

Cross Valley



DEVELOPER EXTENSION AGREEMENT AND
TECHNICAL SPECIFICATIONS

for

WATER MAIN CONSTRUCTION

Revised 2023

EXTENSION: _____

PROJECT # : _____

DEVELOPER: _____

DATE: _____



Snohomish County, Washington

Commissioners

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DEVELOPER EXTENSION CONTACT INFORMATION

Name of Extension: _____

Plat

Section

Township

Range

Owner, a Corporation: _____

Name: _____

Partnership: _____

Address: _____

Sole Proprietorship: _____

LLC: _____

Phone: _____

Emerg. Phone: _____

Email: _____

CONTRACTOR:

Name: _____

Address: _____

Phone: _____

Emerg. Phone: _____

Email: _____

SUPERINTENDENT:

Name: _____

Address: _____

Phone: _____

Emerg. Phone: _____

Email: _____

ENGINEERING FIRM:

Name: _____

Address: _____

Phone: _____

Emerg. Phone: _____

Email: _____



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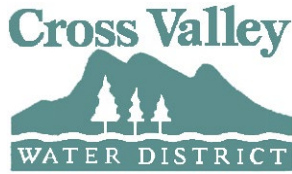
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DEVELOP PROCESS CHECK LISTS

Project Name and Number

Phase 1 - Design and Approval

Date and Initials of District Representative

_____	1.	Developer agreement received and completed	(Developer)
_____	2.	Basic engineering and legal fees paid	(Developer)
_____	3.	Legal description and ownership checked	(District)
_____	4.	Preliminary Connection Fee Charges calculated	(District)
_____	5.	Developer agreement approved by Resolution	(District)
_____	6.	Approved Developer Extension Agreement returned to Developer	(District)
_____	7.	Plans submitted for approval or for design, on CAD if available	(Developer)
_____	7.1	Final plat map (scale 1" = 50')	(Developer)
_____	7.2	Existing and proposed contour maps with 5' contour interval scaled 1" = 50'	(Developer)
_____	7.3	Road profiles showing all proposed and existing utilities and datum noted	(Developer)
_____	7.4	Storm drainage plans	(Developer)
_____	7.5	Sewer plans if serviced by other District	(Developer)
_____	7.6	Fire Marshal's required fire flows	(Developer)
_____	7.7	Architectural plans and building elevations	(Developer)
_____	7.8	Number of units per building	(Developer)
_____	7.9	All utility plans, i.e., Gas, Power, Telephone, Cable	(Developer)
_____	7.10	Plat and utility coordinates plan	(Developer)
_____	7.11	Sprinkler system information	(Developer)
_____	8.	Plans Reviewed	(District)
_____	9.	Application made for State or Federal Permits, etc.	(Developer or District)
_____	10.	Necessary approvals received	(Developer)
_____	11.	Necessary easements acquired and filed	(Developer and District)

12.	CAD drawing file submitted to the District	(Developer)
13.	Plans submitted to Snohomish County for street cut permit	(District)
14.	Right-of-Way Permit Bond	(Developer or Contractor)
15.	Permit received	(District)
16.	Preliminary Connection Fee Charges Paid	(Developer)
17.	Plans approved: Notice to Proceed to Developer and Contractor	(District)

Phase 2 – Construction

Date and Initials of District Representative

1.	Construction engineering fee paid	(Developer)
2.	Performance Bond or Cash Bond received	(Developer)
3.	Certificate of Insurance	(Developer)
4.	Requirements met for approval of Contractor	(District)
5.	Pre-Construction conference attended by Developer, Developer's Engineer and Contractor	(Contractor and District)
6.	Copies of all permits to Contractor and Developer	(District)
7.	Property boundary and lot corner stakes in place	(Developer)
8.	Water main staking	(Developer)
9.	72 hours' advance notice of starting date by Contractor	(Contractor)
10.	Affected agencies, property owners, schools, etc., notified	(Contractor)
11.	System tested	(District)
12.	Purity test approved	(District)
13.	Semi-final inspection for acceptance	(District)
14.	Deficient items list mailed - if required	(Developer, Contractor and District)
15.	Final inspection	(District)
16.	As-Built Drawings completed	(District)

Phase 3 - Service Connection

Date and Initials of District Representative

_____	1.	Preliminary connection fee re-calculated	(District)
_____	2.	Necessary easements verified and filed	(Developer and District)
_____	3.	Executed Bill of Sale submitted to the District	(Developer)
_____	4.	Affidavit of No Lien	(Developer)
_____	5.	Certification of construction costs received by District (Local, Major, etc.)	(Contractor and District)
_____	6.	Verify all Developer Extension fees and all the following accounts paid by Developer	(District)
_____		Developer Extension Fees Paid	
_____		A account - Additional Services	
_____		B account - Basic Engineering	
_____		C account – Construction	
_____		L account - Legal	
_____		M account - Connection Fee Charges (CFC)	
_____	7.	Maintenance Bond received in the amount of ten per cent (10%) of cost of the extension	(Developer)
_____	8.	Recorded documents received	(Developer & District)
_____	9.	Recorded plat map	(Developer)
_____	10.	Lot tracking sheet	(Developer & District)
_____	11.	Meter Application	(Developer & District)
_____	12.	Resolution accepting facilities	(District)
_____	13.	Backflow test reports	(Developer)
_____	14.	Final inspection prior to end of year after acceptance	(District)
_____	15.	Release of maintenance bond	(District)
_____	16.	Refund any deposits made check water/sewer DDP or Fire Flow	(District)

PROJECT COMPLETE

Developer Extension Financial Summary
Estimated / Preliminary
Cross Valley Water District

WATER

SEWER

NAME OF DEVELOPMENT

DE#

DATE

Trans CODE

PRE-APPLICATION DEPOSIT

DEPOSIT

DDP

ENGINEERING

FIRE FLOW DEPOSIT

DEPOSIT

FFWtr

REVIEW and or DESIGN DEPOSIT

DEPOSIT

DDPWTR/SEWER

INSPECTION

DEPOSIT

DDPWTR/SEWER

LEGAL (Review)

SERVICES

DEPOSIT

DDPLgWTR

SERVICES

DEPOSIT

DDPLgSEWER

PERMITS (County WSDOT)

PERMITS

DEPOSIT

DDPWTR

PERMITS

DEPOSIT

DDPSEWER

DISTRICT COSTS

REVIEW

DEPOSIT

DDPWTR

REVIEW

DEPOSIT

DDPSEWER

OTHER

METER

SIZE

#

DEPOSIT

MTRINSTAL

DE Water Book (2 needed)

DEPOSIT

DEBkWTR

DE Sewer Book (2 needed)

DEPOSIT

DEBkSEWER

Additional Deposits may be required.

CONNECTION FEE CHARGES - (Paid at the time of the water meter application - * increase Sept 1st annually)

LOCAL - per connection

Single Family Unit

DEPOSIT

ConnLoc / (X)

Multi-Family Unit

DEPOSIT

ConnLoc / (X)

Industry or Commercial

DEPOSIT

ConnLoc / (X)

GENERAL - per connection

5/8" Single Family Unit

DEPOSIT

ConnGen / (X)

3/4" Single Family Unit

DEPOSIT

ConnGen / (X)

Multi-Family Unit

DEPOSIT

ConnGen / (X)

Industry or Commercial

DEPOSIT

ConnGen / (X)

* Connection fee charges do **NOT** include Meter and Service Line costs.

Performance Bond is the estimated project cost. Maintenance Bond is 10% for 2 years.



**CROSS VALLEY WATER DISTRICT
APPLICATION AND AGREEMENT FOR PERMISSION TO
CONSTRUCT EXTENSION TO WATER DISTRIBUTION SYSTEM**

1.	Location of Extension	Application and Agreement - 1
2.	Description of Extension <i>Description of Property</i>	Application and Agreement - 2
3.	Connection Fee Charge <i>Approx. Lineal feet of pipe</i>	Application and Agreement - 2
4.	Extension Fee – Design by the District’s Engineer	Application and Agreement - 2
5.	Extension Fee – Design by the Developer’s Engineer	Application and Agreement - 4
6.	Preparation of Construction Plans	Application and Agreement - 6
7.	Evidence of Insurance	Application and Agreement - 10
8.	Hold Harmless Provision	Application and Agreement - 10
9.	Contractors, Subcontractors, Laborers and Materialmen	Application and Agreement - 10
10.	No Third Person Shall Have any Rights Hereunder	Application and Agreement - 11
11.	Performance Bond/Maintenance Bond	Application and Agreement - 11
12.	State and/or Snohomish County Bond	Application and Agreement - 11
13.	Easements	Application and Agreement - 11
14.	Permits	Application and Agreement - 12
15.	Grading of Roads	Application and Agreement - 12
16.	Maintenance of Correct Alignment and Grade	Application and Agreement - 12
17.	Connection to the District’s System	Application and Agreement - 12
18.	Condition Precedent	Application and Agreement - 13
19.	Acceptance for Use and Operation	Application and Agreement - 13
20.	Final Acceptance	Application and Agreement - 14
21.	Limitation of Period for Acceptance	Application and Agreement - 14
22.	Warranty of Authority	Application and Agreement - 15

23. No Assignment/Subcontracting without District Approval	Application and Agreement – 15
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CROSS VALLEY WATER DISTRICT
APPLICATION AND AGREEMENT FOR PERMISSION TO CONSTRUCT EXTENSION
TO WATER DISTRIBUTION SYSTEM

Project Name and Number

The undersigned (the "Developer") makes application to the Cross Valley Water District (the "District") for permission to construct and install an extension in the easement and franchise areas of the District and/or on easements which are subject to the District's approval, and to connect the extension to the water distribution system of the District, and makes the following representations and agreements:

1. LOCATION OF EXTENSION.

The proposed extension, described in Section 2 below, will be installed in road franchise areas, easements and/or on other approved rights-of-way, and shall be for the use and benefit of the property described below, which property is owned by the Developer and/or other persons who are contributing to the costs of said extension and who join in this application ("Additional Owners"). The extension shall be extended to the furthest edge of the Developer's property and/or through the property to the furthest boundary to provide for future extensions of the water system and developments. The Developer's property is described as follows (if the legal description is not set forth or is incorrect, then, at the option of the District, the District may cause the legal description or corrected legal description to be inserted below or attached to this Application and Agreement):

Description of Property

2. DESCRIPTION OF EXTENSION.

The proposed extension shall consist of approximately _____ lineal feet of water pipe and appurtenances and shall be installed in accordance with plans and specifications provided or approved by the District's Engineer and the Standards and Conditions for Constructing Extensions to the Water System adopted by the District, which include, but are not limited to, resolutions, general conditions, engineering specifications, standard plans and other instruments or documents which are on file in the District's office and in the office of the District's Engineer, or detailed plans and specifications as prepared and/or approved by the District and/or its Engineer pursuant to this Application, the terms and conditions of which are, by this reference, made a part hereof, as though set forth in full herein.

3. CONNECTION FEE CHARGE.

The District presently has a connection fee charge for all property in its boundary. Payment of the connection charges will be required to be made at the time of the water meter application and water meter installation.

4. EXTENSION FEE - Design by the District's Engineer.

If the Developer elects to have the District's Engineer design the extension, extension fees shall be paid by the Developer in consideration of the District providing the following services:

a. Basic Engineering and Administrative Services.

1. General consultation with the Developer regarding the District's requirements and procedures for the Developer to make a water system extension, and the administration of this Developer Extension Agreement.
2. Preliminary review of the proposed development and preliminary layout of the required water main extension in accordance with the District's Water Comprehensive Plan.
3. Preparation of the contract plans, specifications, and bill of sale forms.
4. Submittal of contract plans and specifications to the regulatory agencies for approval.
5. Application for State and County permits, but not to include Corps of Engineers, Shoreline Management or SEPA applications or requirements.
6. Consultation with the Developer during the period of this Agreement regarding the extension design, District specifications, and other District requirements.

The fee for basic engineering and water administering services shall be as identified on the estimated financial summary sheet.

b. Construction Engineering Services.

1. Review of developer-provided construction stakes as required.
2. Observation of the construction in progress as required.

3. Observation of the pressure test required by the specifications, and any re-testing which may be necessary, and sampling of the completed water main after flushing and submittal to the Washington State Department of Health for bacteriological examination.
4. Final review of the complete water main extension and preparation of a report setting forth any deficiencies that may exist.
5. Review of deficient work and final two-year review.
6. Final review of the completed water main extension and examination of require documents to assure that the District has legal title to the necessary easements and/or rights-of-way, review and approval of the Developer's warranty and bill of sale and preparation of a final recommendation of acceptance of the water system by the District.
7. Revision of drawings to conform with construction records. Provide certification to Department of Health.

