"	0.90"
D	0.9"	1.40"
E	0.2"	0.2"

TRUNCATED DOME DETAILS



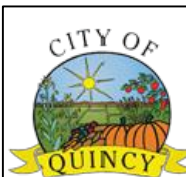
(ALONG INSIDE RADIUS AT BACK OF WALKWAY)



ISOMETRIC VIEW

NOTES:

1. PROVIDE A SEPARATE CURB RAMP FOR EACH MARKED OR UNMARKED CROSSWALK, CURB RAMP LOCATION SHALL BE PLACED WITHIN THE WIDTH OF THE ASSOCIATED CROSSWALK.
2. ALL GRADE BREAKS BETWEEN THE TWO ADJACENT SURFACE PLANES SHALL BE FLUSH.
3. DO NOT PLACE GRATINGS, ACCESS COVERS, JUNCTION BOXES, CABLE VAULTS, PULL BOXES & OTHER APPURTENANCES WITHIN THE CURB RAMP AND/OR LANDING AREA.
4. CURB RAMP & LANDING AREA SHALL HAVE A BROOM FINISH.
5. FORMS & SUB-GRADE INSPECTION BY THE CITY REQUIRED PRIOR TO POURING CONCRETE.
6. AT HEAVY TRUCK DRIVEWAY LOCATIONS, REBAR AS REQUIRED BY CITY ENGINEER.



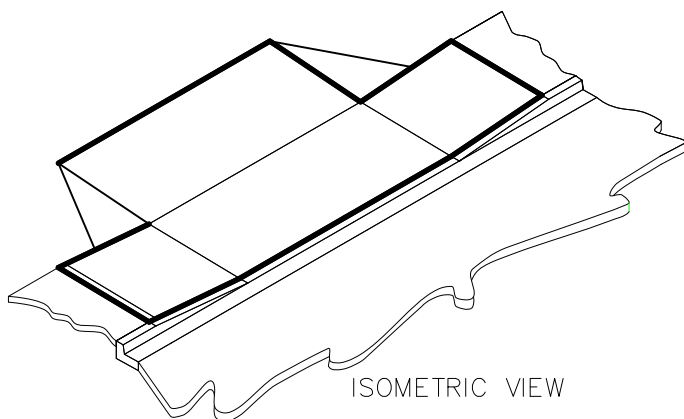
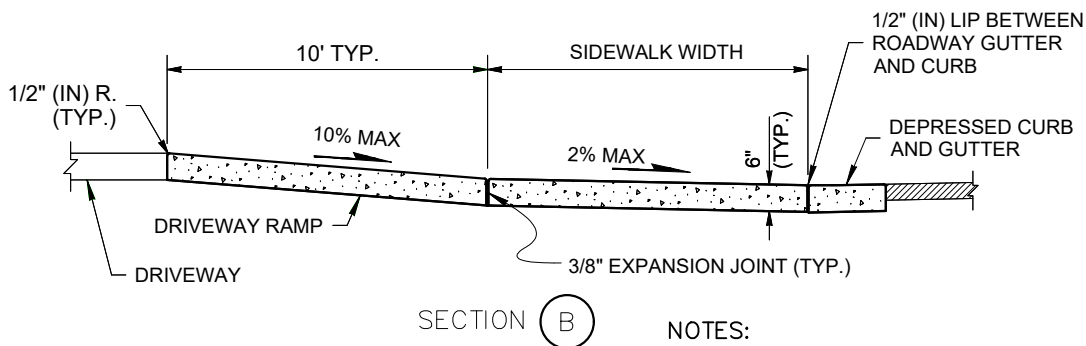
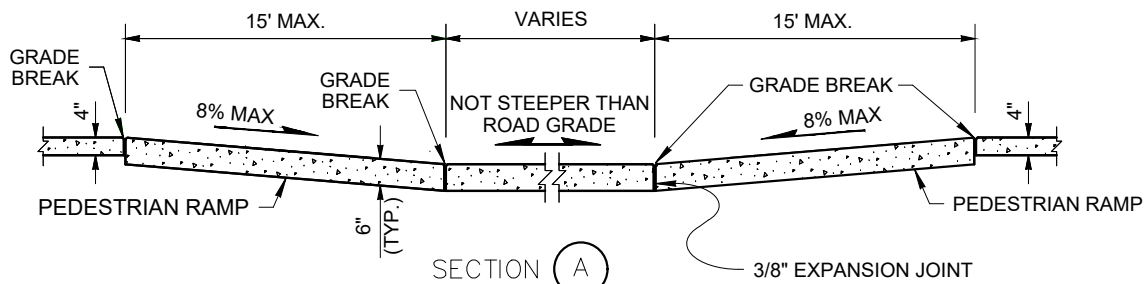
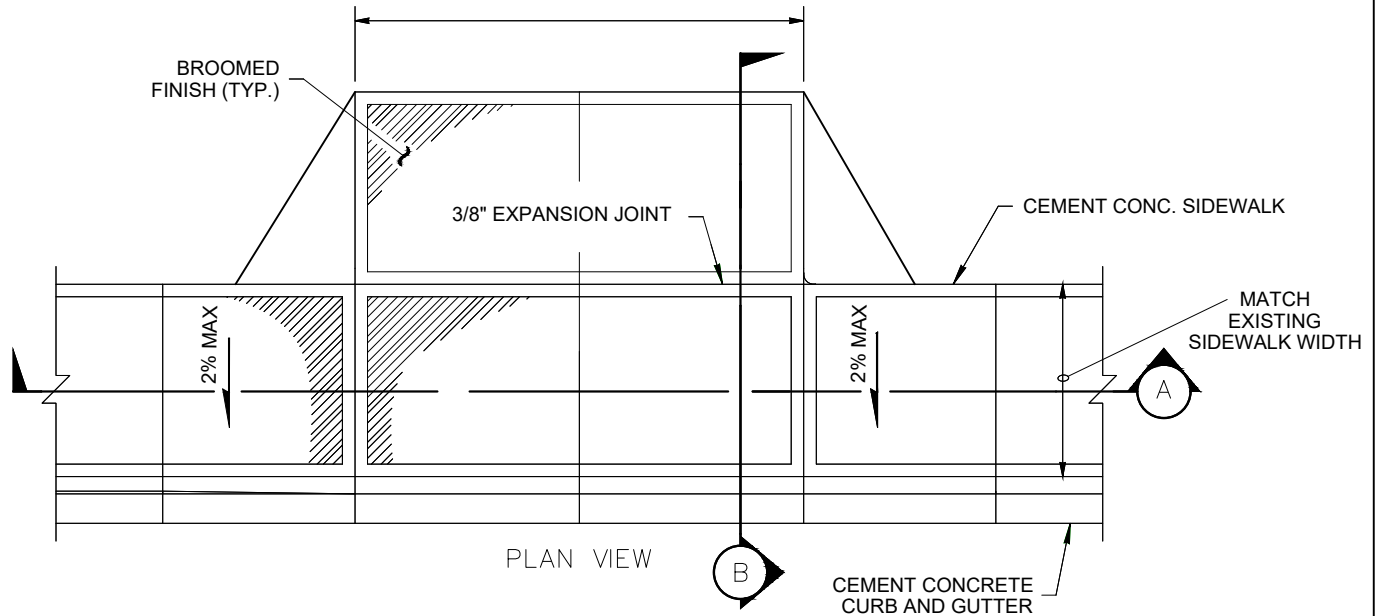
Sidewalk Curb Ramp

City of Quincy Washington - Standard Drawings

Scale: NTS

Date: 9/05/2022

R - 5



NOTES:

1. ALL DRIVEWAY RAMPS SHALL USE CL. 4000 CONCRETE PER STANDARD SPEC 8-06.3
2. ALL GRADE BREAKS BETWEEN THE TWO ADJACENT SURFACE PLANES SHALL BE FLUSH.
3. DO NOT PLACE GRATINGS, ACCESS COVERS, JUNCTION BOXES, CABLE VAULTS, PULL BOXES & OTHER APPURTENANCES WITHIN THE DRIVEWAY RAMP AND/OR AREA.
4. DRIVEWAY RAMP & AREA SHALL HAVE A BROOM FINISH.
5. FORMS & SUB-GRADE INSPECTION BY THE CITY REQUIRED PRIOR TO POURING CONCRETE.



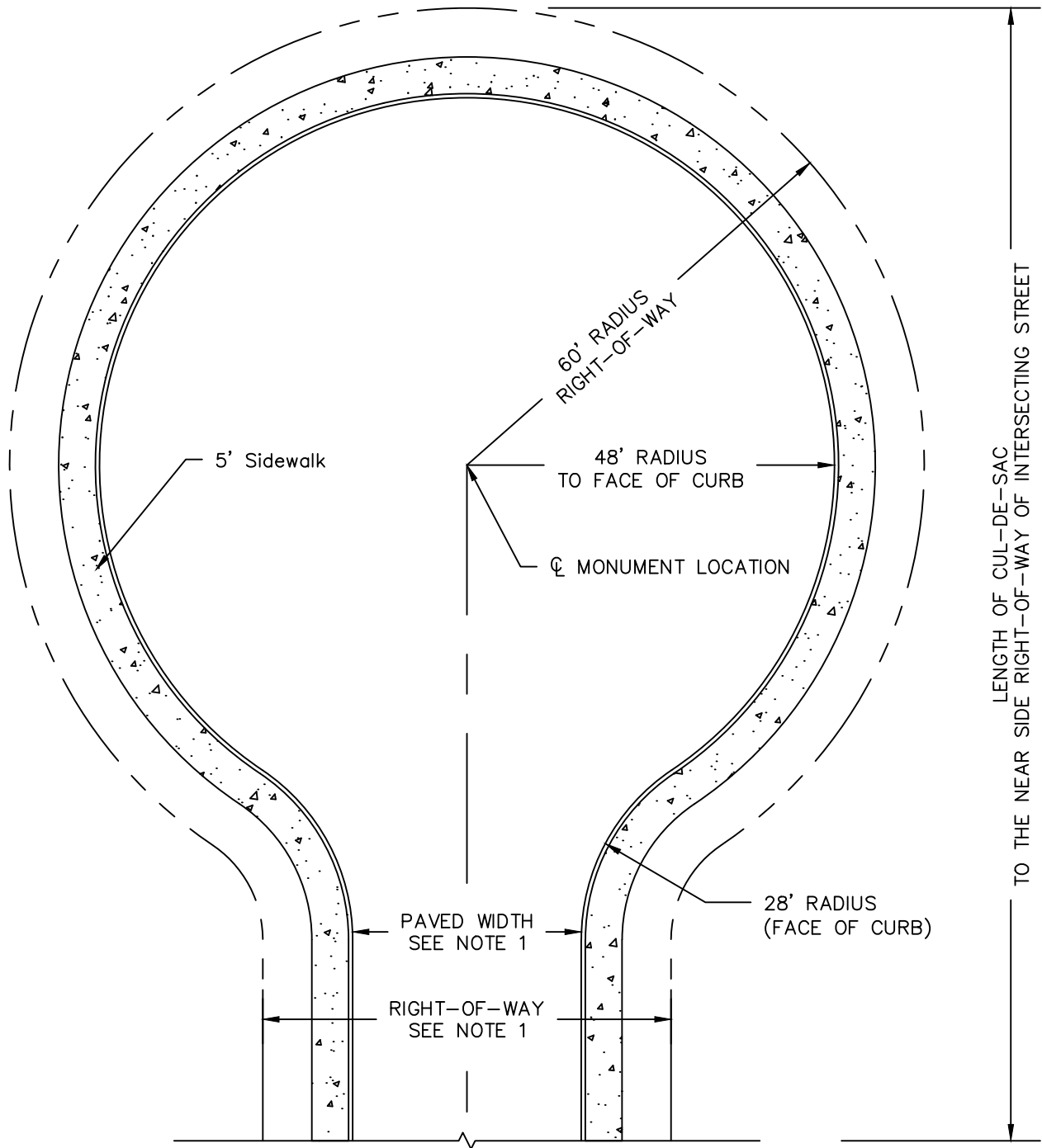
Concrete Driveway

City of Quincy Washington - Standard Drawings

Scale: NTS

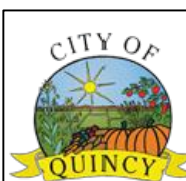
Date: 9/05/2022

R - 6



NOTES:

1. SEE CITY STANDARD R-1 FOR RIGHT-OF-WAY AND PAVED WIDTH STANDARDS.
2. PAVED WIDTH IS MEASURED TO FACE OF CURB.
3. LENGTH OF CUL-DE-SAC SHALL NOT EXCEED 600 FEET FROM INTERSECTION OR AS APPROVED BY CITY ENGINEER.