The fee for construction Engineering services shall be on an actual time and expense basis. An estimated deposit shall be made in the amount to cover the actual time and expense cost of providing construction Engineering and Inspection services.

c. Legal Services.

1. Amendment of the comprehensive plan.
2. Review of Developer Extension Agreement and any special agreements required by the District for the extension.
3. Resolution accepting developer extension agreement.
4. Review of easements as required.
5. Resolution of acceptance of use and operation.
6. Resolution accepting title, review of the bill of sale and performance/maintenance bonds.

The minimal deposit fee for legal services shall be \$300.

d. Additional Professional Services.

1. Revision of the contract plans, and specifications and work occasioned by the need, request or act of the Developer related thereto.
2. Obstruction, delay or prevention of construction staking, replacement of stakes and additional staking.
3. Reinspection of deficient work.
4. Additional legal fees may be charged on a time and expense basis where a special contract is required and/or special problems arise with such third parties as Snohomish County, the Boundary Review

Board, Department of Health, State Highway Commission, and others, in order for the District to enter into the developer extension and which requires the representation of District's legal counsel.

5. Engineering design of pressure reducing stations, booster pumps or other special facilities.
6. In the event this agreement is referred or placed with the hands of attorneys by the District for enforcement of any portion, or if suit is instituted with respect to this agreement, then, in either event, the Developer and additional owner shall pay reasonable attorney's fees as may be incurred by the District or awarded by the court, court costs, all expenses in connection therewith, as may be incurred by the District.
7. Additional services such as design surveys and easement preparation shall be provided on a time and expense basis.

e. Other Costs.

1. All fees and additional charges as required by governmental agencies such as: any permits and fees, connection fee charges, publication notifications, and other such additional costs shall be based on actual invoice amounts of each such fee or charge.
2. In the event the Developer fails to pay any of the extension fees and charges required by this Agreement when due as determined by the District, the charge shall then be delinquent and shall accrue interest at the rate of TWELVE percent (12%) per annum until paid. In addition, the District shall be entitled to file a lien against the property described in Section 1 above in the event of non-payment, and to foreclose such lien pursuant to RCW 57.08.081, as such statute now exists or may be revised, amended, or superseded in the future.

5. EXTENSION FEE - DESIGN BY THE DEVELOPER'S ENGINEER.

If the Developer's engineer designs the extension, extension fees shall be paid by the Developer in consideration of District providing the following services:

a. Basic Engineering and Administrative Services.

1. General consultation with the Developer regarding requirements of the District, the procedure for the Developer to make a water system extension and administration of the developer extension agreement.
2. Preliminary review of the proposed development and preliminary layout of the required water main extension in accordance with the District's water comprehensive plan.
3. Redrafting of construction drawing to conform to District standards.
4. Consultation with the Developer during the period of the extension agreement regarding the extension design, District's Specifications, and other District requirements.

Developer shall pay with the submission of their application an amount equal to that identified on the estimated Financial Summary sheet.

b. Construction Engineering Services.

1. Provide one complete set of construction stakes.
2. Observation of the construction in progress as required.
3. Observation of the pressure test required by the specifications and of any re-testing which may be necessary and sampling of the completed water main after flushing and submittal to the Washington State Department of Health for bacteriological examination.
4. Final review of the completed water main extension and preparation of a report setting forth any deficiencies that may exist.
5. Review of deficient work and final two-year review.
6. Final review of the completed water main extension and examination of required documents to assure that the District has legal title to the necessary easements and/or rights-of-way, review and approval of the Developer's warranty and bill of sale and preparation of a final recommendation of acceptance of the water system by the District.
7. Revision of drawings to conform with construction records. Provide certification to Department of Health.

The fee for construction Engineering services shall be on an actual time and expense basis. An estimated deposit shall be made to cover the actual time and expense cost of providing construction Engineering & Inspection services.

c. Legal Services

1. Amendment of the comprehensive plan.
2. Review of developer extension agreement and revision of comprehensive plan.
3. Resolution accepting developer extension agreement.
4. Review of easements as required.
5. Resolution of acceptance for use and operation.
6. Resolution accepting title, review of the bill of sale and performance/maintenance bonds.

The minimal deposit fee for legal services shall be \$300.

d. Additional Professional Services.

1. Revision of the contract plans, and specifications and work occasioned by the need, request, or act of the Developer related thereto.
2. Obstruction, delay or prevention of construction staking, replacement of stakes and additional staking.
3. Re-inspection of deficient work.

4. Additional legal fees may be charged on a time and expense basis where a special contract is required and/or special problems arise with such third parties as Snohomish County, the Boundary Review Board, Department of Health, State Highway Commission, and others, in order for the District to enter into the developer extension and which requires the representation of District's legal counsel.
5. Engineering review of pressure reducing stations, booster pumps or other special facilities.
6. In the event this agreement is referred or placed with the hands of attorneys by the District for enforcement of any portion, or if suit is instituted with respect to this agreement, then, in either event, the Developer and additional owner shall pay reasonable attorneys' fees as may be incurred by the District or awarded by the Court, court costs, all expenses in connection therewith, as may be incurred by the District.
7. Additional services such as design surveys and easement preparation shall be provided on a time and expense basis.
8. Costs to prepare a developer reimbursement agreement spreading of the costs to other benefited properties and filing with Snohomish County.

e. Other Costs.

1. All fees and additional charges as required by governmental agencies, such as: any permits and fees, connection fee charges, publication notifications, and other such additional costs, shall be based on actual invoice amounts of each such fee or charge.
2. In the event the Developer fails to pay any of the extension fees and charges required by this Agreement when due as determined by the District, the charge shall then be delinquent and shall accrue interest at the rate of TWELVE percent (12%) per annum until paid. In addition, the District shall be entitled to file a lien against the property described in Section 1 above in the event of non-payment, and to foreclose such lien pursuant to RCW 57.08.081, as such statute now exists or may be revised, amended, or superseded in the future.

6. PREPARATION OF CONSTRUCTION PLANS

a. By the District's Engineer.

The Developer shall furnish two (2) copies of the final plat map, contour map, and proposed road profile and drainage sheets prior to the District's ordering of the engineering plans from its Engineer. The contour elevation and road profile elevations shall be referenced to NAVO 88 vertical datum.

The final plat map shall be to the scale of 1 inch = 50 feet or 1 inch = 100 feet. The contour map shall have a scale of 1 inch = 50 feet and contour intervals of 5 feet or less. The road profile sheets may be to any suitable scale as selected by the Developer.

The Developer shall provide a minimum of one benchmark, data being NAVO 88, on the project site and the elevation and location of the benchmark shall be indicated on the maps furnished by the Developer.

The Developer shall submit all additional information required and listed by the Check List, Developer's Extension, paragraph 7.

b. By the Developer's Engineer.

The plans may be prepared by the Developer through a licensed Engineer and plan checked by the District's Engineer in accordance with the Developer's Agreement. Should the Developer choose to have the plans prepared by their own Engineer, then the following requirements must be met.

1. General Drawing Requirements.

- a. Original drawings will be on 22"x34" sheets. If drawings exceed one (1) sheet, a cover sheet shall be provided.
- b. No combined water and sewer plans will be accepted. Water and Sewer plans may be in the same set but must be on separate sheets.
- c. Plan scale Water and Sewer DE plans are to include an overall view of the entire property at 1" =40' or 1"-50' scale. Subsequent sheets are to include "plan above profile" viewports (with alignment stationing logically corresponding between viewports) at 1" =20 or 1" =30' scale. Final scales are to be determined at the District's discretion.
- d. Plan shall clearly show right-of-way lines, centerline of right-of-way, lot lines, lot numbers, and street names.
- e. Fittings and valves to be drawn at a reasonable scale. At connections where the scale does not allow for all fitting to be shown clearly, a blown up detail of that area shall be included.
- f. Complete description of each fitting and valve shall be called out on the construction plans.
- g. Size, type of pipe, distance between fittings shall be shown.
- h. Location of line, bends, valves, fire hydrants, etc., shall be shown in such a manner that the system can be staked for construction.
- i. The title block shall be located in the lower right corner of the sheet to be read from the bottom of the sheet. The sheet shall have a 1/2" margin all around with an extra 1" on the left side for binding.
- j. Plan view will normally be oriented so that north is either to the left or up on the sheet.
- k. Scale of viewports: All horizontal and vertical scales are to be written out and accurately shown in bar scale.
- l. Drawings shall contain a vicinity map, name of the District, an approval block for the District, Engineer's seal and signature, name of the engineering firm, Developer's name; date and north arrow(s), list of required construction notes, Section, Township, Range and SCAS datum.
- m. All relevant existing and proposed easements shall be shown.
- n. All existing utilities, structures and features, as well as all proposed improvements, shall be shown on plans, An existing conditions plan is preferred.
- o. Current water pressure zone and water pressure to be stated on plans if applicable.
- p. A legend, including symbols and line types of all relevant existing and proposed infrastructure, shall be included on the first or second sheet in the set. Symbols displayed on subsequent plan above profile sheets shall appear consistent with those in the legend. See posted example for sample line weights.

2. General Notes.

The general notes shall be placed on at least one sheet of the plans.

3. As-Builts.

The Developer/Contractor shall maintain on the jobsite project plans and drawings marked to indicate District-approved plan revisions made in the field and other details of construction. Also, all water and sewer features, such as valves, hydrants, meters, manholes, rim, and invert elevations, etc. shall be surveyed upon completion of construction and the resulting information included on the drawings. The drawings shall be made available upon completion of the project to the District for use in preparation of "as built" records by the District Engineer. The Developer shall be responsible for the cost of any required "as built" drawings as prepared by the District Engineer.

Hard Copies: The Developer/engineer at their cost shall submit a clear and legible copy of the as-built of the project either as copy or as a PDF and as an AutoCAD file prior to final acceptance of the extension improvements.

Electronic data: All relevant structures shall be survey located. The survey location of the points shall be based on the Washington State Plane North coordinate system, NAD 83/91 horizontal datum and NAVO 88 vertical datum.

The as-built submittal shall include a text document identifying the method of collection: RTK, GPS, or conventional survey and the published survey grade reference points used to establish the coordinate datum. Alternately, projects surveyed using RTK constrained to the Washington Reference Station Network as the method of establishing the coordinate datum, will be accepted.

The survey data can be included as point blocks in a digital ACAD file, may be submitted as an ESRI shape file, or may be submitted as an ASCII point file. All points must be attributed to include the type of structure and the following items (in addition to geographic location):

<u>Component</u>	<u>Location Point</u>	<u>Attributes</u>
Valve	Center of Lid	size, type, mfg, yr, depth of valve
Hydrant	Center Top	size, type, mfg, yr, depth of bury
PRV	Center Hatch	size, elevation @ top of pipe, mfg, yr
Meter	Center Box	size, type, mfg, yr
Air Vac	Center Box	size, type, mfg, yr
Blow-off	Center Box	size, type, mfg, yr

GENERAL NOTES:

1. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS SPECIFIED IN THE CROSS VALLEY WATER DISTRICT STANDARD SPECIFICATIONS AND STANDARD DETAILS.
2. ALL WORK IN ROAD RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH SNOHOMISH COUNTY DESIGN STANDARDS AND SPECIFICATIONS. NO WATER LINE SHALL BE CONSTRUCTED AT DITCH OR SWALE CENTERLINE.
3. EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE CORRECT LOCATIONS BEFORE DIGGING. THIS MAY BE DONE BY CALLING 1-800-424-5555 or 811 FOR THOSE UTILITIES PARTICIPATING IN ONE-CALL AND BY DIRECT CONTACT OF ALL OTHER AFFECTED UTILITY COMPANIES OR MUNICIPALITIES.

4. THE CONTRACTOR SHALL LOCATE AND VERIFY OTHER UNDERGROUND IMPROVEMENTS PRIOR TO CONSTRUCTION.
5. DUCTILE IRON PIPE SHALL BE STANDARD THICKNESS CLASS 52 CEMENT LINED, UNLESS OTHERWISE NOTED ON PLAN OR IN THE STANDARDS.
6. ALL PIPE SHALL BE POLY WRAPPED PER AWWA C105 AND INSTALLED WITH LOCATOR WIRE PER THE ENGINEERING SPECIFICATIONS.
7. ALL PIPE SHALL BE INSTALLED WITH IMPORT PIPE BEDDING PER THE ENGINEERING SPECIFICATIONS.
8. ALL SERVICES SHALL BE SINGLE WITH 1" PIPE PER STANDARD DETAIL UNLESS DEVELOPER REQUESTS A LARGER METER.
9. ALL VALVES SHALL BE DUCTILE IRON BODY, RESILIENT SEAT GATE VALVES PER THE ENGINEERING SPECIFICATIONS.
10. THE CONTRACTOR SHALL GIVE CROSS VALLEY WATER DISTRICT A MINIMUM OF 72 HOURS' NOTICE PRIOR TO CONNECTING TO THE EXISTING SYSTEM. DEPENDING ON WEATHER OR CUSTOMERS THE DEVELOPER WILL BE REQUIRED TO PROVIDE EMERGENCY WATER IF REQUESTED.
11. CONSTRUCTION SHALL NOT BEGIN WITHOUT WRITTEN APPROVAL OF CROSS VALLEY WATER DISTRICT.
12. THE CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES IN CONFORMANCE WITH SNOHOMISH COUNTY REQUIREMENTS, INDUSTRY STANDARD BEST MANAGEMENT PRACTICES AND REQUIREMENTS INCLUDED IN PROJECT GRADING, STORM DRAINAGE AND T.E.S.C. PLANS AND SPECIFICATIONS.

OWNER UPON COMPLETION:

CROSS VALLEY WATER DISTRICT
 8802 180th STREET SE
 SNOHOMISH, WASHINGTON 98296-4804

4. Approval Signatures.

All plans shall have provisions for approval signatures of the Cross Valley Water District, as indicated below.

APPROVED _____
Cross Valley Water DistrictDate

5. Submittal of Approved Plans to District.

After the plans have been approved by the District, the Developer shall furnish the District an electronic copy and three full size sets of paper copy. After the Developer has provided the District with the approved electronic copy required above, the District will obtain the right-of-way permit from the appropriate governmental agency.

7. EVIDENCE OF INSURANCE.

The Developer shall provide the District with written evidence of insurance covering public liability and property damage. The District and the Engineer shall be named as additional insureds. The coverage limits shall be not less than the amounts provided in Paragraph 4b of the General Construction Provisions.

8. HOLD HARMLESS PROVISION.

The Developer shall indemnify, defend and hold the District and the District's officials, employees, agents and engineers ("Indemnitees") harmless from and against all losses and claims, injuries, demands, payments, suits, actions, recoveries, costs, expenses and judgments of every nature and description, including attorney's fees, brought or recovered against the Indemnitees arising out of or in connection with the performance of any work relating to the extension, or any act or omission of the Developer, and for any cost or expense incurred by any Indemnitee in connection therewith, including overhead expense and reasonable attorney's fees and costs attributable thereto; except for damages caused by the sole negligence of an Indemnitee. If suit in respect to the foregoing is filed, then the Developer shall appear and defend the same at its own cost and expense, and if judgment is rendered or settlement made requiring payment of damages by the District, then the Developer shall pay the same.

The Developer shall indemnify, defend and hold the Indemnitees harmless from any liability or expense, including reasonable attorney's fees, by reason of the Developer's (or Developer's employees or contractors) breach of any covenant contained in any franchise or permit granted by state, city, or public or private utility to the District for the purpose of enabling the Developer to undertake construction within any right-of-way or on any off-site property.

Should a court of competent jurisdiction determine that this Agreement is subject to RCW 4.24.115, then, in the event of liability for damages arising out of bodily injury to persons or damages to property caused by or resulting from the concurrent negligence of the Developer, or the Developer's agents, and the District, the Developer's liability under this Section shall be only to the extent of the Developer's or the Developer's agent's negligence. It is further specifically and expressly understood that the indemnification provided in this Section constitutes the Developer's waiver of immunity under Title 51 RCW, relating to Industrial Insurance, solely for the purposed of this indemnification. THIS WAIVER HAS BEEN MUTUALLY NEGOTIATED BY THE PARTIES

In any claim against an Indemnitee by any employees of the Developer, its contractor, or any subcontractor, or anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation contained herein shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Developer, Contractor, or any subcontractor under Workmen's Compensation Acts, Disability Benefit Acts, or other employee benefit acts. THIS WAIVER HAS BEEN MUTUALLY NEGOTIATED BY THE PARTIES.

The provisions of this Section 8 shall survive the expiration or termination of this Agreement.

9. CONTRACTORS, SUBCONTRACTORS, LABORMEN AND MATERIALMEN.

The District has a substantial interest in determining that the extension is to be constructed and connected to the existing system of the District in a good, workmanlike manner and, therefore, the Developer and/or additional owners agree to submit the names of all contractors, subcontractors, materialmen and suppliers, or in the event that the owner or additional owners are contractors, then a statement that the Developer or additional owners will perform the improvement, and the District reserves the right to approve or disapprove of the same, which approval the District will not unreasonably withhold. However, in determining whether the Developer, additional owner, contractor, subcontractor, materialmen, or laborer is or is not satisfactory, the District can take into consideration said parties' prior experience in said improvements, available manpower and equipment, financial ability, prior work performed by said

party for or on behalf of the District, and the recommendation of the District's engineer. The name shall be submitted to the District no later than 14 days prior to any construction being performed pursuant to this Agreement and, if the party is not acceptable to the District, the District will so notify the Developer within five business days after notification is given to the District, whereupon the Developer and/or additional owner shall re-submit alternates and said alternates shall likewise be subject to the same approval, upon the same criteria as the original party submitted, and notification will be given by the District within the same period of time specified.

Work shall be done only by contractors experienced with installing water mains.

10. NO THIRD PERSON SHALL HAVE ANY RIGHTS HEREUNDER.

This Agreement is made entirely for the benefit of the District and the Developer and successors in interest and no third person or party shall have any rights hereunder whether by agency or as a third-party beneficiary or otherwise.

11. PERFORMANCE BOND/MAINTENANCE BOND.

The Developer shall furnish to the District an assurance device (cash or performance bond) of a type and in a form approved by the District in an amount equal to the District Engineer's estimated cost of the project, or actual cost, if known, whichever is less, prior to the staking of the extension for construction. The assurance device shall require completion of all work within a period of two years from the date of this Application with the District in accordance with the provisions of this Application and that any defective work or material discovered by the District within two years after the extension has been accepted shall be corrected or replaced by the Developer in accordance with this Application.

The assurance device shall also secure payment by the Developer of all persons furnishing labor and materials and shall hold the District harmless from any claims thereof, whether any such claim should arise under the public works lien statutes, or the mechanics lien statutes of the State of Washington, and compliance with the formal requirements of either or both of said statutes shall not be a condition to recovery under said assurance device.

The District shall not be obligated to provide water service to the property described in this Agreement if construction by third parties of facilities to be deeded to the District has not been completed and title accepted by the District if such third-party facilities are necessary to provide water service to the property.

Such acceptance by the District shall not relieve the Developer of the obligation to correct defects in labor and/or materials as provided in this Agreement and/or the obligations set forth in applicable paragraphs hereof. After acceptance of the extension by the District and the transferring of title to such extension to the District, the Developer shall furnish to the District a maintenance bond (cash or bond) which shall continue in force from the date of acceptance of said extension for a period of two years. The bond shall be in a form as contained herein and shall require the Developer and/or the bonding company to correct defects in labor and materials which arise in said system for a period of two years from the date of acceptance of the system and transfer of title.

12. STATE AND/OR SNOHOMISH COUNTY BOND.

The Developer shall furnish bonds required for work in State or County rights-of-way.

13. EASEMENTS.

Any required easements, including off-site easements, shall be obtained by the Developer at their sole cost and expense and a true copy of such easement, on the standard Cross Valley Water District form, shall be delivered to the District prior to the time the Developer commences construction under this Agreement. All easements shall be reviewed and approved by the District's Engineer prior to obtaining signatures and approvals for recording. Upon completion of construction and prior to acceptance of said extension by the District, the original easement shall be delivered to the District. The Developer shall provide all necessary easement(s) at their sole cost regardless of changes in the Contract Plans, together with evidence of title. A title insurance policy in sum not less than \$1,000 per 500 feet of easement may be required by the District for any off-site easements, establishing clear title in grantor.

In the event that legal services are required incident to easements beyond review of the form thereof, the costs of such services shall be paid by Developer in the amount as billed to the District before acceptance of the proposed extension.

14. PERMITS.

All the necessary permits from any governmental agency shall be obtained by the Developer directly or, if required, the District will obtain the same, but at Developer's expense; and the District shall be provided with a copy of all such permits before construction commences. The Developer shall reimburse the District for all District costs incurred on the Developer's behalf for permits, inspection fees and other charges imposed by any governmental authority.

If the development work occurs within the Right-of-Way of unincorporated Snohomish County or the Washington State Department of Transportation (WSDOT), a utility permit is required from the County or WSDOT for the Developer Extension. The District shall apply for the utility permit and provide a copy to the Developer upon approval.

15. GRADING OF ROADS.

The Developer shall grade all roads to the design subgrade elevation prior to the start of construction and shall advise the District in writing of any changes which may be contemplated during construction. If the Developer changes the subgrade elevation of the road after completion of the extension, or any part thereof, the Developer shall be responsible for all costs incurred to raise or lower the water lines and/or water services as required to return water line to design depth, as a result of said change in subgrade elevation. This obligation shall remain in full force until Snohomish County or other applicable agency having jurisdiction over the streets and roadways releases the right-of-way or road construction bond or bond of other description in connection with the Developer's obligation to the County for restoration of the roads and streets on which construction has been performed or affected.

16. MAINTENANCE OF CORRECT ALIGNMENT AND GRADE.

The Developer and their Contractor shall maintain the correct alignment and grade. The Developer and their contractor shall make gradual changes in grade and provide straight grades through localized breaks in grade. The District requires approval of the use of vertical bends and all options shall be explored prior to the use of vertical bends.

17. CONNECTION TO THE DISTRICT'S SYSTEM.

Not less than 72 hours prior to the time that the extension is partially or fully completed and connection to the District's system is desired, written application for permission to make the actual connection to the District's system at a specified time shall be made by the Developer or their Contractor. All connections to the existing system and all testing of the new line shall require authorization of the District and its Engineer and/or their authorized representatives.

Opening of valves and use of water from the District's system will be done by the District and/or its authorized representative. The District reserves the right to require that connections be made by live tap where disturbance of water service would, in the opinion of the District, be unduly detrimental. The District may elect to make connections to the existing system and the Developer shall pay all costs for the connection.

18. CONDITION PRECEDENT.

Compliance with the terms and conditions of this Agreement and all applicable resolutions of the District shall be a condition precedent to the District's obligation to accept a bill of sale and a condition precedent to the District's agreement to maintain and operate the water system and to provide water service to the real property that is the subject of this Agreement and, particularly, without limiting the generality of the aforesaid, the District shall be under no obligation to allow connections to the water system of any portion of the property described in this Agreement if there are any fees or costs due and owing to the District arising from this Agreement or from regulations, resolutions, or ordinances of any governmental agency.

The District shall not be obligated to provide water service to the property described in this Agreement if construction by third parties of facilities to be deeded to the District have not been completed and title accepted by the District if said thirty party facilities are necessary to provide water service to the property described in this Agreement.

19. ACCEPTANCE FOR USE AND OPERATION.

SUBDIVISIONS. At such time as the extension is partially completed or it is not ready for acceptance of title by District by reason of other uncompleted plat improvements, and one or more residences therein are in need of water service, the District may, in its absolute discretion, accept the extension or any portion of the extension in a platted subdivision for use and operation only and authorize temporary water service to designated residences. In order to ensure that the Developer will complete the extension in the entire subdivision or specific phase thereof for which this Application is filed, the District reserves the right to designate the number of residences or other structures which can be connected to the facilities for temporary services upon acceptance of a partially completed extension for use and operation by the District. The District also reserves the right to refuse to connect all residences or other structures to the water system as installed until the District can be assured that the extension will be completed in accordance with this Application.

OTHER EARLY/CONDITIONAL ACCEPTANCE. The Developer may request a conditional acceptance if all final acceptance documentation, excluding the maintenance bond, and all work is completed, but before the final paving, facility raising, and other related work has been completed.

If the Developer requests conditional acceptance of the water facilities under this provision, the District will grant conditional acceptance of the water facilities for use and operation on the condition that the Developer furnishes the District with a performance guarantee to guarantee installation and completion of all required work and improvements in accordance with this Agreement and all District resolutions, policies and standards, and the performance of all of the Developer's obligations under this Agreement. The Developer shall furnish the District with cash in lieu of a corporate surety maintenance bond as the required performance guarantee.