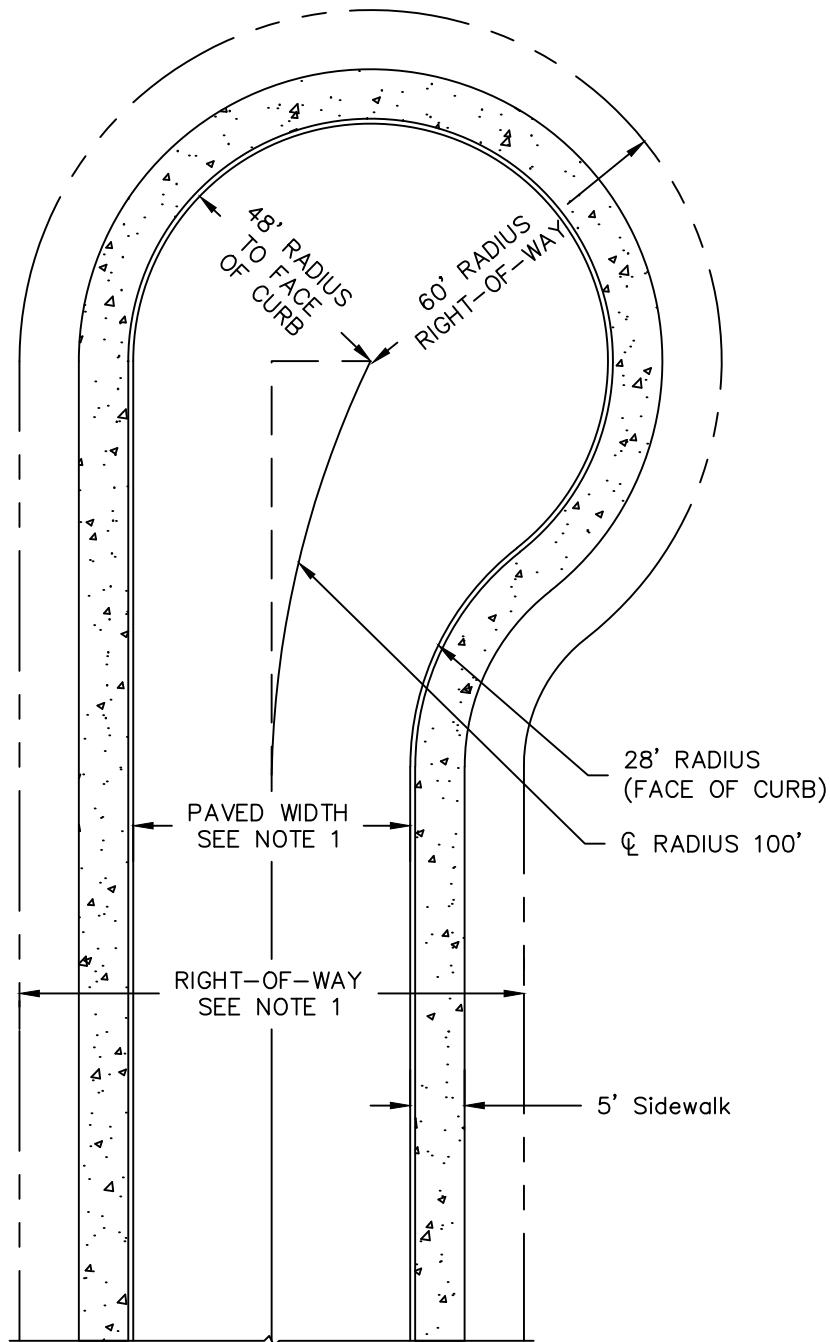
Standard Cul-De-Sac

City of Quincy Washington - Standard Drawings

Scale: NTS

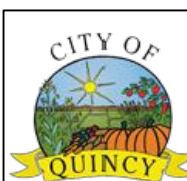
Date: 9/05/2022

R - 7



NOTES:

1. SEE CITY STANDARD R-1 FOR RIGHT-OF-WAY AND PAVED WIDTH STANDARDS.
2. PAVED WIDTH IS MEASURED TO FACE OF CURB.
3. LENGTH OF CUL-DE-SAC SHALL NOT EXCEED 600 FEET FROM INTERSECTION OR AS APPROVED BY CITY ENGINEER.



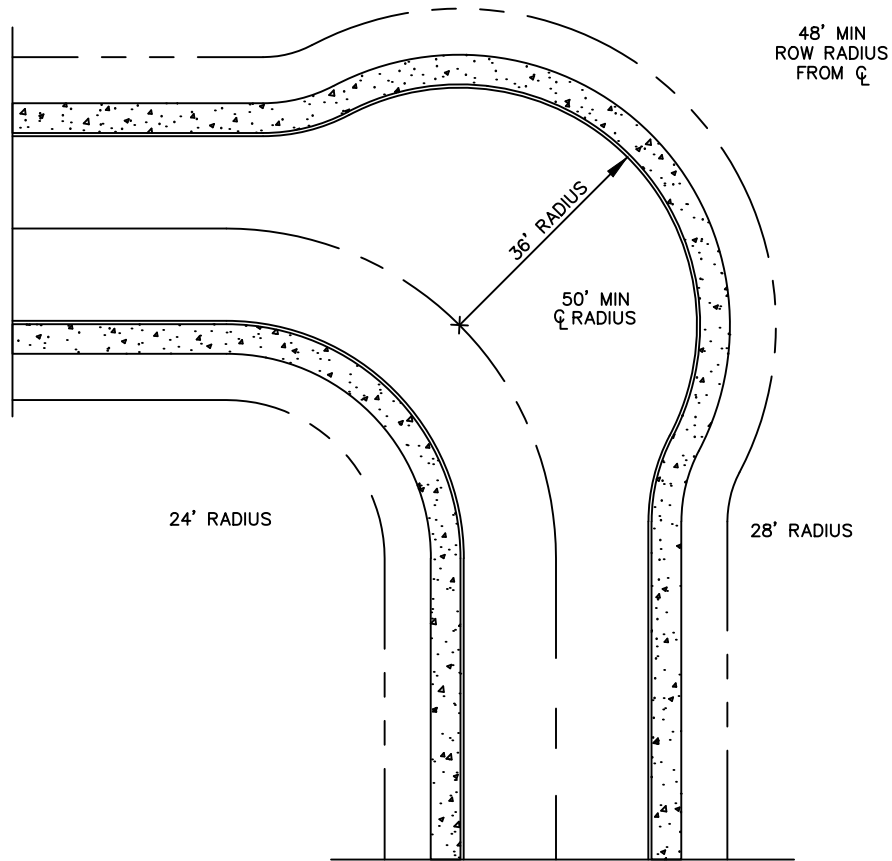
Offset Cul-De-Sac

City of Quincy Washington - Standard Drawings

Scale: NTS

Date: 9/05/2022

R - 8



NOTES

1. EYEBROWS ALLOWED ON LOCAL STREETS ONLY AND AS APPROVED BY CITY ENGINEER.
2. A STANDARD CATCHBASIN SHALL BE LOCATED ALONG THE EYEBROW CURBLINE FOR STREET STORM DRAINAGE.
3. PAVED WIDTH IS MEASURED FROM FACE OF CURB.



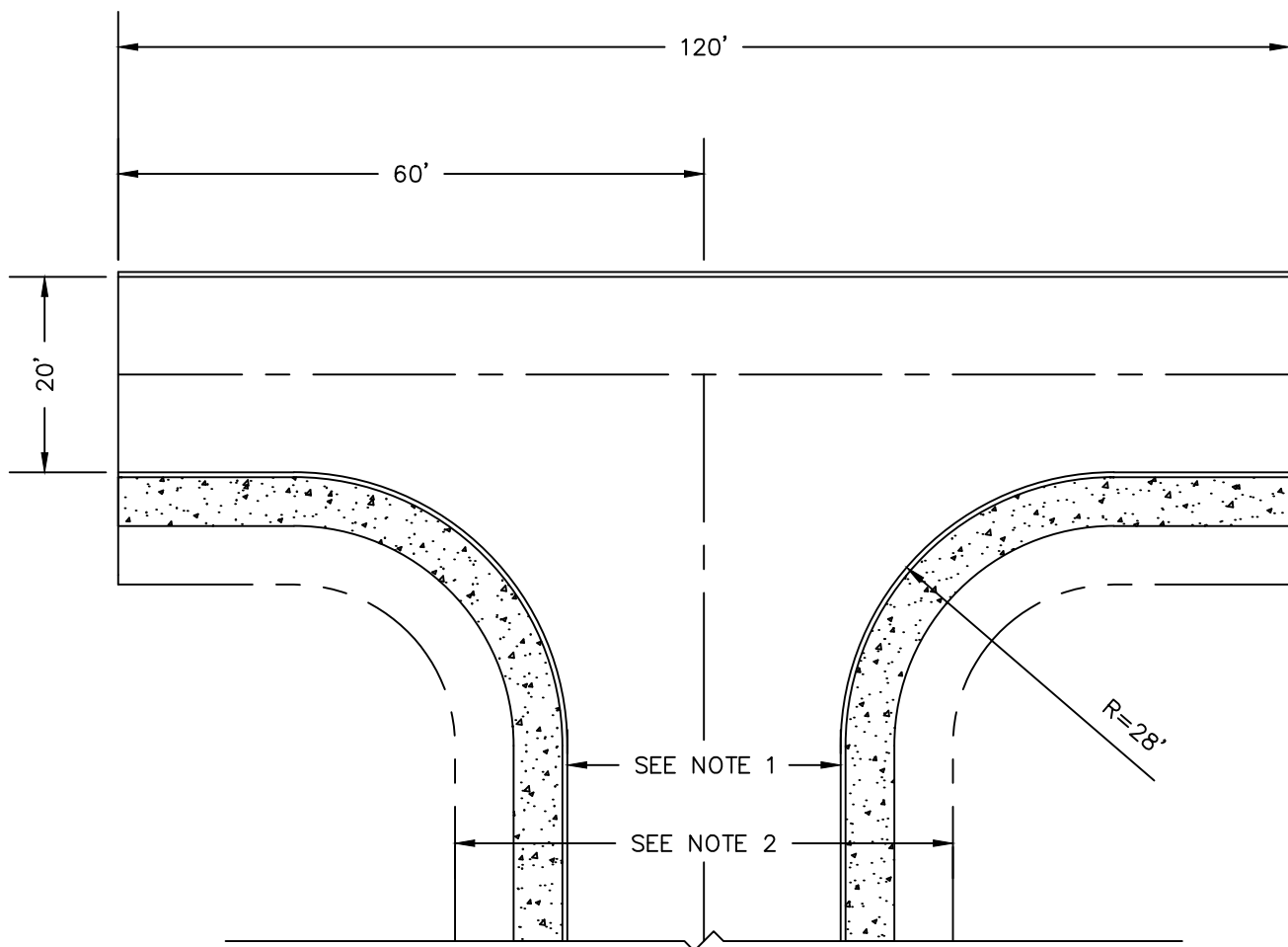
LOCAL STREET EYEBROW

City of Quincy Washington - Standard Drawings

Scale: NTS

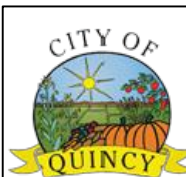
Date: 9/05/2022

R - 9



NOTES:

1. SEE CITY STANDARD R-1 FOR RIGHT-OF-WAY AND PAVED WIDTH STANDARDS.
2. CURB HEIGHT NOT EXCEED 6-INCHES
3. "NO PARKING/FIRE LANE/TOW ZONE" SIGN LOCATIONS TO BE DETERMINED BY THE CITY ENGINEER.
4. DRAINAGE IS REQUIRED TO PREVENT PONDING.
5. AREA OF TURNAROUND IS TO BE PERMANENTLY MAINTAINED, CLEARED AND UNOBSTRUCTED AT ALL TIMES.
6. USE OF THIS TURNAROUND AT ANY SPECIFIC SITE MUST BE APPROVED BY THE CITY ENGINEER.