The request for conditional acceptance of the extension will be brought before the Board of Commissioners for approval of the request by motion. After the Developer notifies the District that the final paving or other remaining work is complete and the work is to District standards and specifications, the extension will move to final acceptance.

20. FINAL ACCEPTANCE.

The District agrees to accept title to the extension at such time as all work which may, in any way, affect the extension has been completed, any damage to any portion of the District's water system which may have been caused by the Developer or the extension has been repaired, and District's Engineer has made final inspection and given approval of the extension as having been completed in accordance with the plans and Specifications.

The Developer shall execute and deliver to the District a Certificate of Cost, Bill of Sale and Affidavit of No Liens in the form approved or furnished by the District containing the warranty set forth in the General Construction Provisions, entitled, "Contractor Responsibility for Work". Upon acceptance of title by the District, the extension shall be subject to the control, use and operation of the District and all regulations applicable to service and charges for service as established by District from time to time. All District fees and costs must be paid, and all required easements provided prior to acceptance.

All work in County or State rights-of-way must be approved in writing by those entities having jurisdiction.

The District's acceptance of the extension shall not relieve the Developer of the obligation to correct defects in labor and/or materials as provided in the Agreement and/or any other obligation stated in this Agreement. After acceptance of the extension by District and the transferring of title to the extension to the District, the Developer shall provide the District a maintenance bond in the form required by the District, which shall continue in force from the date of acceptance and transfer of title for a period of two (2) years. The bond shall require the Developer and the bonding company to correct defects in labor and material which arise in the extension for a period of two (2) years from the date of acceptance and transfer of title.

The date of acceptance shall be the date the Board of Commissioners accept the extension by resolution.

21. LIMITATION OF PERIOD FOR ACCEPTANCE.

The extension shall be completed and finally accepted within two years of date of acceptance of this Application and Agreement by the District. If the extension is not completed and finally accepted within the two-year period, then the Developer's rights under this Agreement shall cease and no additional service shall be connected to such extension unless and until Developer shall make a new Application or the District consents to the renewal of the existing Application and the Developer shall pay the additional administrative, legal, engineering, and inspection costs involved, all as determined by the District.

If an extension is not completed within the two-year period, the District may require that it be made to comply with any new or amended resolutions of policies, including those related to any increased fees or connection charges, which have taken effect since execution of the original Application and Agreement before the District accepts the extension. Any required new Application or renewed Application shall be subject to any new or amended resolutions of policy which have been adopted by the Board since execution of the original Application.

If District determines, in its absolute discretion, that it is necessary that the extension be completed in order that the District can provide water service to other property and completion of the extension is necessary to provide water service to other property, then, in such event, the District may give the Developer or additional owners notice that construction of the water improvements must be commenced within sixty (60) calendar days of the notice by the District; provided, that plans have been prepared by the District and submitted to the Developer and/or additional owners and, if construction is not commenced within the time specified, then the District may, at its discretion, determine that this Agreement is terminated and the District shall retain all payments made by the Developer to the District and the District shall be free to proceed with construction of the water improvements within the area described in this Agreement. If delay in plans is occasioned by failure of the Developer to provide necessary data to the District's Engineers for a

period of thirty (30) days after notice, then this Agreement likewise can be terminated, and the District may proceed with construction of the improvements as described above.

22. WARRANTY OF AUTHORITY.

The undersigned Developer and additional owners warrant that they constitute the owners of all of the real property that is the subject of this Agreement and, upon request of the District, agree to provide title insurance or preliminary title report, at the District's option, establishing to the satisfaction of the District that the parties executing this Application and Agreement constitute the owners of all the real property described and have the authority to execute this Agreement with respect to said real property.

23. NO ASSIGNMENT/SUBCONTRACTING WITHOUT DISTRICT APPROVAL

The Developer shall not assign this Application and Agreement to another person or entity WITHOUT the prior, written consent of the District. The District may require, as a condition of its approval of said assignment, that the assignee shall be subject to any new or amended resolutions or policy which have taken effect since execution of the original Application and Agreement. The form of assignment shall be in a form approved by the District.

The Developer shall not sublet this Agreement or any part thereof, without the prior written consent of the District which shall be obtained at least five days prior to start of a proposed subcontractor's work.

No subcontractor will be recognized as such, and all persons engaged in the work will be considered by the District as employees of the Developer, and their work shall be fully subject to the provisions of this Agreement. The Developer shall be fully responsible to the District for all work, and all acts and omissions of the subcontractors and persons either directly or indirectly employed by the subcontractors.

The District's consent to subcontracting any part of the work shall not relieve the Developer of any of their obligations under this Agreement, nor from any responsibility for performance of the work.

24. GOVERNING LAW/FORM

This Application and Agreement shall be construed and enforced in accordance with, and the validity and performance hereof shall be governed by the laws of the State of Washington. Any suit to enforce the provisions of this Application and Agreement shall be brought in Superior Court, Snohomish County, Washington.

25. ATTORNEY'S FEES AND COSTS

In the event either the District or the Developer employs an attorney to enforce or defend any claim or cause of action arising out of or relating to this Application and Agreement, or any appeal therefrom, then in any such event, the prevailing party shall be entitled to recover from the losing party, and the losing party shall pay, all of the prevailing party's reasonable cost and attorney's fees therein incurred.

DATED at _____, Washington, this date of _____ 20_____.

Name of Developer/Company

	<hr/>
	Address
<hr/>	<hr/>
Owner/Representative	City/State
<hr/>	<hr/>
Owner/Representative	Email
<hr/>	<hr/>
Owner/Representative	Telephone

STATE OF WASHINGTON)
) ss
COUNTY OF SNOHOMISH)

I certify that I know or have satisfactory evidence that _____ and _____ signed this instrument, on oath stated that they were authorized to execute said instrument as President and Secretary of _____ and acknowledges said instrument at _____ the President and Secretary of _____ to be free and voluntary act of said corporation for the uses and purposes mentioned in said instrument.

Dated _____

Notary Public in and for the State
of Washington, residing at _____

My Appointment Expires: _____

STATE OF WASHINGTON)
) ss
COUNTY OF SNOHOMISH)

I certify that I know or have satisfactory evidence that _____ and _____ signed this instrument and acknowledged it to be their free and voluntary act for the uses and purposes mentioned in the instrument.

Dated _____

Notary Public in and for the State
of Washington, residing at _____

My Appointment Expires: _____

Accepted by Board of Commissioners at their _____, 20____, meeting.

Cross Valley Water District



**GENERAL CONDITIONS
FOR JOBS CONSTRUCTED BY DEVELOPERS**

- | | | |
|----|-------------------------------|-------|
| 1. | Scope | GC -1 |
| 2. | Definitions | GC -1 |
| 3. | Certificate of Extension Cost | GC -3 |
| 4. | Reimbursement Agreement | GC -3 |
| 5. | Conditional Use | GC -3 |

GENERAL CONDITIONS
FOR JOBS CONSTRUCTED BY DEVELOPERS

1. SCOPE

These are general conditions to all contracts for extension of the District's water system by Developers. Reference to, or requirements for, non-applicable conditions for any particular contract will be construed to have no meaning relative to the performance of such work.

2. DEFINITIONS

The following terms as used in this contract shall be defined and interpreted as follows:

- a. "Agreement," "This Agreement," "Contract" or "This Contract": The application for permission to construct an extension to the water distribution system executed by the Developer and the District of which these general conditions are an integral part.
- b. "Contract Documents": All of the documents and information hereafter set forth in subparagraph (v).
- c. "District": Cross Valley Water District of Snohomish County, Washington.
- d. "Developer": The person, partnership, firm or corporation having an agreement with the District to cause the installation of water improvements to become a part of the District water system upon completion and acceptance. The term shall also include the Developer's agents, employees, and subcontractors.
- e. "Contractor": The person or firm that actually constructs the water system improvements. This may be the same party as the Developer.
- f. "District Engineer": The District's Engineer or their duly authorized personnel, acting as Engineer for the District in the administration of this Contract, for the benefit of the District in accordance with the Contract Documents.
- g. "Developer Engineer": The engineering firm, and that firm's representatives, which may be retained by the Developer at its option, to design and prepare the plans for the work to be performed under this Agreement in accordance with District Specifications.
- h. "Extension": The system of water mains and appurtenances or other water system improvements to be constructed in whole or in part through the performance of this Contract.
- i. "Plans": The plans shall mean all official drawings or reproductions of drawings made or to be made pertaining to the work provided for in this Contract or to any structure that will be connected to the District's system under this Contract.
- j. "Specifications": The specifications shall mean the prescribed directions, requirements, explanations, terms and provisions pertaining to the various features of work to be done or manner and method of performance and the manner and method of measurement and payment. They also include directions, requirements and explanations as set forth in the plans.

"Reference Specifications": Reference specifications shall mean the technical specifications of other agencies incorporated or referred to herein.

- k. "Work": The work necessary to manufacture and deliver the machinery, equipment, and material and/or furnish all labor, tools, materials, equipment, construction equipment, working drawings, where required, and other necessities for the construction or erection of the structures shown and called for in the plans, specifications, and Contract and the act of constructing or erecting such structures complete.
- l. "Material or Materials": These words shall be construed to embrace machinery, manufactured articles, materials or construction (fabricated or otherwise) and any other classes of material to be furnished in connection with the Contract.
- m. "Equipment": The machinery, accessories, appurtenances, and manufactured articles to be furnished and/or installed under the Contract.
- n. "Developer's Equipment": The phrase "Developer's Equipment" shall include all items of materials or equipment remaining in the Developer's ownership and removed from the site upon completion of the project.
- o. "Or Equal": Any manufactured article, materials, method of work which, in the opinion of the District's Engineer, is equally desirable or suitable for the purposes intended in these specifications and contract as compared with similar articles specifically mentioned herein.
- p. "Contract Drawings" or "Drawings": All details or drawings prepared and issued by the Engineer subsequent to the signing of the Contract for future explanation of amplification of the Contract Drawings or for revision of same.
- q. "Supplemental Drawings and Instructions": Engineer may furnish, as their sole discretion, upon written request by the Developer, with reasonable promptness, additional instructions by means of drawings or documents necessary, in the opinion of the Engineer, for the proper execution of the work. All such drawings and instructions shall be consistent with the Contract Documents.
- r. "Shop Drawings": All shop details, structural steel pipe, machinery, equipment, schedules, bending diagrams, reinforcing steel, and other detail drawings furnished by the Developer as required and provided for in the Specifications.
- s. "Words and Phrases": Wherever the words, "as directed", "as required", "as permitted", or words of like effect are used, it shall be understood that the direction, requirement or permission of the District and the Engineer is intended. The words, "sufficient", "necessary", "proper", and the like shall mean sufficient, necessary or proper in the judgment of the District and the Engineer. The words "approved", "acceptable", "satisfactory", and words of like import shall mean approval of or acceptable to the District and the Engineer.
- t. "Surety": Any firm or corporation executing a surety bond or bonds payable to the District securing the performance of the Contract, either in whole or in part.
- u. "Points": Wherever reference is made to the Engineer's points, this shall mean all marks, bench marks, reference points, stakes, hubs, tacks, etc., established by the Engineer for maintaining horizontal and vertical control of the Work.
- v. "Contract Document": The Contract Documents shall consist of the following, and in the case of conflicting provisions, the first mentioned shall have precedence:
 - 1) Applications for permission to construct extension to water system.
 - 2) Change orders after application is signed.
 - 3) Detail drawings and written instructions.
 - 4) Addenda

- 5) Plans
- 6) General Conditions
- 7) Special Provisions
- 8) General Specifications
- 9) Reference Specifications
- 10) Performance Bond

3. CERTIFICATE OF EXTENSION COST

The Developer shall provide the District a Certificate of Cost for all water system improvements installed under this Agreement. The format shall be as shown on the Certificate form herein.

4. REIMBURSEMENT AGREEMENT

The District shall, upon request, enter into an agreement for reimbursement with the Developer for those properties that can be served from the construction of a water extension that are not a party to this Agreement. Application for reimbursement shall be made prior to final acceptance of the extension improvements under this Agreement. The reimbursement will be in accordance with current policies of the District.

The Developer shall pay the costs of preparing the reimbursement agreement; spreading of the costs to benefited properties and filing with Snohomish County.

The Developer shall provide copies of invoices for certification of costs.