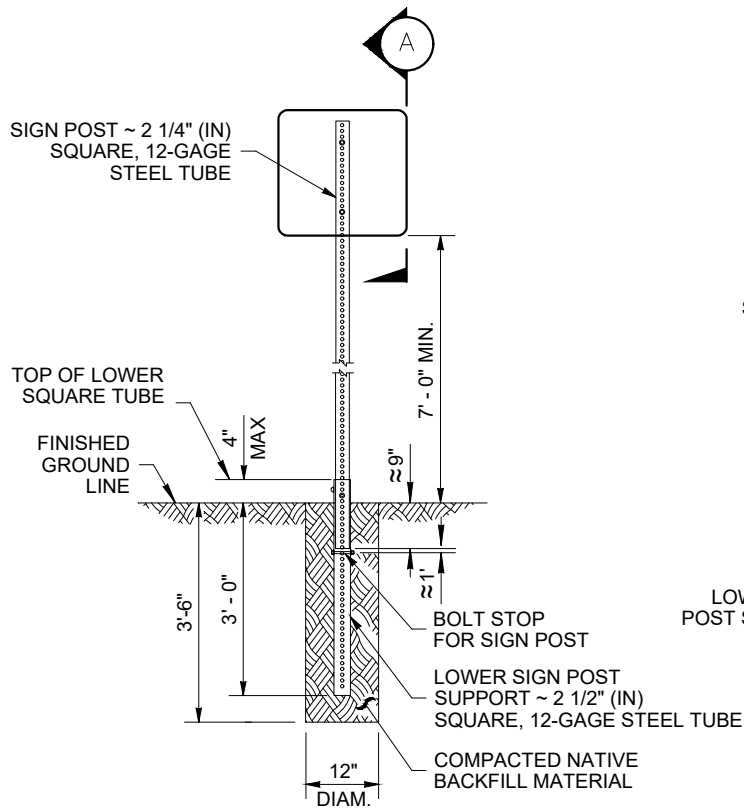
HAMMERHEAD TURNAROUND

City of Quincy Washington - Standard Drawings

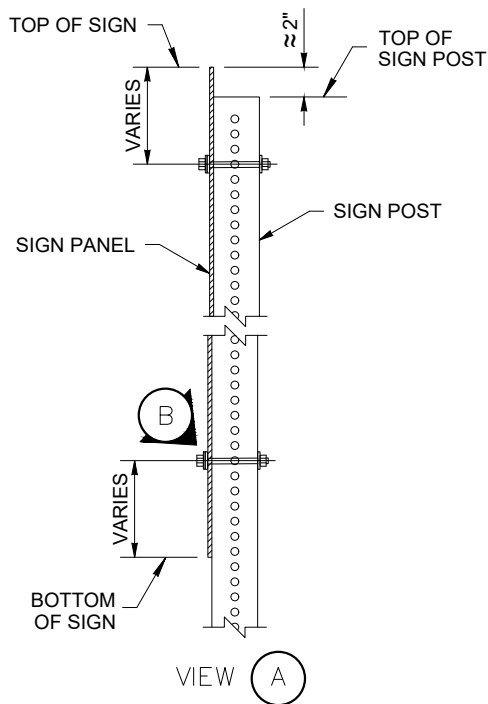
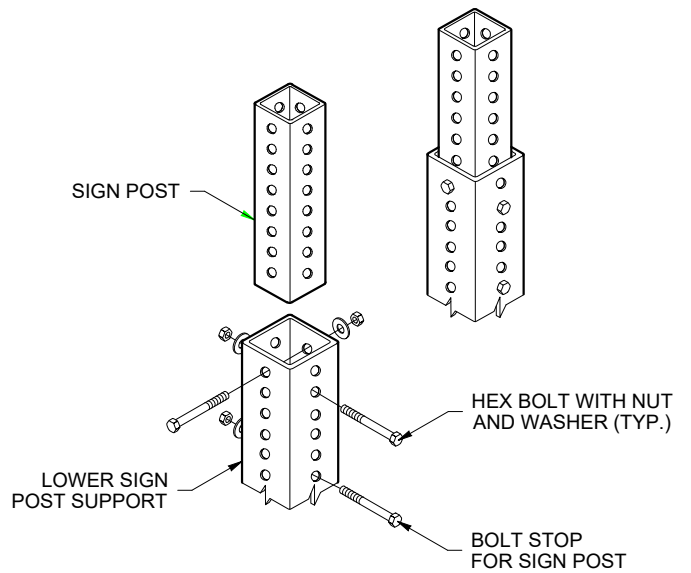
Scale: NTS

Date: 9/05/2022

R - 10



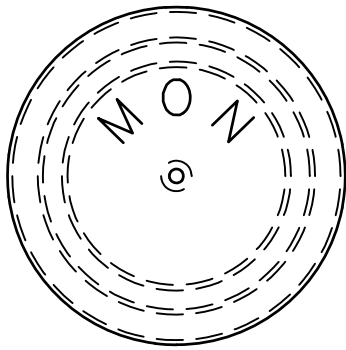
ELEVATION
SIGN SUPPORT



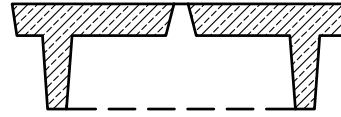
NOTES:

1. PERFORATED SQUARE STEEL POST SHALL MEET THE REQUIREMENTS OF STANDARD SPECIFICATION, SECTION 9-06.
2. USE ONLY BASE CONNECTION MANUFACTURER SUPPLIED HARDWARE THAT MEETS THE REQUIREMENTS OF STANDARD SPECIFICATION SECTIONS 9-06 & 9-28.

	Sign Installation	
	City of Quincy Washington - Standard Drawings	
	Scale: NTS	R - 1 1
	Date: 9/05/2022	

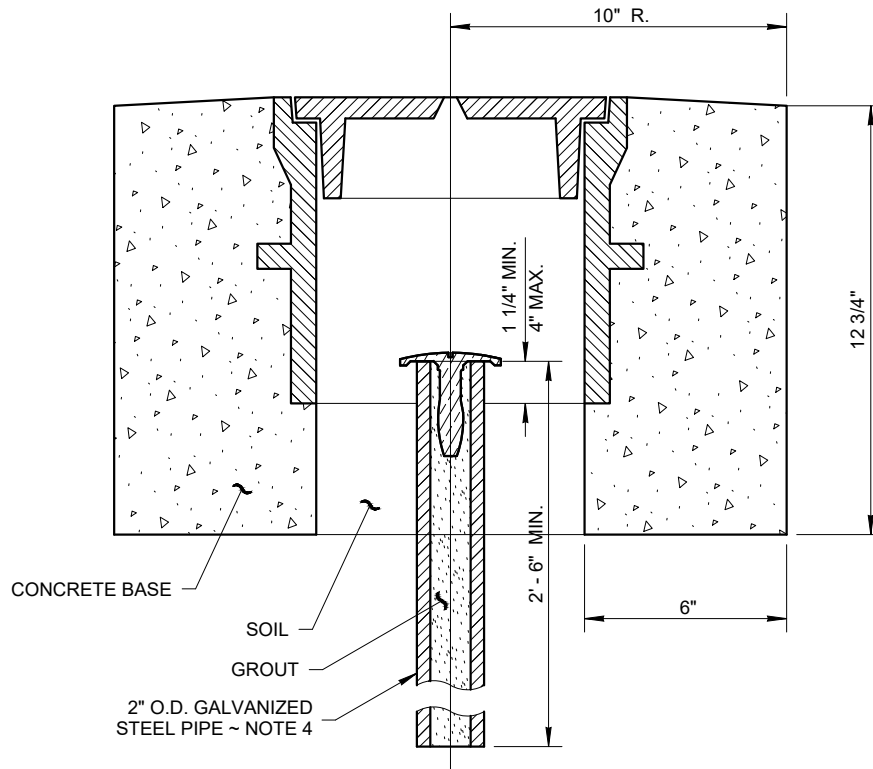


PLAN VIEW



CROSS SECTION VIEW

MONUMENT COVER



NOTES:

1. PERMANENT CONTROL MONUMENTS SHALL BE INSTALLED AT THE CENTERLINE INTERSECTIONS OF ALL ROADS WITHIN THE SUBDIVISION & AT THE BEGINNING AND END OF CURVES ON CENTERLINES.
2. WASHINGTON LICENSED PROFESSIONAL LAND SURVEYOR TO REFERENCE MONUMENT LOCATION FOR INSTALLATION AND PUNCH CAP AFTER INSTALLATION. THE MONUMENT CAP SHALL BE SET IN SUCH A FASHION TO ENSURE THAT THE PUNCH MARK IS ON THE MONUMENT CAP.