The District policy presently provides for reimbursement to the Developer for the differences in pipeline material costs for those pipelines over 8" in diameter that the Developer installs and are accepted by the District. Costs for reimbursement shall be based on pipe prices published in the most recent edition of "R.S. Means Heavy Construction Cost Data", using the "30 city average" adjusted to Seattle by applying the city cost index for site work. In industrial/commercial areas and/or projects such churches, schools, apartments, and other businesses, where higher fire flows are required, no cost reimbursement for over-sized piping is allowed. Minimum line size in industrial/commercial, and/or projects such churches, schools, apartments, and other businesses, areas shall be 12" in diameter as determined by the District.

5. CONDITIONAL USE

A conditional use prior to acceptance by the District for operation and maintenance may be granted when a governmental agency requires that a fire hydrant(s) be installed and activated prior to commencement of building construction. The Developer may request and receive approval to activate such newly installed fire hydrants only after a successful pressure test of the water system and an approved bacteriological test sample has been received.

In granting this approval, the District is in no way indicating acceptance of the extension improvements in their entirety. No service shall be provided to any building, structure, or the site until after acceptance of the extension by the Board of Commissioners.



GENERAL CONSTRUCTION PROVISIONS

- | | |
|--|---------|
| 1. Plans, Specification; Omissions and Discrepancies | GCP -1 |
| 2. Preparations for Construction | GCP -1 |
| 3. Status of Engineer | GCP -1 |
| 4. Permits, Licenses, Performance and Guarantee Bond | GCP -2 |
| 5. Construction Staking | GCP -3 |
| 6. Easements | GCP -4 |
| 7. Interferences and Obstructions | GCP -4 |
| 8. Existing Facilities | GCP -4 |
| 9. Safety Standards | GCP -6 |
| 10. Preventative Street Cleaning | GCP -8 |
| 11. Water Supply | GCP -8 |
| 12. Sanitary Provisions | GCP -8 |
| 13. Observation of Work and Materials | GCP -8 |
| 14. Plans and Specifications Accessible | GCP -9 |
| 15. Ownership of Drawings | GCP -9 |
| 16. Shop Drawings | GCP -10 |
| 17. Determination for "Or Equal" | GCP -10 |
| 18. Royalties and Patents | GCP -10 |

GENERAL CONSTRUCTION PROVISIONS

1. PLANS AND SPECIFICATIONS; OMISSIONS AND DISCREPANCIES.

The Developer shall carefully study and compare all drawings and specifications and other instructions and shall, prior to ordering materials or performing work, report in writing to the Engineer any error, if inconsistency or omission in respect to design, mode of construction or cost which they may discover. If the Developer in the course of this study or in the accomplishment of the work, finds any discrepancy between the drawings and the physical condition of the locality as represented in the drawings or any such errors or omissions in respect to design, mode of construction or cost in drawings or in the layout as given by points and instructions, it shall be their duty to inform the Engineer immediately in writing, and the Engineer shall promptly check the same. Any work done after such discovery shall be done at the Developer's risk.

2. PREPARATIONS FOR CONSTRUCTION.

Prior to beginning work, arrangements shall be made for a preconstruction conference to be attended by the Developer, the Contractor, District representatives, and other representatives of interested utilities and agencies. The pertinent points to be discussed at this conference shall include work schedules, safety, traffic control, other utilities involved, method of construction, bond requirements, restoration, observation, easements, and other related items.

a. Commencement of Work on Public and Private Right-of-Way.

The Developer/Contractor shall apply for and obtain a construction permit to work within the Snohomish County rights-of-way or WSDOT rights-of-way from the Cross Valley Water District prior to commencement of any work.

Application to the District shall be made in ample time in advance of construction so that the construction permit is approved by the local governing authority and in the Contractor's possession at least 72 hours prior to start of construction.

Work shall not be started on any public or private right-of-way until clearance is given to the Contractor by the District. Unless otherwise directed in writing by the District, the Contractor shall limit their working hours to the governing authority's standards.

b. Construction Schedule.

The Contractor shall coordinate their schedule with the District and with other public agencies concerned, including, but not limited to, the Snohomish County Engineering, U.S. Post Office, fire departments, schools, sewer districts, power companies, Puget Sound Energy, Williams Pipeline, Cable TV, local phone companies, and Olympic Pipeline.

c. Complaints.

Whenever the Contractor fails to repair or restore existing improvements damaged by their operations within twenty-four (24) hours of written notice of complaint from the District, the District may order said work done by others and all costs incurred shall be paid by the Developer.

3. STATUS OF ENGINEER.

- a.** The Engineer shall have general administration and observation of the work; provided, however, nothing contained herein or elsewhere in the Contract Documents shall be construed as requiring the Engineer to direct the method or manner or safety of performing any work by the Developer under this Contract. The Engineer has the authority to stop work whenever, in their opinion, such stoppage may be necessary to insure proper

execution of the Contract. The Engineer may also reject all work and materials which, in their opinion, do not conform to the Contract.

- b. It is understood and agreed by and between the parties that the work included in the Contract is to be done under the general observation and to the complete satisfaction of the Engineer or their duly authorized representative and the decision of the Engineer, as to the true interpretation and meaning of the contract plan, specifications and estimates and as to all questions arising as to proper performance of the work, shall be final.
- c. The Engineer shall decide any and all questions which may arise as to the quality or acceptability of materials furnished and work performed and all questions as to the acceptable fulfillment and performance of the Contract on the part of the Developer. The decision of the Engineer in such matters shall be final.
- d. The Engineer may direct the sequence of conducting work when it is in locations where the District is doing work either by contract or by its own forces or where such other works may be affected by the Contract, in order that conflict may be avoided and the work under these specifications be harmonized with that under other contracts, or with other work being done in connection with, or growing out of, operations of the District.

Nothing herein contained, however, shall be taken to relieve the Developer of their obligations or liabilities under the Contract.

- e. Neither the Engineer nor their representatives have the authority to waive the obligation of the Developer to perform work in accordance with the Contract Documents. Failure or omission on the part of the Engineer or their representatives to condemn unsuitable, inferior, or defective work and/or labor or materials or equipment furnished under the contract shall not release the Developer or the bond for performing the work in accordance with the Contract Documents.

4. PERMITS, LICENSES, PERFORMANCE AND GUARANTEE BOND.

a. Contractor Responsibility for Work.

The Developer shall be responsible for all work until its acceptance by the District and will not be released from responsibility for any part of the work until two (2) years after written acceptance by the District. The Developer guarantees that all of the work, materials, or equipment furnished by him under these specifications will meet fully all requirements for quality of workmanship, materials, strength and any and all other requirements whatsoever prescribed in the specifications.

The Developer further agrees that, upon notice given by the District at any time within a period of two years after the date of final written acceptance by the District of said work, structure or equipment, they will promptly, and with the least possible delay and inconvenience to the District, replace, ready for operation and without expense to the District, any part or parts of same which may give evidence of undue strain or undue depreciation or which may prove defective in material or inefficient or otherwise unsatisfactory in operation through faulty construction or workmanship or through any fault of design or detail arising with Contractor or manufacturer. Such items shall be replaced in accordance with designs and of material satisfactory to the District. Should the Developer fail to act promptly in accordance with this Agreement or should the exigencies of the case require repairs or replacements to be made before the Developer can be notified or can respond to the notification, the District reserves the right to make the necessary repairs or replacement at the expense of the Developer.

The Developer shall be responsible for the full expense incidental to implementing any and all of the above guarantees and agreements, including transportation charges and cost of dismantling and reassembling equipment.

b. Insurance.

The Contractor shall carry Public Liability Insurance for bodily injury and property damage liability, including without limitation, coverage of explosion, blasting, collapse, and destruction of underground utilities (X.C.U.) and contingent liability, including products and complete operations and blanket contractual liability, covering all work under this Contract including that done by subcontractors. This insurance shall name the District and the Engineer as additional insured and shall be primary coverage with any insurance carried by the District classified as additional coverage. The amount of such insurance shall be as follows: Bodily injury liability insurance and property damage liability insurance in an amount not less than \$1,000,000 for injuries, including wrongful death, to any one person and subject to the same limit for each person, in an amount not less than \$1,000,000 on account of any one occurrence, \$1,000,000 for each occurrence or equivalent single limit. Alternatively, the aforementioned bodily injury and property damage liability insurance furnished under a combined single limit, or an umbrella excess liability limit in an amount of not less than \$2,000,000 combined single limit per occurrence, will be acceptable.

Asbestos pipe removal insurance requirements for asbestos pipe removal shall be in accordance with Paragraph 9c., General Construction Provisions.

c. Federal, State and Local Regulatory Agencies.

The Developer and Contractor shall be responsible for investigating and complying with the requirements of the several Federal, State and local agencies, including, but not limited to, the Federal Environmental Protection Agency, the State Department of Ecology, the Department of Fisheries and Game and Snohomish County for the types of work included in the work. This shall include requirements and provisions relating to the Endangered Species Act, such as Snohomish County Habitat Management Planning, Title 24 Drainage requirements, wetland and stream mitigation and downstream drainage analyses.

The Developer or Contractor shall contact the above-mentioned departments and secure such permits and bonds as may be necessary for the operations and to approve the proposed method of operation. Copies of all permits and bonds shall be submitted to the District prior to construction. The Developer or Contractor shall provide notice to the District in the event said departments waive jurisdiction in the area of construction.

Foreign materials, including silt, gasoline, wet concrete and debris, shall not be allowed to enter any stream. Water pumped from the construction area shall be filtered to remove silt before being discharged to any stream. Filtering shall be provided as required by local jurisdiction.

5. CONSTRUCTION STAKING.

All construction staking shall be provided by the Developer's engineer. Should construction staking be required of the District Engineer, the following shall apply:

- a. Developer shall provide reasonable and necessary opportunities and facilities for setting point and making measurements by Engineer as set forth in the Special Provisions.
- b. Construction staking shall be provided by the District's Engineer upon 72 hours' notice. No construction shall commence until staking has been completed.
- c. Once construction staking has been requested and scheduled, the staking shall proceed on a continuous basis, without interruption until completed.
- d. Construction staking covered under the basic extension fee will consist of one complete set of offset stakes for water line location and stakes to locate fire hydrant, valves and principal fitting, if required.
- e. Developer shall provide a minimum of three (3) horizontal control points and a minimum of three (3) vertical control points in the form of either road centerline stakes, property stakes, or easement centerline stakes to be

utilized by the Engineer in providing construction staking. Construction staking will not begin until adequate horizontal control is in place in the field and at the time construction taking is to be commenced.

f. Construction staking covered under additional fees shall include:

- 1) Location of easements, property lines, and road centerlines.
- 2) Additional offset stakes and offset stakes other than those specified in paragraph 5(d) above.
- 3) Replacement of stakes for any reason.
- 4) Additional work occasioned by obstruction, delay or prevention of staking by the Developer.

The additional fee shall be computed in accordance with the schedule contained in the Application and shall be paid by the Developer to the District prior to acceptance of the extension.

6. EASEMENTS.

When necessary for construction, both temporary and permanent water easements shall be obtained and filed on the standard Cross Valley Water District form with Snohomish County Auditor by the District, at the Developer's cost, **prior to construction.**

Before final acceptance and transfer of title of the extension improvements to the District, the Developer must provide the District with a plat map showing all water easements, and the authorization for granting or transferring such easements to the District.

Work on railroad rights-of-way, State Highways rights-of-way, County rights-of-way, or any other public rights-of-way, other than the District's, shall be in conformance with the requirement of the authority having jurisdiction over such right-of-way. It shall be the Contractor's responsibility to notify said authority before beginning work on the right-of-way and to ascertain the restoration requirements and determine that the schedule of operations proposed is satisfactory to the authority.

7. INTERFERENCES AND OBSTRUCTIONS.

For the convenience of the Contractor, the plans may show approximate location of various existing utilities such as gas lines, telephone cable, water lines, storm drains, and other obstructions based on information obtained from various sources.

This information, if shown, is not guaranteed to be accurate and the Contractor shall check for interferences and obstructions by inquiry from the different utilities and by exploration ahead of the regular excavation. Incompleteness or errors in this information shall not be the basis of any claim against the District or the District's Engineer nor shall it relieve the Developer of responsibility for repairing any damage its activities may cause to such utilities or other improvements. The Contractor shall excavate around and under service pipes with special care and shall support and maintain them. Where it is necessary to cut, move or reconnect any existing pipe, the Contractor shall make necessary arrangement with the utility for such removal and the Contractor shall bear all costs which may be involved.

8. EXISTING FACILITIES.

a. Protection and Maintenance of Public and Private Property.

The Contractor shall protect and maintain all underground and above-ground utilities and structures affected by the work and all lawns, shrubs, fences, rockeries, and other landscaped areas, and parking strips or private property

crossed by or adjacent to their operation, and any damage shall be repaired and restored by the Contractor to the satisfaction of the District.

The Contractor shall protect and maintain any natural water course which exists prior to construction.

Whenever construction work is undertaken on easements or public or private right-of-way, all work shall be confined to the limits of such easements, or right-of-way, and accomplished so as to cause the least amount of disturbance and a minimum amount of damage.

Completion of work across private property shall be carried out in one continuous operation of construction of the facilities with the immediate restoration and cleanup of the construction area. If the Contractor fails to perform such construction and restoration continuously, the District may give the Contractor a written notice to so perform and, in the event of failure by the Contractor to complete such construction and restoration within two weeks of such notice, the District may complete the installation and restoration on such private property to the extent the District deems advisable and the cost of all work, labor, material and expenses incurred by the District in so doing shall be paid by the Developer.

Particular care shall be exercised to see that the topsoil from the trench is preserved and replaced in its original location. It shall be the Contractor's responsibility to strip such topsoil from the trench, or construction area, and stockpile it in such a manner that it may be replaced by him, upon completion of construction. Ornamental trees and shrubbery shall be carefully removed with the earth surrounding their roots, wrapped in burlap and replanted in their original positions within 48 hours. Ornamental trees or shrubbery destroyed or damaged by the Contractor, whether in public or private property, shall be replaced by the Contractor with material of equal quality. Wherever it may be necessary for the Contractor to trench through any lawn areas, the sod shall be carefully cut and rolled and replaced after ditches have been water settled or otherwise properly compacted to the satisfaction of the District and/or the District's Engineers. All work shall be done in a manner calculated to leave the lawn area clean of earth and debris and in a condition as near as possible to that which existed before the work was started.

The Contractor shall not remove, even temporarily, any trees or shrubs which exist on easements across private property or in parking strips without first having notified the property owners or authorities maintaining same.

It is expressly understood that the Contractor shall in particular restore all such easements and rights-of-way to a condition equal to its original condition, or superior, and in a condition satisfactory to the property owners and the District and/or the District's Engineers. It is also understood that any private improvements made within the public right-of-way are included in the above category.

Where the work is done on easements, the Contractor may be required to obtain a written statement of satisfactory restoration from each property owner involved and furnish a copy of said statement to the District. The statement will be required before the work will be accepted by the District.

b. Maintaining Postal Service.

Postal service shall be maintained in accordance with the instructions of the U. S. Post Office Department. The Contractor shall be responsible for moving mail boxes to temporary locations designated by the Post Office-Department, in such position that their usefulness will not be impaired and, at the completion of the work, the Contractor shall replace them in location and in condition satisfactory to the Post Office Department.

It will be the Contractor's responsibility to contact the U. S. Post Office Department for their requirements in maintenance of postal service and to follow the requirements.

In cases where the posts upon which the box or boxes are fastened in such condition that they cannot be reset, the Contractor shall furnish new posts for this purpose at their own expense.

c. Damaging Existing Utilities.

If any damage is done to an existing utility, the Contractor shall notify the particular utility company involved for repairs and shall be responsible for the cost of repairs.

9. SAFETY STANDARDS.

a. General.

In accordance with generally accepted construction practices, the Contractor will be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours.

The duty of the District to conduct construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures in, on or near the construction site.

The Contractor and all subcontractors shall adhere to the requirements of the Occupational Safety and Health Act (OSHA), Washington Industrial Safety and Health Act, and all other Federal, State and local safety and health statutes which may apply.

These construction documents and the joint and several phases of construction contemplated in the Agreement shall be governed at all times by applicable provisions of the Federal law(s) including, but not limited to, the latest amendments of the following:

Williams-Steiger Occupational Safety and Health Act of 1970, Public Law 91-596.

Part 1980 - Occupational Safety and Health Standards, Chapter XVII of Title 29, Code of Federal Regulations.

Part 1518 - Safety and Health Regulations for Construction, Chapter XIII of Title 29, Code of Federal Regulations.

This project, its prime contractor and their subcontractors shall, at all times, be governed by Chapter XIII of Title 29, Code of Federal Regulations, Part 1518 Safety and Health Regulations for Construction (36 FR 75) as amended to date.

The Contractor, at their expense, shall be required to maintain sufficient warning lights and adequate barricades on all trenches and open excavation to protect moving traffic and pedestrians. This shall include not only open trenches but also recently-closed trenches that have not been returned to full and safe operating surface for normal use.

All the necessary flagmen, barricade and detour signs must be furnished by the Contractor, both during working hours and also when the work is suspended during the construction period. The Contractor shall provide such additional barricades and protective devices as will be required to reasonably protect workers and others, as well as animals from deep excavation during the construction period.

Upon failure of the Contractor to provide immediately and maintain adequate suitable barricades, lights and detour signs when ordered to do so, the District shall be at liberty, without further notice to the Contractor or the surety, to provide the same at Developer expense and the District assumes no liability connected therewith.

Signs used for posting shall be consistent with the provisions found in the State of Washington, "Manual on Uniform Traffic Control Devices for Streets and Highways".

Where the location of the work is in proximity to overhead wires and power lines, the Contractor shall coordinate all work with the utility and shall provide for such measures as may be necessary for the protection of the work and workers.

Care must be taken to prevent contamination of the pipeline during construction. Open pipe of fitting ends shall be plugged with a temporary watertight plug overnight or when work is stopped, to prevent contamination of the pipeline.

b. Traffic to be Maintained.

The Contractor shall make suitable, safe, and adequate provision of necessary traffic around, over, or across work in progress.

The Contractor shall conduct their work so as to interfere at little as possible with public travel and shall, at their own expense, provide and maintain suitable bridges, detours, or other temporary facilities for the accommodation of public or private travel, including mail delivery, and shall give reasonable notice to the owners of private drives before interfering with them; provided, however, that such maintenance of traffic will not be required where the Developer has obtained permission from the owners or tenants of private property, or the proper public authority, or both, to obstruct traffic within the said limits and time agreed upon. Access for fire-fighting equipment shall be provided at all times and the Contractor and/or Developer shall keep the local fire protection authorities informed at all times of the location of construction operations and fire lanes.

The Contractor shall also notify the authorities in charge of any municipal, private, or school transportation systems at least 48 hours in advance of road closures that will force a change in the regular routing of the transportation system.

Roadway crossings shall be made in such a way that no more than half of the roadway is closed to traffic at any time except when suitable detours or other arrangements are agreed to.

c. Asbestos Pipe Removal.

The Contractor (person or organization removing asbestos with certified asbestos workers) shall assume ALL risk and all liability for the removal and disposal of the asbestos and the Contractor shall comply with all federal, state and local laws, statutes and regulatory agency regulations and requirements including but not limited to the requirements relating to environmental pollutants and the requirements relating to the removal and disposal of asbestos. The Contractor shall insure that the asbestos removal is pursuant to all state and federal laws and regulations. The Contractor shall be responsible for any and all fines or penalties which may be levied due to the Contractor's violation of any of the aforementioned laws and regulations.

In addition to the other insurance requirements in this Contract, the Contractor shall provide liability insurance for Bodily Injury and Property Damage coverage for asbestos removal and disposal as follows protecting the District, its officers, consulting engineer, and employees from any and all liability rising from the removal and disposal of the asbestos and all work and efforts done incidental and as a consequence to such removal.

The limits of such coverage shall be as follows:

Occurrence Basis

Bodily Injury	\$1,000,000 per occurrence	
Property Damage	\$1,000,000 per occurrence	\$2,000,000 aggregate
<u>Combined Single Limit</u>	\$2,000,000 per occurrence	\$2,000,000 aggregate

Claims Made Basis

Bodily Injury	\$1,000,000 per claim	
Property Damage	\$1,000,000 per claim	\$2,000,000 aggregate all claims one year

Policy shall contain extended reporting of claims for 3 years from completion of the project.

10. PREVENTATIVE STREET CLEANING.

Contractors working dump trucks and/or other equipment on paved streets from the excavation site to the disposal site shall be required to clean said streets at conclusion of each day's operation to the satisfaction of the roadway agency involved.

If the streets are not properly cleaned and/or the condition of the excavation warrants, the District and/or the District's Engineer shall direct the Developer to provide facilities to remove clay or other deposits from tires or between dual wheels before trucks and/or other equipment will be allowed to travel over paved streets. Open type brooms shall not be allowed for street cleaning.

a. Dust Control.

The Developer shall furnish all labor, equipment and means required and shall carry out protective measures wherever and so often as necessary to prevent their operations from producing dust in amounts damaging to property owners. The Developer shall be responsible for any damage resulting from dust originating from their operations. The dust abatement measures shall be continued until all required resurfacing is completed or until the Developer has completed arrangements with the proper authorities whereby is relieved of further responsibility.

b. Water for Streets.

Water upon streets shall be applied by sprinkling with tank trucks equipped with spray bars and control apparatus of suitable design to ensure uniform application of water in the amounts as required.

11. WATER SUPPLY.

Upon request, a construction meter will be provided to accommodate the needs of the Developer for water use during the construction phase. The Developer shall pay the District for this service. Permanent metered water service will not be provided until the water main extension has been accepted by the District for operation and maintenance, all necessary easements have been provided and all fees and charges have been paid.

The Developer shall comply with all state, local and District rules and regulations prohibiting cross-connections. Developer shall install and maintain backflow prevention devices as required by the District in its absolute discretion as a condition of receiving final acceptance of the extension improvements and utility service from the District.

12. SANITARY PROVISIONS.

The Developer shall provide and maintain in a neat and sanitary condition such accommodations for the use of their employees as may be necessary to comply with the requirements and regulations of the State Department of Health and of other bodies or officers having jurisdiction thereover. The Developer shall permit no public nuisance.

13. OBSERVATION OF WORK AND MATERIALS.

District observers are present on the work site to observe the progress of the work and the manner in which it is being accomplished. Failure of the observer to call to the attention of the Contractor faulty work or deviations from the plans or specifications shall not constitute acceptance of the work or create any liability on the part of the District.

All work performed and all materials and equipment furnished and the manufacture and preparation thereof shall be subject to review by the District and Engineer. The District and Engineer shall, at all times, have access to all parts of the work or the shops where any part of the work or equipment may begin preparation or the factories where any materials for use in the work are being, or are to be, manufactured for the purpose of inspection. The Contractor shall,

at all times, maintain proper facilities and provide safe access for such review. The District may reject or accept material and equipment to be incorporated in the work. However, the failure of the District to reject defective material or any other work involving deviations will not constitute acceptance of such work. The presence or absence of an observer on the job shall not relieve the Contractor of their obligation to furnish satisfactory materials and workmanship.

No work shall be backfilled without timely notice to the District of its readiness for review. Should any work be backfilled without approval or consent of the District it must be **uncovered** for examination at the Contractor's expense.

The Contractor shall regard and obey the directions and instructions of the District with reference to correcting any defective work or replacing any materials found to be not in accordance with the specifications and plans and, in case of dispute, the Developer may appeal to the District whose decision shall be final; but, pending such decision, the instructions shall be followed and the Developer shall make no claims on this account.

The Developer is entitled to inspection of materials upon application to the District provided that, should the Developer request the special inspection of materials not yet delivered to the site of work, the Developer shall, if such inspection be granted, pay all costs and expenses of the District and Engineer in making such inspection.

The inspection of water pipe may be performed by the District's Engineer at the manufacturer's plant. The cost of pipe inspection shall be paid to the District by the Contractor as specified at two times payroll cost plus the current Federal gas mileage allowance transportation expense. When inspection is required, at least two (2) days' notice shall be given; otherwise, inspection shall be at the convenience of the Engineer.

However, in the event the manufacturer of said pipe has, in the opinion of the Engineer, previously furnished acceptable, tested pipe on work under the jurisdiction of the Engineer, the District and/or Engineer shall request a certification of the pipe by the manufacturer. Said certification shall certify that material supplied, and for which the certification was requested, is in full compliance and conformance with the drawings and specifications. In the event the pipe so certified does not meet with the requirements set forth. Material testing and inspection shall be done in an independent testing laboratory located in the Puget Sound area. Inspection time shall also include any Engineer's time involved in evaluating the pipe. Certification of the resulting of the tests shall be furnished by the laboratory or agency which performs the tests. Suitability of the pipe shall be based upon conformance to the test requirements.