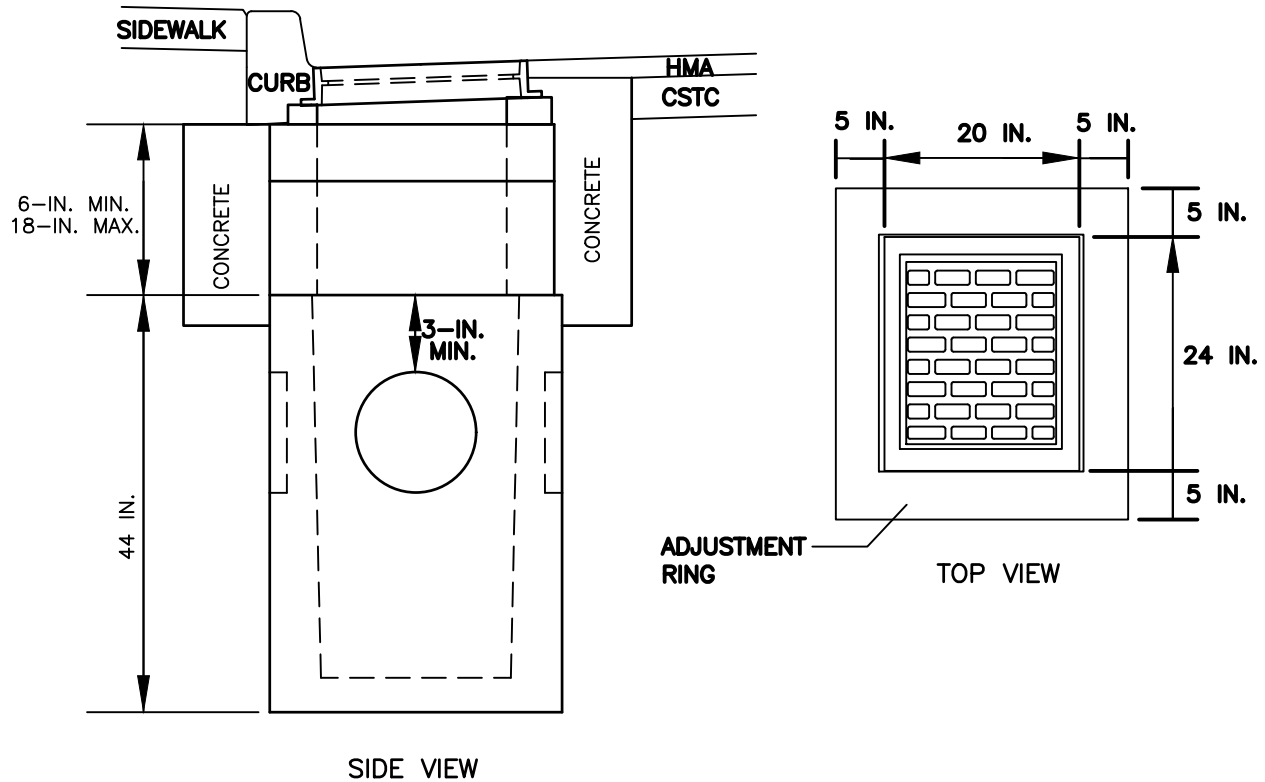
MONUMENT CASE & COVER

City of Quincy Washington - Standard Drawings

Scale: NTS

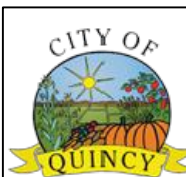
Date: 9/05/2022

R - 12



NOTES:

1. CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C 478 (AASHTO M 199) AND ASTM C 890.
2. PRECAST BASES SHALL BE FURNISHED WITH FOUR CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A MINIMUM WALL THICKNESS OF 2 INCHES.
3. THE CATCH BASIN SHALL BE INSTALLED SO THE LONG SIDE (34 INCHES) IS PARALLEL WITH THE CURB. THE DISTANCE FROM THE CENTER LINE OF THE CATCH BASIN TO THE BACK EDGE OF THE CURB IS 18 INCHES FOR A 30-INCH BY 34-INCH CATCH BASIN.
4. AN ENTRY COUPLING OR SAND COLLAR IS REQUIRED FOR PVC PIPE WHERE THE PIPE PENETRATES THE CATCH BASIN BASE.
5. MAXIMUM DEPTH FROM PIPE INVERT TO FINISH GRADE IS 5 FEET.
6. MINIMUM COVER FROM TOP OF PIPE TO FINISH GRADE UNDER SIDEWALKS IS 2 FEET. MINIMUM COVER FROM TOP OF PIPE TO FINISH GRADE UNDER ROADWAYS IS 3 FOOT FOR PVC PIPE AND 18 INCHES FOR DUCTILE IRON PIPE.
7. ADJUSTMENT RINGS AND THE CATCH BASIN GRATE SHALL BE WITHIN ONE INCH OF THE VERTICAL ALIGNMENT OF THE CATCH BASIN. PLACE CONCRETE AROUND OUTSIDE OF ADJUSTMENT RINGS AND GRATE TO PREVENT INFILTRATION OR EXFILTRATION.



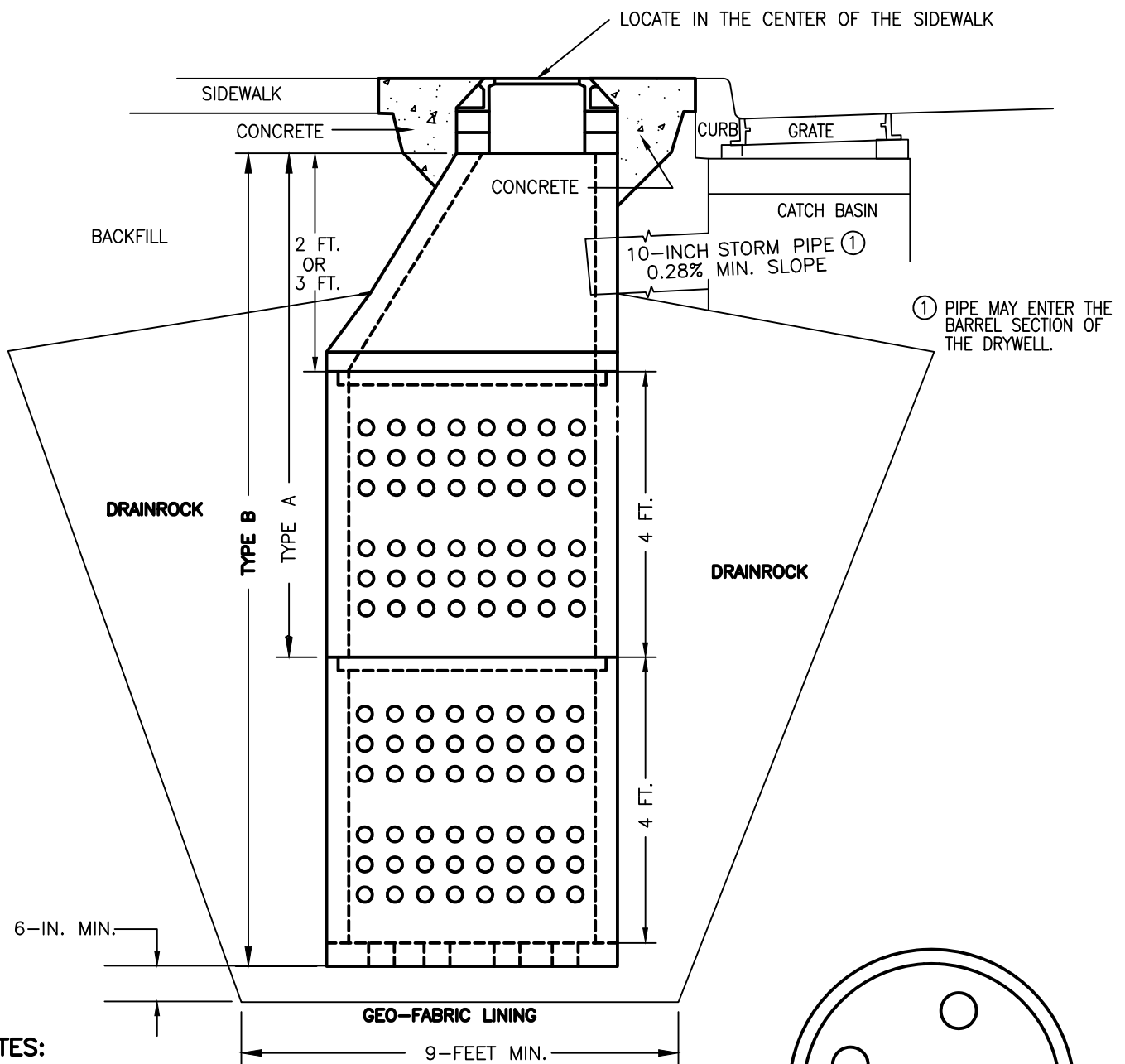
CATCH BASIN TYPE 1

City of Quincy Washington - Standard Drawings

Scale: NTS

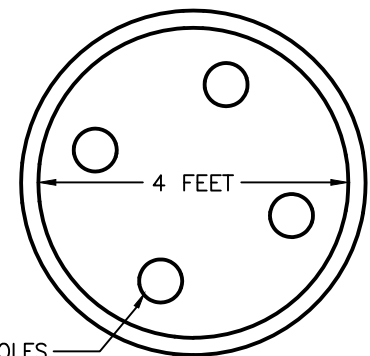
Date: 9/05/2022

SD-1



NOTES:

1. MINIMUM OF ONE 4-INCH ADJUSTMENT RING WITH A MAXIMUM OF 16 INCHES OF ADJUSTMENT.
2. PLACE CONCRETE AROUND OUTSIDE OF ADJUSTMENT RINGS AND RING TO PREVENT INFILTRATION/EXFILTRATION.
3. PRECAST CONE SECTION MAY BE CONCENTRIC OR ECCENTRIC.
4. GROUT SEAL PVC PIPE WHERE THE PIPE PENETRATES THE DRYWELL.
5. DRYWELLS NOT IN SIDEWALK SHALL BE PLACED IN A 6-FT. BY 6-FT. BY 6-IN. CONCRETE PAD AT FINISH GRADE.
6. STORM PIPE SHALL BE A MINIMUM OF 18 FEET IN LENGTH.



PRECAST BASE DETAIL



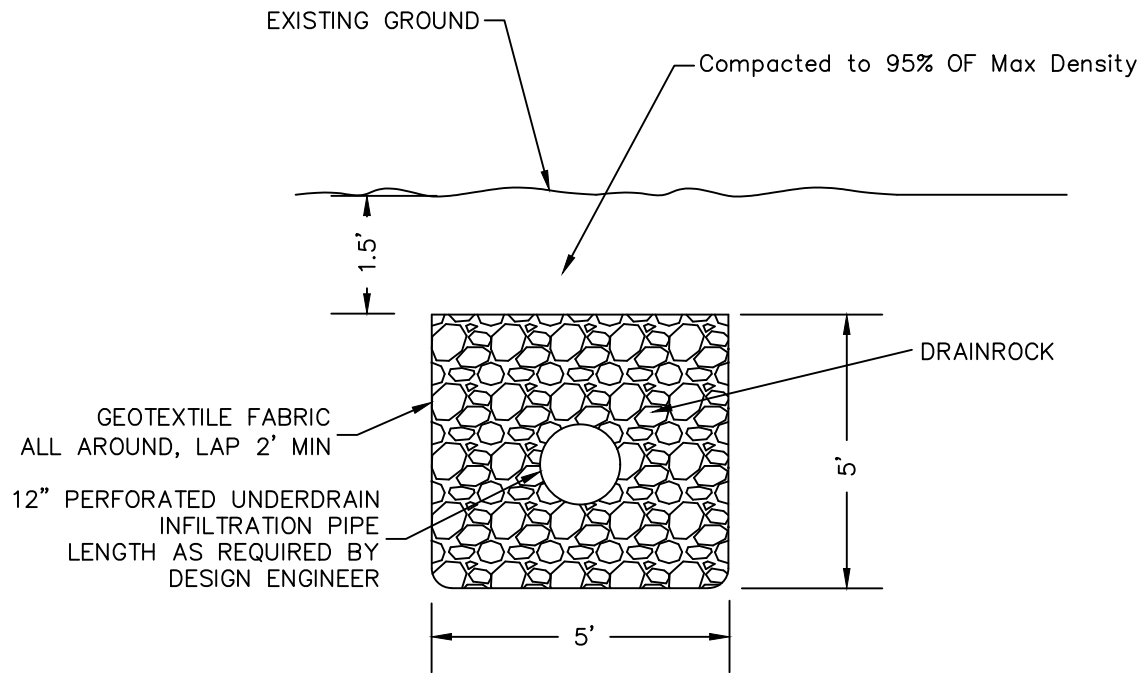
CONCRETE DRYWELL

City of Quincy Washington - Standard Drawings

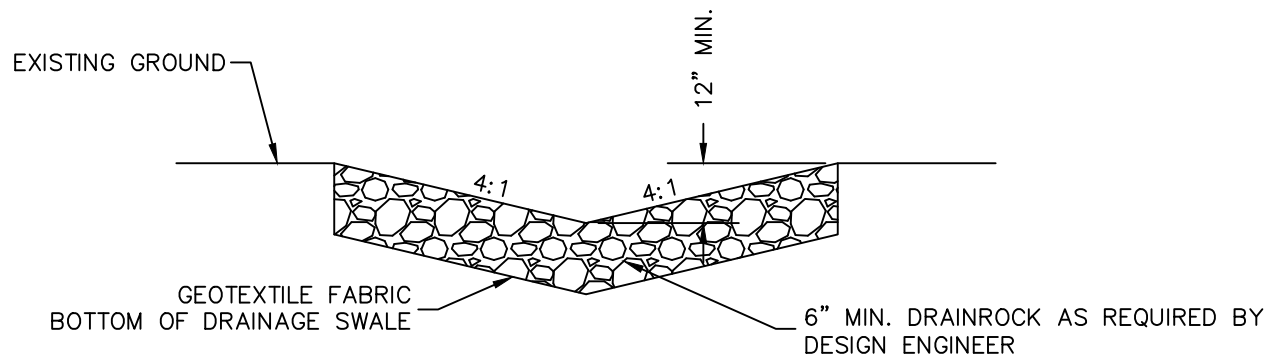
Scale: NTS

Date: 9/05/2022

SD-2

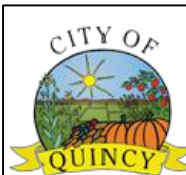


INFILTRATION TRENCH



DRAINAGE SWALE WIDTH AS REQUIRED BY DESIGN ENGINEER

DRAINAGE SWALE



INFILTRATION TRENCH

City of Quincy Washington - Standard Drawings

Scale: NTS

Date: 9/05/2022

SD-3

LOCATE FRAME AND COVER
OVER LEDGE OF AT LEAST
12" IN WIDTH

8" MIN. BETWEEN
KNOCKOUTS

MAXIMUM 27" FROM TOP OF FIRST
STEP TO TOP OF CASTING

STANDARD FRAME AND COVER OR
WATERTIGHT FRAME AND COVER. SET
FRAME IN NON-SHRINK GROUT

NOTES:

1. ALL PRE-CAST MANHOLE SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478.
2. ALL JOINTS AND RUBBER GASKETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-443.
3. ALL PIPE CONNECTIONS TO MANHOLE SHALL BE WATERTIGHT. THE INSIDE JOINT SURFACE SHALL BE GROUTED.
4. PIPE CONNECTIONS OF 24" OR GREATER SHALL REQUIRE A MANHOLE AND CHANNEL DETAIL.
5. PIPE CONNECTIONS OF FOUR OR MORE MAINLINES SHALL REQUIRE A MANHOLE CONNECTION AND CHANNEL DETAIL.
6. PROVIDE A MINIMUM OF 8" OF INTACT (UNDISTURBED) MANHOLE WALL BETWEEN PIPE BREAKOUTS AS MEASURED ON THE INSIDE FACE OF THE MANHOLE.
7. BREAKOUT OF WALL FOR PIPE SHALL BE 2" MINIMUM AND 4" MAXIMUM CLEAR OF PIPE WALL.
8. THIS DETAIL LIMITED TO MAXIMUM INTERIOR DROP OF 12" FOR SANITARY CONNECTION.
9. FOR STRAIGHT THRU MANHOLES, THE INVERT ELEVATION SHALL HAVE A 0.10' OF FALL FROM THE INLET TO THE OUTLET. FOR MANHOLES WITH A BEND OR CHANGE IN DIRECTION, THE INVERT ELEVATION SHALL HAVE 0.20' OF FALL FROM THE INLET TO THE OUTLET.

GRADE RINGS (2", 4", OR 6")
MAXIMUM 12" SET IN
NON-SHRINK GROUT

STANDARD ECCENTRIC
36" CONE

48" MINIMUM

MANHOLE SECTION
(VARIABLE HEIGHT)

4" MINIMUM

MANHOLE STEPS

CONSTRUCT
CHANNEL AND MIN
12" SHELF IN FIELD

PIPE
I.D.

WATERTIGHT SEAL.

6" MINIMUM OF CSTC COMPACTED
BASE MATERIAL

SMOOTH FINISH
CHANNEL TO
3/4 VERTICAL
HEIGHT OF
PIPE



STANDARD MANHOLE

City of Quincy Washington - Standard Drawings

Scale: NTS

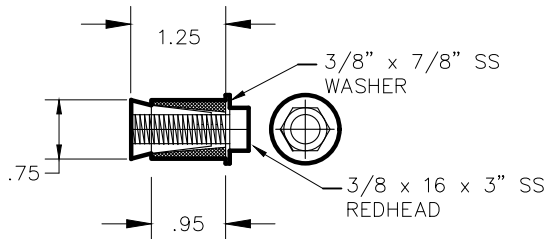
Date: 9/05/2022

SS-1

SPECIFICATIONS:

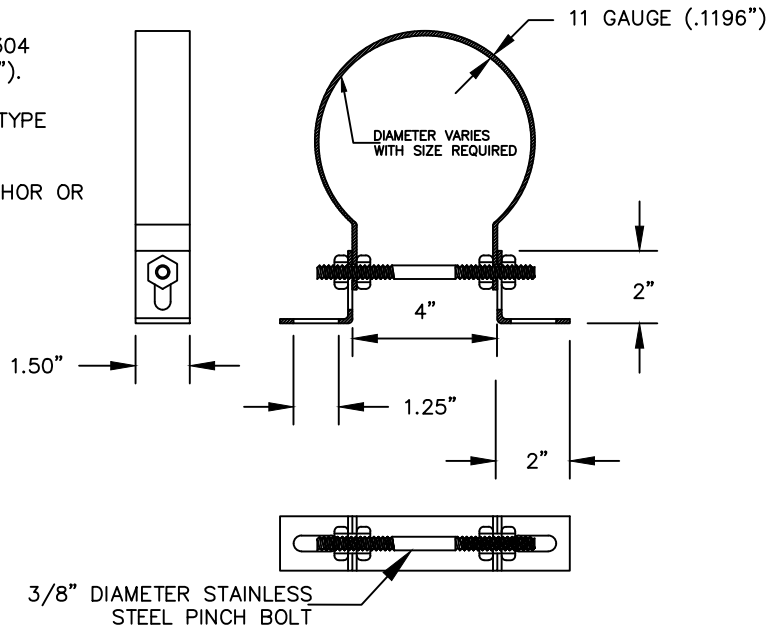
- 1) CLAMP AND BRACKETS ARE TYPE 304 STAINLESS STEEL, 11 GAUGE (.1196").
- 2) 3/8" ϕ PINCH BOLT AND NUTS IS TYPE 18-8 STAINLESS STEEL.
- 3) RELINER CLAMP/BRACKET AND ANCHOR OR APPROVED EQUIVALENTS.

3/8 x 16 x 1.25"
ANCHOR
ZINC ALLOY LEAD



ANCHOR DETAIL

N.T.S.

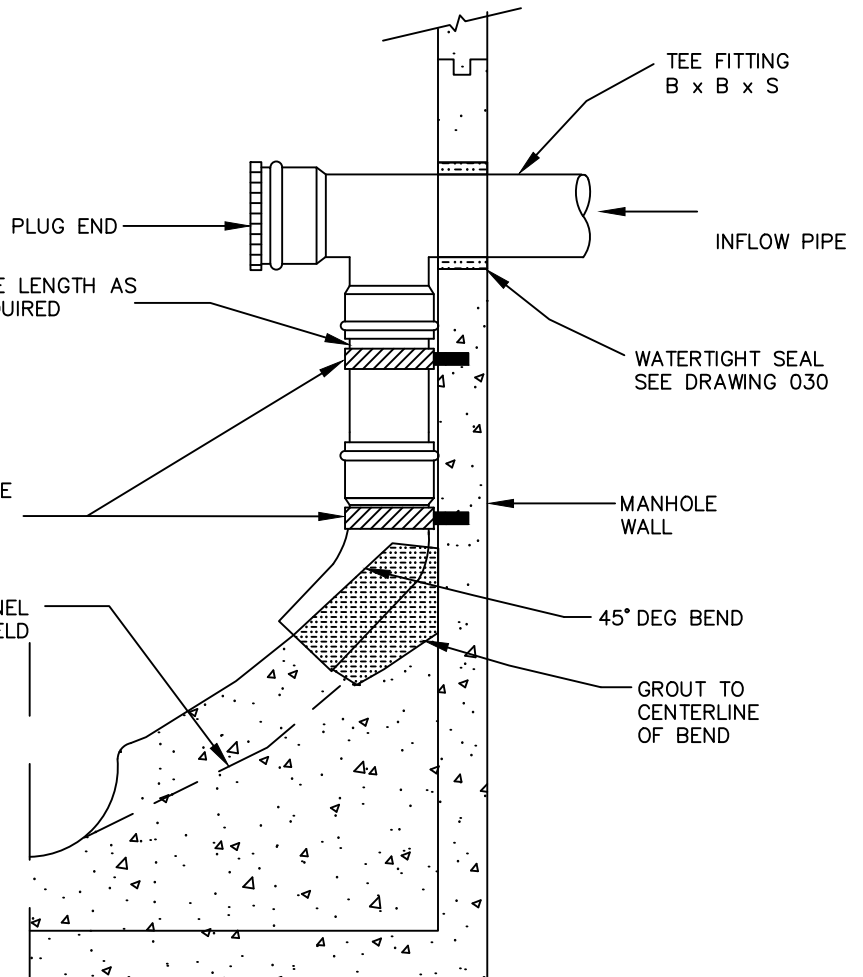


CLAMP DETAIL

N.T.S.

MINIMUM OF 2 CLAMPS, MAXIMUM DISTANCE BETWEEN CLAMPS IS 3' OR ADDITIONAL CLAMPS WILL BE REQUIRED.

CONSTRUCT CHANNEL AND SHELF IN FIELD



NOTES:

1. PIPE AND FITTINGS SHALL BE SAME SIZE AS INFLOW PIPE TO MANHOLE.
2. PIPE AND FITTINGS FOR DROP ASSEMBLY SHALL BE: DUCTILE IRON ANSI A21.50-1, AWWA C150-1, AWWA C-900 OR PVC ASTM 3034 SDR 35.
3. REQUIRED WHEN INVERTS ARE 18" or MORE or AS PER THE CITY ENGINEER.