A complete list of project observation fees is available from the District upon request.

14. PLANS AND SPECIFICATIONS ACCESSIBLE.

- a. The Developer shall be furnished two copies of plans and specifications and **shall keep at least one copy of the same constantly accessible at the construction site.**
- b. Where shop drawings are required to be submitted for acceptance, one copy of the approved shop drawings shall; be kept constantly accessible at the construction site.

15. OWNERSHIP OF DRAWINGS.

All drawings, specifications and copies thereof prepared or furnished by the Engineer are the property of the District. Neither Developer nor Developer's Engineer shall have any rights of ownership, copyright, trademark or patent to the construction drawings or specifications.

The original construction drawing(s), whether prepared by the District's Engineer or the Developer's Engineer, shall be furnished to the District for revision to conform to construction records and shall become the District's property.

16. SHOP DRAWINGS.

The Developer shall check and verify all field measurements. The Developer shall submit with such promptness, as to cause no delay in their own work or in that of any other contractor, three (3) copies, checked and approved by the Developer, of all shop or setting drawings and schedules (all collectively herein referred to as "shop drawings") required for the work of the various trades in the performance of the work or where requested by the Engineer and shall verify all field measurements or conditions to which the shop drawings are applicable. The Engineer shall review them with reasonable promptness making required corrections, including those related to design and artistic effect. The Developer shall make any corrections required by the Engineer and, within one week after receipt of the required corrections, shall file with the Engineer two (2) corrected copies and furnish such other copies as may be needed by the Engineer. The Engineer's acceptance of such drawings or schedules shall not relieve Developer from responsibility for deviations from drawings or specifications, unless the Developer has, in writing, called the Engineer's attention to such deviation at the time of submission and secured the Engineer's written approval nor shall it relieve the Developer from responsibility for errors in shop drawings or schedules.

17. DETERMINATION FOR "OR EQUAL."

The Engineer shall be the sole judge of the question of "or equal" of any supplies or materials proposed by the Developer. The Developer shall pay to the District the cost of tests and evaluations by the Engineer to determine acceptability of alternates proposed by the Developer in accordance with the established rates of the Engineer for time and expense work.

18. ROYALTIES AND PATENTS.

The Developer shall be liable for all suits brought against the District by reason of infringement of patent rights or license on any material, machine, appliance or process that they may use on the work or incorporate into the finished job except where specifically exempted by Special Provisions. The Developer shall defend and hold the District harmless from any such suit, costs of defense and any judgment which may be made or entered against District thereon.



ENGINEERING SPECIFICATIONS MATERIALS AND METHODS

MATERIALS OF CONSTRUCTION

1. General	ES – 1
2. Ductile Iron Pipe	ES – 1
3. Galvanized Iron Pipe and Fittings	ES – 2
4. Polyethylene Plastic Service Pipe	ES – 2
5. Polyethylene Pipe Encasement	ES – 2
6. Ductile Iron Fittings	ES – 2
7. Fire Hydrants	ES – 2
8. Gate Valves, Resilient Seat	ES – 3
9. Butterfly Valves	ES – 3
10. Valve Boxes	ES – 4
11. Valve and Blow-Off Markers	ES – 4
12. Fire Hydrant Guard Posts	ES – 4
13. Meter Boxes	ES – 4
14. Service Saddles	ES – 4
15. Service Materials	ES – 5
16. Residential Domestic and Fire Sprinklers Services	ES – 5
17. Backflow Assemblies	ES – 5
18. Blow-Offs	ES - 5
19. Pressure Reducing Valves	ES - 5
20. Pressure Reducing Valve Stations	ES - 5

METHODS OF CONSTRUCTION

1.	General	ES – 6
2.	Alignment	ES – 6
3.	Trench Excavation	ES – 6
4.	Timbering and Sheeting	ES – 7
5.	Tunneling	ES – 7
6.	Highway Crossing	ES – 7
7.	Laying of Pipe	ES – 7
8.	Laying of Ductile Iron Pipe	ES – 8
9.	Laying of Galvanized Iron Pipe	ES – 8
10.	Foundation, Bedding and Backfill Gravel	ES – 8
11.	Trench Backfill	ES – 10
12.	Concrete Blocking	ES – 10
13.	Fire Hydrant Installation	ES – 10
14.	Guard Post Installation	ES – 10
15.	Valve and Blow-Off Marker Installation	ES – 11
16.	Gate Valve Installation	ES – 11
17.	Butterfly Valve Installation	ES – 11
18.	Valve Box Installation	ES – 11
19.	Air and Vacuum Release Valve Installation	ES – 11
20.	2" Blow-Off Installation	ES – 11
21.	Locating Wire	ES – 12
22.	Water Service Installation	ES – 12

23.	Connection to Existing Water Main	ES – 12
24.	Hydrostatic Tests	ES – 12
25.	Hazard of Asbestos Cement Pipe Removal	ES – 13
26.	Sterilization and Flushing of Water Main	ES – 13
27.	Replacing Road Surfacing	ES – 15
28.	Landscaping, Lawn Removal and Replacement or Reseeding	ES – 17
29.	Erosion and Sediment Control	ES – 18

ENGINEERING SPECIFICATIONS

MATERIALS OF CONSTRUCTION

1. GENERAL.

The type and class of materials to be used shall be as shown on the project plans approved by the District. Where no specific reference is shown, the following Specifications shall govern the materials used. All materials shall be new and undamaged of a known brand, with replacement parts readily available from the general Seattle area. All materials shall be manufactured within one year of installation.

Prior to the installation of any of the facilities required on the project, all materials shall be approved by the District.

No materials shall be delivered to the job site and no construction shall take place until all fees are paid, all bonds and permits obtained, and a pre-construction conference has been held. In addition, no construction shall take place until the District has approved all materials.

All reference specifications herein shall be of the latest revision.

The District requires any new or remodeled developments to construct or be connected to a 12" water main. The current fire flow requirement established by Snohomish County is 1,500 gpm for 2 hours in commercial zoned areas and for multifamily structures over 4,000 sq. ft. To accomplish this fire flow requirement, a 12" water main is necessary throughout commercially zoned areas. The District also recognizes that other potential developments that require this higher fire flow may be constructed in residential (or other) zones throughout the District like churches, private schools, etc., where large parcels were previously used for agricultural purposes. On these development sites, connecting to a 12" water main or constructing a 12" water main will be required. The District will enforce this requirement on new and/or remodeled developments.

Water system extensions for development of property shall be designed to provide adequate capacity, redundancy, and reliability of the distribution system, and may require on-site looping of water systems, connection to all existing mains adjacent to the property, and/or installing water main stubs to the limits of the property to allow for future water system connections. Where a development borders or spans different pressure zones, the installation of main line pressure reducing valve (PRV) stations will be required. The length of dead-end mains for new development will be limited to a maximum of 300 feet. Off-site water system improvements may be required where deemed necessary by the District for flow capacity or system reliability.

2. DUCTILE IRON PIPE.

Ductile iron pipe shall be new, kept clean, delivered plugged and kept plugged prior to installation of, Class 52, cement-lined, conforming to ANSI Standard A21.51 (AWWA C-151) or whatever size and class of pipe is determined on the plans.

Ductile iron pipe shall be push-on joint or mechanical joint. Pipe with push-on joints shall be furnished with a single rubber ring gasket. All gaskets, including MJ, shall be lubricated to affect the seal. Pipe with mechanical joints shall be furnished with a mechanical joint of the stuffing box type, including rubber gasket, cast-iron gland, and tee-head bolts and nuts to affect the seal. All joints shall conform to ANSI Standard A21.11 (AWWAC-111).

Flanged joints shall conform to ANSI Standard 816.1.

Where restrained joints are required, fittings may be manufactured with U.S. Pipe TR Flex, Griffin "Snap Lok" or Pacific States Restrained Joint. In addition, Mega-Lugs may be used.

Bell and socket joints shall be in accordance with ANSI A21.10 and equal to U.S. Pipe "Usiflex".

Standard thickness cement mortar lining shall be in accordance with ANSI Standard A21.4 (AWWA C-104).

The Contractor shall furnish certification from the manufacturer of the pipe and gasket being supplied that the inspection and all of the specified tests have been made and the results thereof comply with the requirements of this standard.

3. GALVANIZED IRON PIPE AND FITTINGS.

Where galvanized iron pipe is specified, the pipe shall be standard weight, Schedule 40, steel pipe per Standard Specifications for black and hot dipped, zinc-coated (galvanized) welded and seamless steel pipe for ordinary uses (ASTM A- 120). Fittings shall be screwed malleable iron galvanized per USA Standard B16.3.

4. POLYETHYLENE PLASTIC SERVICE PIPE.

All material shall be as specified on the Standard Detail.

5. POLYETHYLENE PIPE ENCASEMENT.

Ductile iron pipe shall be encased with polyethylene encasement. Material and installation shall be in accordance with AWWA C105. Installation shall be in accordance with Method A or Method C.

6. DUCTILE IRON FITTINGS.

Ductile iron fittings shall be short body for pressure rating of 350 psi, unless otherwise noted. Metal thickness and manufacturing process shall conform to applicable portions of ANSI Standard A21.10, A21.11, A21.53, B16.2 and B16.4.

Standard cement mortar lining in accordance with ANSI Standard A21.4 (AWWA C-104).

Rubber gaskets for push-on-joint (Tyton) or mechanical joint (M.J.) in accordance with USA Standard A.21.11 (AWWA C-111).

Where restrained joints are required, fittings may be manufactured with U. S. Pipe TR Flex, Griffin "Snap Lok" or Pacific States Restrained Joint. In addition, Mega-Lugs may be used.

Approved Couplers per standard detail shall be used when connection to asbestos cement pipe is required.

7. FIRE HYDRANTS.

Fire hydrants shall conform to AWWA Standard Specification C502.73 and be one of three types: Mueller Super Centurion 250, American B-62-B High Pressure or East Jordan Watermaster 5CD250 WITH 4" STORZ INTERGRATED. They shall be a rising stem compression-type which opens counterclockwise and closes with the pressure. All fire hydrants shall be new and manufactured within one year of installation.

The minimum main valve opening diameter shall be 5-1/4" unless otherwise specified. The hydrant seat and hydrant seat retaining ring shall be bronze. All external bolts, nuts and studs shall be cadmium plated in accordance with ASTM A165 Type HS or rust proofed by some other process approved by the District. Gaskets shall be of rubber composition.

Fire hydrants shall be equipped with one 4-1/2" pumper connection (National Standard Thread) with 4" Stortz Adapter and two 2-1/2" NST hose ports. Pentagon nuts or caps and operating stem shall measure.

1-1/4" point to flat and shall open by turning to the left. Nozzle shall be fitted with renewable bronze nipples locked in place.

Fire hydrants shall be installed in accordance with the Standard Details included with these Engineering Specifications. Fire hydrant ports are to be oriented as directed by the Fire Protection District having jurisdiction over said area.

The hydrants shall be painted with TWO COATS of RUST-OLEUM HIGH PERFORMANCE PROTECTIVE ENAMEL 7543 SAFETY YELLOW The tops of hydrants shall be painted with two coats of RUST-OLEUM HIGH PERFORMANCE PROTECTIVE ENAMEL as directed by the District in accordance with the following Snohomish County Fire Code coloring table:

Color	Estimated Flow From Hydrant
Safety Blue	1,500 gpm or greater
Safety Green	1,000 to 1,499 gpm
Safety Orange	500 to 999 gpm
Safety Red	Less than 500 gpm
Black	For drafting use only (hard suction/steamer port)
White	Cross on top of hydrant - for filling tankers only

See Hydrant Standard Detail Drawing for additional Specifications.

8. GATE VALVES, RESILIENT SEAT.

Gate valves shall conform to the requirements of AWWA Standard Specifications for gate valves for ordinary water works service No. C-500 and C-509, except as superseded by the following: They shall be iron body with epoxy coating inside, resilient seat rubber vulcanized to gate, or S.S. seat ring attached to disc with S.S. screws. The valves shall be non-rising stem, open to the left, and shall be equipped with standard 2" square operating nuts. Valves shall be equipped with "O-ring" packing. Valves to be American-SO "CRS", Waterous Series 500, Mueller resilient wedge or American Flow Control Series 2500 resilient wedge.

Gate valves utilizing hub ends with ductile iron or asbestos-cement pipe shall be installed with rubber gaskets to match the pipe end. Where PVC pipe is used, valves shown on the plans with hub connections shall have hub connections designed specifically for use with PVC pipe or they shall have mechanical joints with adapting gaskets to accommodate PVC pipe.