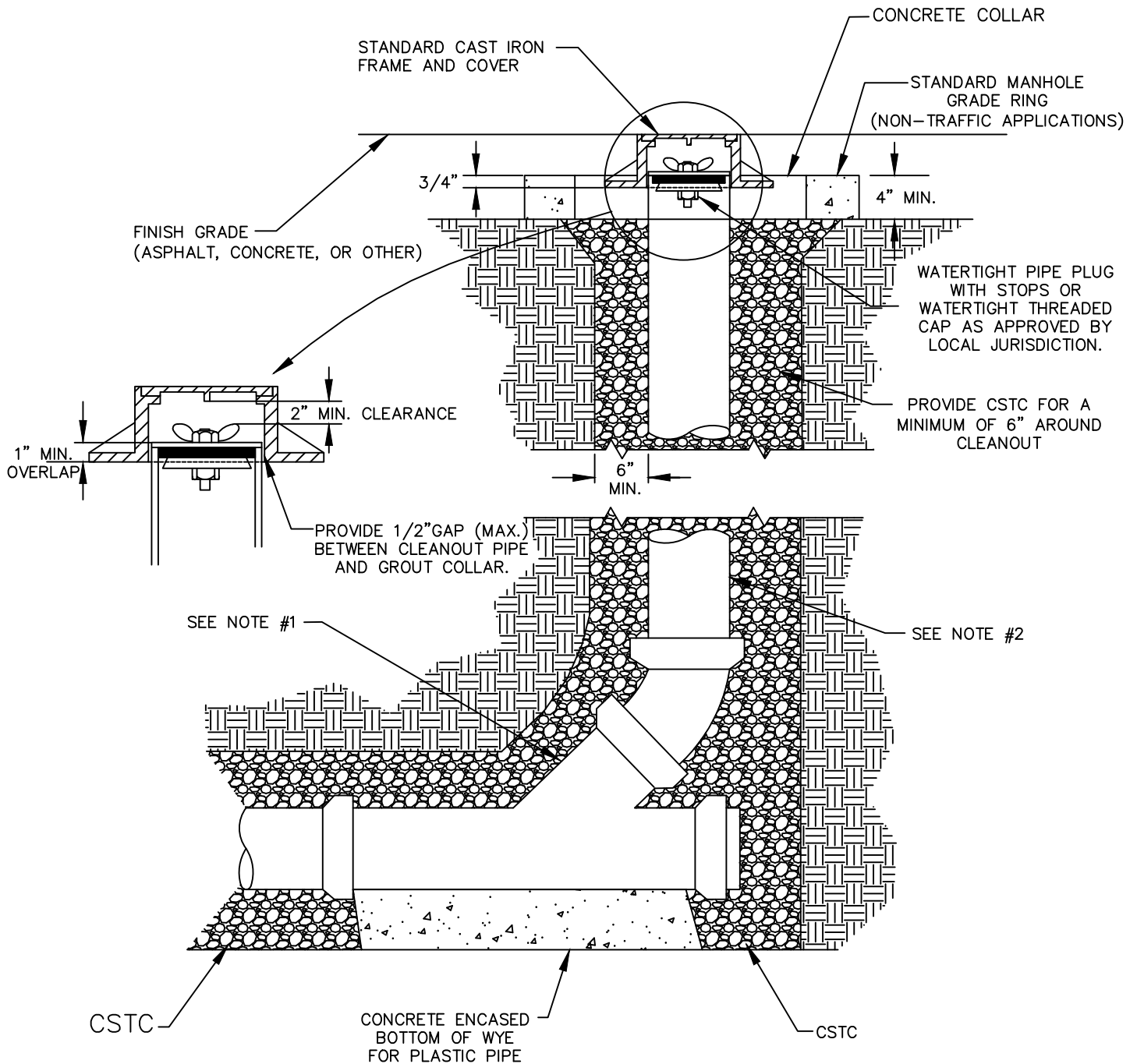
DROP MANHOLE CONNECTION

City of Quincy Washington - Standard Drawings

Scale: NTS

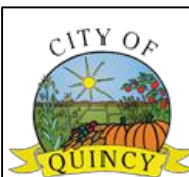
Date: 9/05/2022

SS-2



NOTES:

1. CONCRETE ENCASE ENTIRE WYE SECTION AND 45 DEGREE BEND IF CONCRETE OR DUCTILE IRON PIPE.
2. STANDPIPE TO BE SAME SIZE AS MAINLINE UP TO AND INCLUDING 8" PIPE. MAINLINE GREATER THAN 8" SHALL HAVE A 8" STANDPIPE.



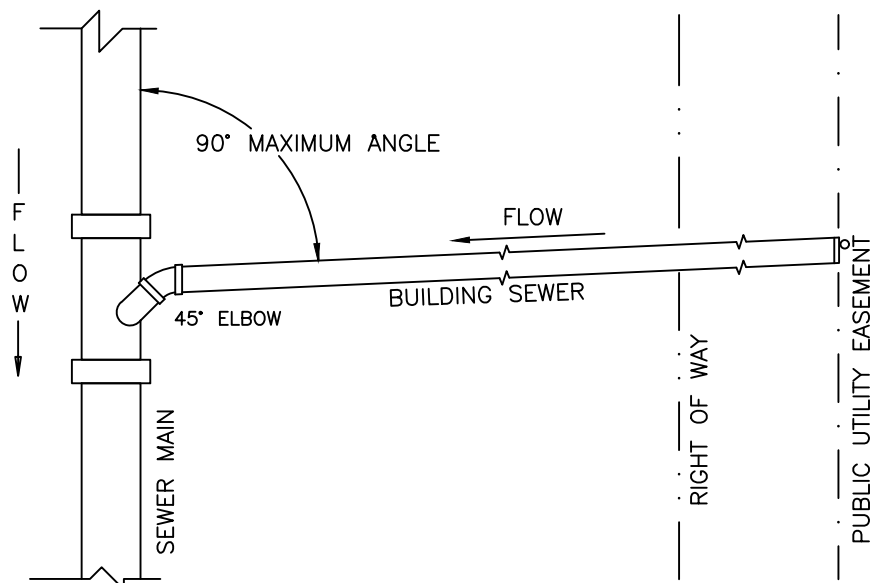
SEWER CLEANOUT

City of Quincy Washington - Standard Drawings

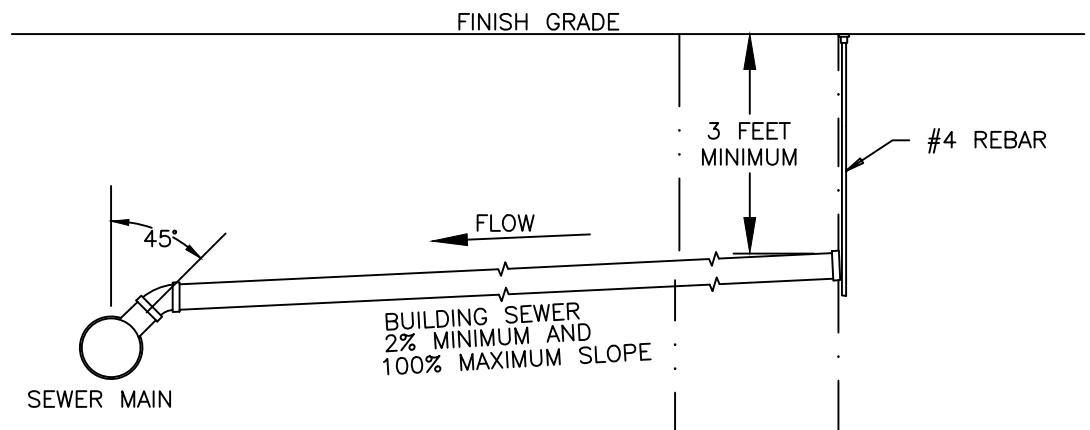
Scale: NTS

Date: 9/05/2022

SS-3



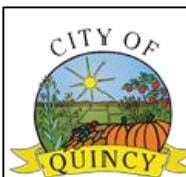
PLAN VIEW



PROFILE

NOTES:

1. IN-LINE GASKETED WYE SEWER FITTING SHALL BE USED ON NEWLY INSTALLED MAINS.
GASKETED WYE SEWER SADDLE WITH STAINLESS STEEL CLAMPS SHALL BE USED ON EXISTING SEWER MAINS.
2. THE END OF THE SERVICE LINE SHALL BE CAPPED.
3. #4 REBAR SHALL BE INSTALLED MARKING THE END OF THE SERVICE LINE.
4. BUILDING SEWER CLEANOUTS ARE NOT ALLOWED WITHIN MUNICIPAL EASEMENTS OR RIGHT OF WAY.
5. 4" Min. DIAM. FOR RESIDENTIAL, ALL OTHERS 6" Min.



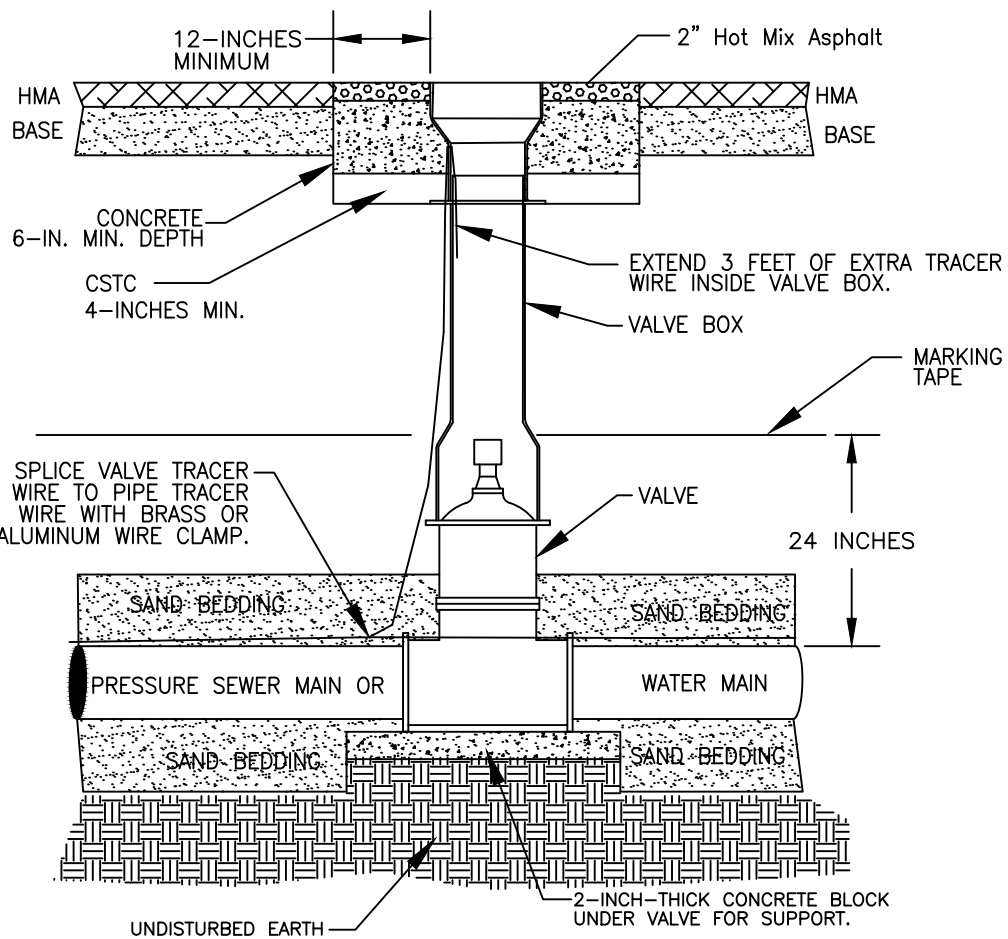
SEWER SERVICE INSTALLATION

City of Quincy Washington - Standard Drawings

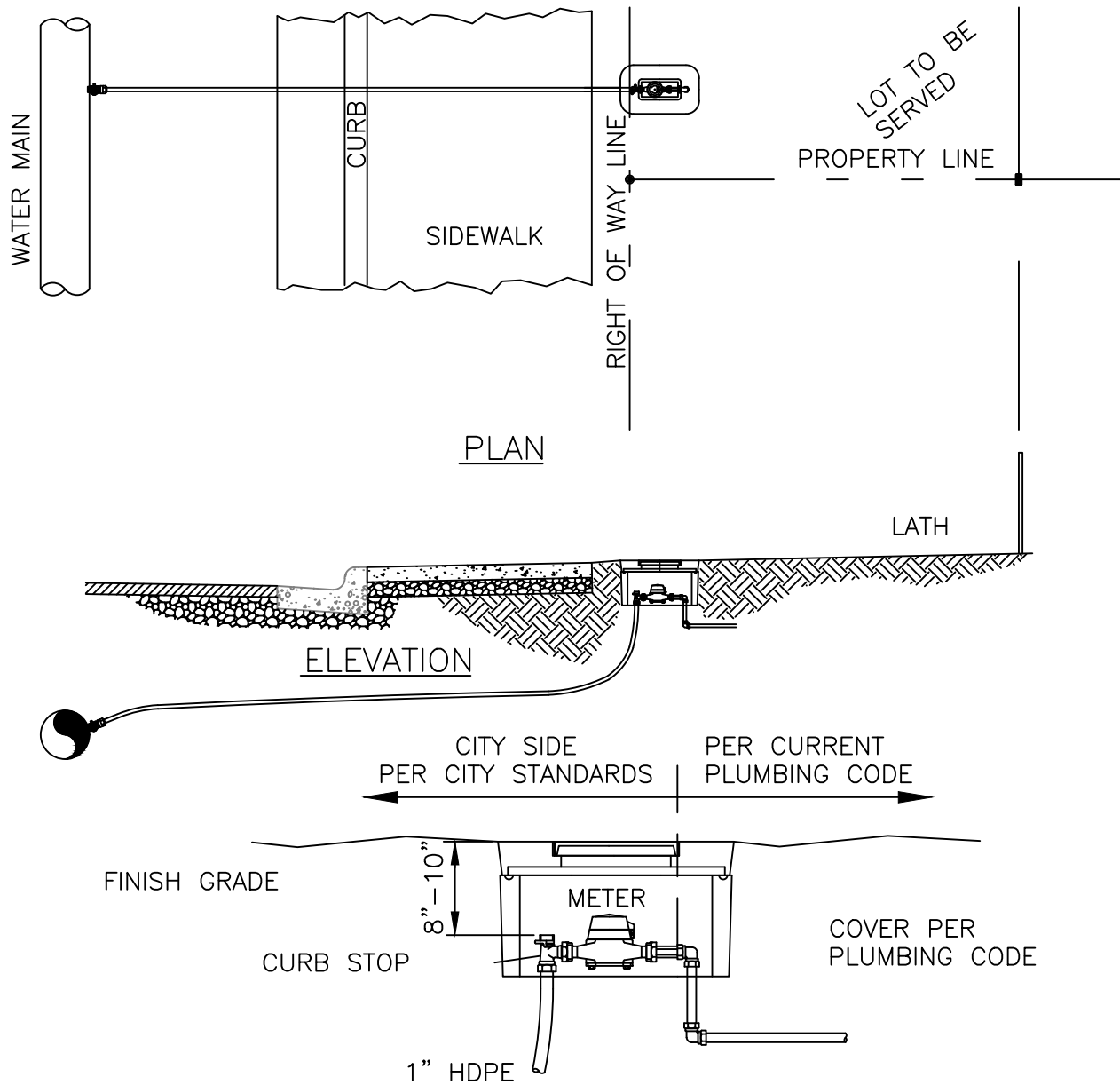
Scale: NTS

Date: 9/05/2022

SS-4

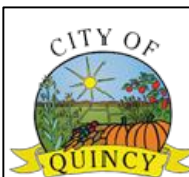


1. EACH VALVE SHALL BE PROVIDED WITH AN ADJUSTABLE CAST IRON VALVE BOX OF 5" INSIDE DIAMETER. VALVE BOXES SHALL HAVE A TOP SECTION WITH AN 18" MINIMUM LENGTH.
2. 18" MINIMUM, 24" MAXIMUM FOR OPERATOR NUT IF EXTENSION IS REQUIRED.



NOTES:

1. SERVICE FROM METER BOX TO HOUSE BY PROPERTY OWNER INDIVIDUAL SERVICES REQUIRED FOR EACH PROPERTY.
2. METER TO BE INSTALLED BY THE CITY AT THE OWNER'S EXPENSE.



WATER SERVICE

City of Quincy Washington - Standard Drawings

Scale: NTS

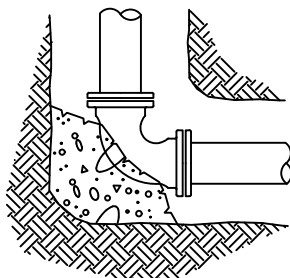
Date: 9/05/2022

W-2

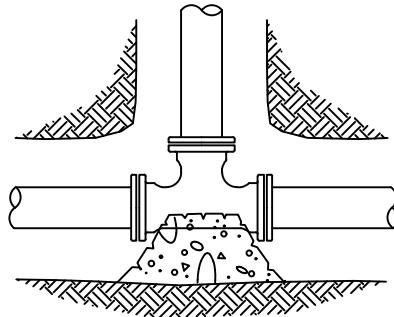
MINIMUM BEARING AREA OF THRUST BLOCKS IN SQ FT

FITTING SIZE	TEE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND
6"	4	6	3	2	2
8"	7	10	6	3	2
10"	10	15	9	5	3
12"	14	22	12	6	4
16"	25	38	21	11	7
18"	32	48	27	14	8

VALUES BASED ON 100 PSI
WATER PRESSURE AND 2000 PSF
SOIL BEARING CAPACITY



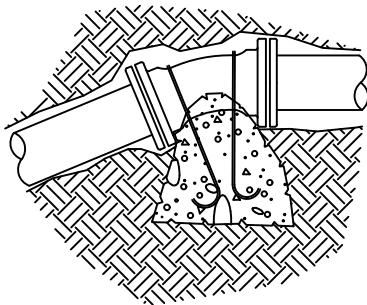
BEND



TEE

VOLUME OF THRUST BLOCK IN CU YDS (VERTICAL)

FITTING SIZE	BEND ANGLE		
	45°	22.5°	11.25°
6	3	1.0	.5
8	4.0	1.5	1
12	8.5	3.5	1.5
16	15	6	2.5



VERTICAL BEND

NOTES:

- 1) THRUST BLOCKING AT ALL TEES, BENDS AND ENDS OF PIPING
- 2) CONCRETE BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH
- 3) ALL CONCRETE TO BE CLASS 3000
- 4) INSTALL 12 MIL TOTAL THICKNESS POLYTHENE SHEET AROUND FITTING. SECURE SHEET ENDS TO PREVENT INFILTRATION OF DIRT BETWEEN SHEET AND PIPE FITTING PRIOR TO POURING THRUST BLOCKING
- 5) PROTECT MECHANICAL JOINT FOLLOWERS AND BOLTS FROM CONCRETE WITH TEMPORARY FORMS AND POLYTHENE SHEETING SEE NOTE 3
- 6) BEARING AREA SHALL BE PROPORTIONALLY INCREASED WITH PRESSURES IN EXCESS OF 100 PSI OR IN SOIL CONDITIONS WITH LESS THAN 2,000 PSF STRENGTH

FITTING SIZE	ROD SIZE	EMBEDMENT
4"-12"	#6	30"
14"-16"	#8	36"



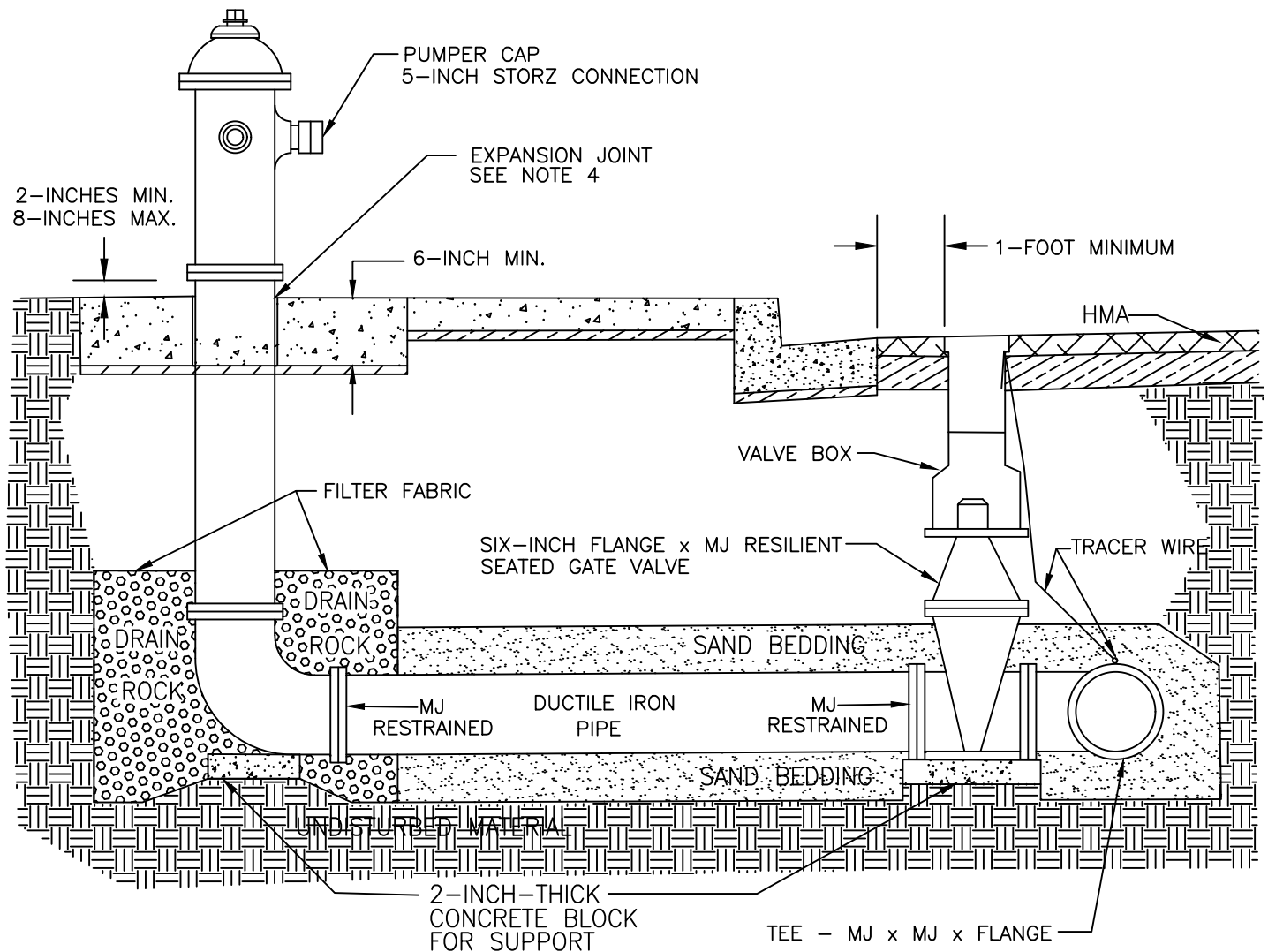
CONCRETE TRUST BLOCKS

City of Quincy Washington - Standard Drawings

Scale: NTS

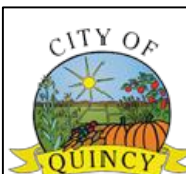
Date: 9/05/2022

W-3



NOTES:

1. HYDRANTS SHALL BE INSTALLED BEHIND THE SIDEWALK, OR TRAVELED WAY WHERE THERE IS NO SIDEWALK.
2. NO PORTION OF THE HYDRANT SHALL PROJECT OVER THE SIDEWALK OR TRAVELED WAY.
3. THE HYDRANT SHALL BE CENTERED IN A 6-FT. X 6-FT. X 6-IN. CONCRETE PAD; HOWEVER, THE SIDEWALK MAY BE CONSIDERED PART OF THE PAD.
4. EXPANSION JOINT REQUIRED BETWEEN CONCRETE PAD AND FIRE HYDRANT. USE 1/4-INCH-THICK ADHESIVE BACKED NEOPRENE, OR APPROVED EQUAL.
5. PAINT FIRE HYDRANT WITH TWO COATS OF YELLOW RUST-RESISTANT PAINT TO MATCH CITY'S EXISTING HYDRANTS
6. PLACE HYDRANT BOLLARDS WHEN REQUIRED BY THE CITY.
7. MECHANICAL JOINTS AND BELL/SPIGOT CONNECTIONS SHALL BE RESTRAINED JOINTS. CONCRETE THRUST BLOCKS AND SHACKLES ARE NOT ALLOWED.
8. ALL FITTINGS SHALL BE DUCTILE IRON WRAPPED IN 8-MIL POLYETHYLENE ENCASEMENT, EXCEPT FOR THE BARREL SECTION THAT HAS THE DRAIN HOLE.
9. VALVE SHALL BE INSTALLED PER THE VALVE AND TRACER WIRE DETAIL.
10. HYDRANT TEES SHALL BE MINIMUM OF 10 FEET FROM THE NEAREST TAP IN THE WATER MAIN.



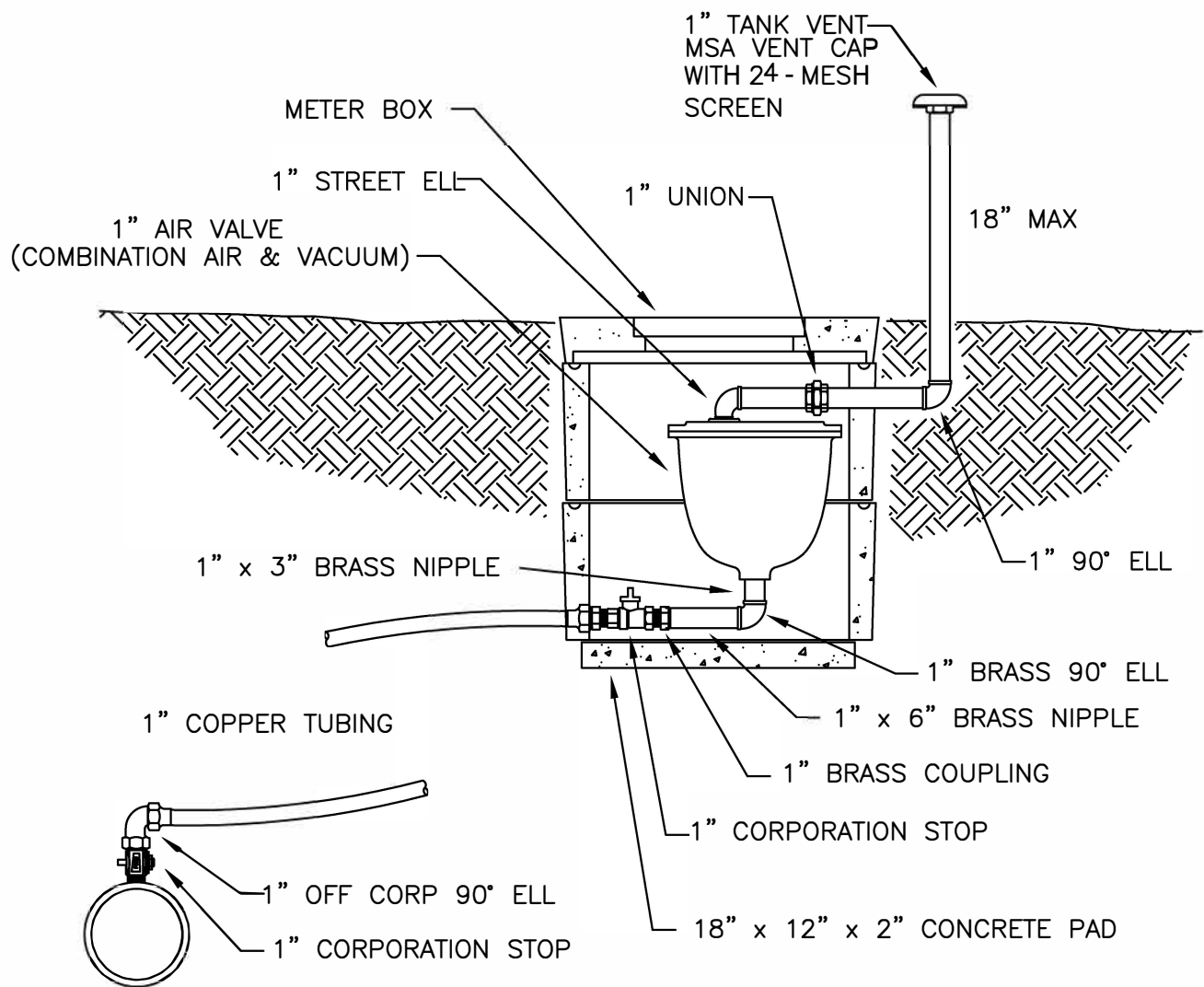
FIRE HYDRANT

City of Quincy Washington - Standard Drawings

Scale: NTS

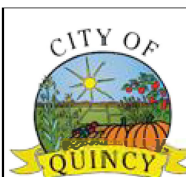
Date: 9/05/2022

W-4



NOTES:

1. FOR 12" AND SMALLER WATER MAINS
2. VENT PIPING TO BE GALVANIZED
3. SLOPE COPPER TUBING FROM MAIN UP TO AIR VALVE 1% MIN
4. LOCATION SIMILAR TO METER BOX



AIR / VACUUM RELIEF

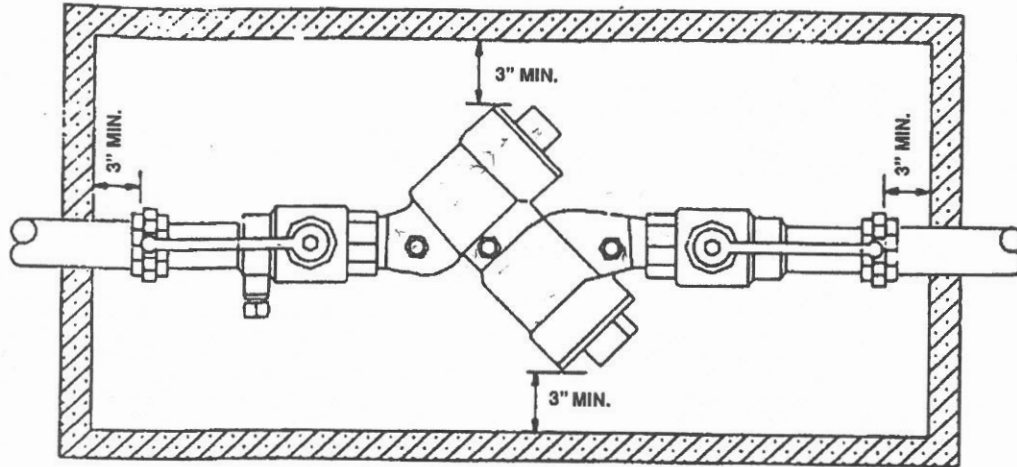
City of Quincy Washington - Standard Drawings

Scale: NTS

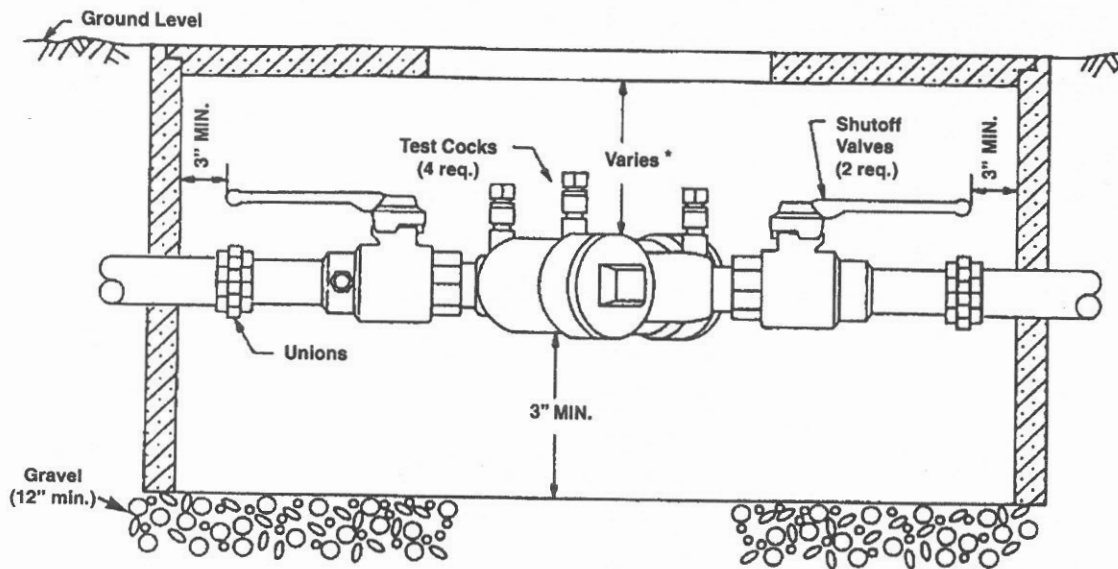
Date: 9/05/2022

W-5

Exhibit A



TOP VIEW



SIDE VIEW

*Varies according to local plumbing code.

INSTALLATION GUIDELINES FOR SMALL DOUBLE CHECK VALVE ASSEMBLIES

- 1) Assembly must be on the Washington Department of Health *Approved List of Assemblies* (University of Southern California - Foundation for Cross Connection Control and Hydraulic Research).
- 2) Adequate space must be allowed for testing, repair and maintenance including 12 inches minimum clearance under the lowest part of the assembly.
- 3) The area around and under the assembly must be able to provide for drainage.
- 4) Vault installations require the use of plugs or water-tight caps in all test cocks.
- 5) 'Y' pattern assemblies must be installed so that the test cocks are pointed up (see drawing).
- 6) Thoroughly flush the water lines prior to installation of the assembly.
- 7) In-line strainers are recommended upstream of the assembly.

Exhibit B

WA State-approved List of Double Check Valve Assemblies

July 2013

One Inch size; Installed in Horizontal Orientation; Purchased as a complete unit with both shutoff valves attached

Manufacturer	Model
Ames	2000B
Ames	2000B
Ames	2000B-FP
Ames	200B
Ames	LF200B
Ames	LFU200B
Ames	U200B
Apollo/Conbraco	DC40
Apollo/Conbraco	DC4A
Cash Acme	DC100
Febco	850
Febco	850U
Watts	007M1-FP
Watts	007M1PCQT
Watts	007M1QT
Watts	007M1QT
Watts	719QT
Watts	LF719QT
Watts	LFU719QT
Watts	U007M1PCQT
Watts	U007M1QT
Watts	U719QT
Wilkins	350
Wilkins	950XL
Wilkins	950XLT
Wilkins	950XLТУ
Wilkins	950XLU