All non-RSGV valves shall be ball valves approved by the District. Said valves shall be furnished with a slotted operator, and with an adapting 2" square operating nut (Ford Cat. QT-67) secured with a stainless-steel cotter pin.

9. BUTTERFLY VALVES.

Butterfly valves shall be Class 150 or 250, as required depending upon the local static and test pressure at the location the valves are to be installed. The valves shall be equal to Dresser "450" or Pratt "Groundhog" and shall meet or exceed all strength requirements of AWWA C-504-70, except that certain deviations in the construction details of the valve seats and shaft seals will be considered by the District. The valves shall withstand test pressures in the closed position at two times the local static pressure or 200 psi minimum, whichever is greater.

Valve shafts shall meet or exceed the strength requirements of AWWA C-504-70 and be one-piece. Packing shall be "O-ring" except the District will review other types of packing for possible approval.

Butterfly valves to be installed underground shall have sealed mechanical operators and 2" standard square operating nuts.

Complete manufacturer's Specifications for the valves proposed for use shall be submitted to the District for approval.

No valves shall be used which have not been approved by the District.

10. VALVE BOXES.

Valve boxes shall be cast iron with adjustable sections equal to DISTRICT LOGO LID EAST JORDAN MANUFACTURER FOR TOP AND BOTTOM SECTION AS IDENTIFIED IN THE STANDARD DETAIL, and regular 30" base section or base section as required. Set valve box top on 2" ETHAFOAM 220 Polyethylene Foam (Typical)

11. VALVE AND BLOW-OFF MARKERS.

Markers for valves and blow-offs shall be "Carsonite –CRM3 072" or approved equal. Markers shall be 3-3/4" total width with a minimum length of 66". Markers shall be BLUE-08 and shall include 3" x 3" hi-intensity white reflective sheeting, a "CWV-116 - caution water valve" decal and a prong at the base to prevent pull-out. Installed with CRM Post Driver.

Valve markers shall be stenciled with the letter "V" and lettering indicating valve size and distance in feet and inches to the valve on the face of the marker. Lettering shall be stenciled with approved permanent black marker, paint or industrial decals and shall be 2 inches high.

Blow-off assembly markers shall be stenciled with the letters "B.O." and lettering indicating distance in feet and inches to the blow-off on the face of the marker. Lettering shall be stenciled with approved permanent black marker, paint or industrial decals and shall be 2 inches high.

See the Standard Detail Drawings for additional Specifications.

12. FIRE HYDRANT GUARD POSTS.

Concrete fire hydrant guard posts shall be made of precast reinforced concrete, nine (9) inches in diameter, six (6) feet long (MIN), See District Standard Detail.

13. METER BOXES.

Services with 5/8" x 3/4" meter, 3/4" meter, 1" meter, 1-1/2" meter or 2" meter. See District Standard Detail for box type, lid type, service type and size. NOTE THAT ALL METER LIDS ARE TO HAVE CVWD LOGO.

14. SERVICE SADDLES.

a. Ductile Iron Pipe and Asbestos Cement (AC) Pipe.

For 1" standard service, saddle shall be single stainless-steel strap equal to Romac Industries, Inc., Style 101S.

b. PVC pipe.

For 1" standard service, saddle shall be single stainless-steel strap equal to Ford S 90. When the District has preapproved installation.

15. SERVICE MATERIALS.

All small size valves, pipe and fittings to be as specified on the Standard Details or its equal approved by the District.

16. RESIDENTIAL DOMESTIC AND FIRE SPRINKLER SERVICES.

Combination service for residential domestic and fire sprinkler systems shall be according to the Standard Detail.

17. BACKFLOW ASSEMBLIES.

All backflow assemblies required shall be in compliance with the District Cross Connection Control Policy and District Standards. Commercial, Industrial, school, or other building upgrades are required to install a Reduce Pressure Backflow Assembly per the District's Cross Connection Control Policy.

18. BLOW-OFFS.

2" Blow-offs shall be installed for 12" diameter pipe and smaller in accordance with the standard detail. Blow-offs for pipe larger than 12" in diameter shall be as directed by the District.

19. PRESSURE REDUCING VALVES.

The Developer shall install pressure reducing valves if necessary at their expense unless agreed otherwise prior to the District signing the Developer Extension Agreement. The PRV shall be located "downstream" of the meter. The Contractor shall be responsible for the proper installation and the property owner shall be responsible for the operation of the valve. All PRVs larger than 2" require District approval.

20. PRESSURE REDUCING VALVE STATIONS.

The District's standard detail for pressure reducing valve stations is with GC Systems. The Developer will be required to install this pressure reducing valve station at their expense unless agreed upon prior to the District signing the Developer Extension Agreement.

METHODS OF CONSTRUCTION

1. GENERAL.

A pre-construction conference will be held at the District office prior to the start of construction.

The Contractor shall notify the District and the District's Engineer at least 72 hours in advance of contemplated construction to allow for field staking the pipeline and checking of materials to be used on the job.

Except as otherwise noted herein, all work shall be accomplished with adopted standards of Cross Valley Water District and as recommended in applicable American Waterworks Association (AWWA) specifications and according to the recommendations of the manufacturer of the material or equipment used. Contractor performing actual construction shall have a copy of the specifications on the jobsite at all times.

2. ALIGNMENT.

Unless otherwise specified, the location of the water mains, valves, hydrants, and principal fittings will be staked out by the Engineer, upon 72-hour notice by the Contractor.

Prior to construction staking any water mains by the District Engineers, the Developer's Engineer or Surveyor shall have provided a minimum of three (3) horizontal control points and a minimum of three (3) vertical control points in the form of either road centerline stakes, property stakes, or easement centerline stakes, the necessary lot corners and easement centerline stakes and center of cul-de-sacs.

The Engineer may elect to stake the entire job; however, in no event will he stake less than the entire job or one full field crew day in advance of construction. Pipe shall be laid closely to specified alignment. The centerline of proposed water main location will be staked. Alignment deviation is not to exceed 0.5 feet. Replacement of stakes lost or destroyed shall be made at the Contractor's expense and in accordance with the Contract Plans. Contractor shall provide a limed line between stakes for trench centerline.

3. TRENCH EXCAVATION.

Clearing and grubbing where required shall be performed within the easement or public right-of-way as permitted by the property owner or governing agencies. Debris resulting from the clearing and grubbing shall be disposed of by the Contractor. The Contractor shall be responsible for locating all existing utilities well enough in advance of the excavation to prevent damage during construction. The Contractor shall be responsible for any damage whatsoever resulting from his operations on the project. Trenches shall be excavated to the line and depth so all the new pipelines constructed shall have not less than three (3) feet or in excess of five (5) feet of cover, measured from the top of the pipe to the approved finish grade. If a grade revision is made, the cover over the water main must remain within these limits; otherwise, the water main shall be reconstructed.

All added costs of inspecting such water main reconstruction shall be charged to the Contractor.

The excavation shall be made in a straight grade through localized breaks in grade. The excavation shall be deepened gradually at changes in the street grades so that there are no abrupt changes in pipeline grade.

Except for unusual circumstances where approved by the Engineer, the trench sides shall be excavated vertically and the trench width shall be excavated only to such widths as are necessary for adequate working space. The minimum trench width at the top of the pipe shall normally be the outside diameter of the pipe barrel plus 16 inches. The top width of the trench shall not exceed the outside diameter of the pipe plus 36 inches. The trench shall be kept free from water until jointing is complete. Surface water shall be diverted so as not to enter the trench. The Contractor shall maintain sufficient pumping equipment on the job to ensure that these provisions are carried out. Gravel required in

the bottom of the trench due to action of weather or workmen shall be furnished by the Contractor. The Contractor shall perform all excavation of every description and of whatever substance encountered and boulders, rocks, roots and other obstructions shall be entirely removed or cut out to the new width of the trench and to a depth 6 inches below water main grade. Where material is removed from below water main grade, the trench shall be backfilled to grade with material satisfactory to the Engineer and thoroughly compacted.

Trenching operations shall not proceed more than 500 feet in advance of pipe laying, except with written approval of the District.

When trenching operations cut through concrete pavement, the pavement shall be removed to a width of 18 inches greater than the top width of the trench. The concrete shall be cut on a straight line and shall be beveled so that the cut will be approximately 1 inch wider at the top than at the bottom. Asphalt paving shall be cut ahead of the trenching equipment to prevent excessive tearing up of the surfacing and to eliminate ragged edges.

All trenching operations shall be performed in strict compliance with applicable Federal, State, local and industry safety regulations and requirements.

4. TIMBERING AND SHEETING.

The Contractor shall provide and install hydraulic jacks, trench boxes, and timbering and sheeting as necessary to protect workmen, the work, and existing buildings, utilities and other properties. All timbering and sheeting above the pipe shall be removed prior to backfilling. All sheeting below the top of the pipe shall be cut off and left in place.

Removal of timbering shall be accomplished in such a manner that there will be no damage to the work or to other properties. All timbering and sheeting shall be to the Contractor's design and the cost of installing and removing timbering and sheeting shall be included in the bid price of trenching and backfilling.

5. TUNNELING.

Tunneling may be required by governmental agencies, utilities companies, or ordered by the Engineer under pavements or otherwise. Tunnels shall be not less than 4 feet high and 2 feet wide and not less than 1 foot wider than the outside diameter of the pipe. Tunnels shall be backfilled with materials acceptable to the Engineer and backfill shall be mechanically compacted. When tunneling is used under pavements, subsequent low-pressure grouting may be required.

6. HIGHWAY CROSSINGS.

The Contractor may use any method which provides satisfactory results and is acceptable to the Engineer and the governmental agency having control of the road, provided that the Contractor restores the roadway to its original condition. Normally, highway crossings require the placing of a steel pipe casing by jacking or tunneling and laying the water main within this casing. Ductile iron pipe shall be used inside the casing and low-pressure grout shall be installed to seal end of casing.

7. LAYING OF PIPE.

All pipe shall be installed in accordance with these specifications and the instructions of the manufacturer subject to the approval of the Engineer. All pipe ends shall be square with the longitudinal axis of the pipe and any damage to

the ends shall be cut off before installation, if approved by the Engineer. Where necessary to cut the pipe, the pipe shall be cut with approved cutting tools.

The pipe shall be laid in a straight grade through localized breaks in grade. The excavation shall be deepened gradually at changes in the street grades so that there are no abrupt changes in pipeline grade. To maintain the required alignment, use short lengths and deflect the joints or use necessary bends.

Each pipe section shall be carefully lowered into place in the ditch after inspecting it for defects and removing any gravel or dirt, etc., from the interior of the pipe.

When necessary, water mains to be constructed under other utilities shall meet the minimum cover requirements.

Where it is necessary to cross sanitary sewer or storm sewer trenches, all trench backfill shall be removed and replaced with mechanically compacted pit run material to provide a uniform support for the full length of the pipe.

Where it is necessary to cross an existing asbestos-cement water line, a minimum of 26 feet of the asbestos-cement pipe must be removed and replaced with ductile iron pipe or C-900 DR-18 of the same diameter. See detail SD-10

A 10-foot horizontal separation must be maintained between all sanitary sewer lines and water lines. A 6-foot minimum horizontal separation shall; be maintained between all water facilities and underground power and telephone facilities, unless otherwise approved.

All pipe shall be kept free of gravel, dirt and other contaminants. Temporary pipe plugs must be installed at all exposed pipe ends when the pipe is delivered, stored onsite, and at the end of each working day. The pipe plug must be a watertight, mechanical device, and shall be cleaned thoroughly prior to installation.

8. LAYING OF DUCTILE IRON PIPE.

Work shall be accomplished in accordance with AWWA Specifications and preceding Paragraph 7 Laying of Pipe.

9. LAYING OF GALVANIZED IRON PIPE.

The galvanized iron pipe and fittings shall be threaded. Joints shall be made up in accordance with good plumbing practice. All threads shall be coated with pipe thread sealer before connecting. All galvanized pipe shall require District approval prior to installation.

10. FOUNDATION, BEDDING AND BACKFILL GRAVEL.

Backfilling and surface restoration shall closely follow installation and testing of the pipe, so that no more than 500 feet of pipe is left exposed without express approval of the Engineer. Care shall be taken to ensure that the pipe and its protective coating are not damaged. No rocks or stones shall be permitted within 12" of the pipe. All foundation, bedding and backfill gravel shall be per the District standards Trench Backfill and Restoration or local agencies permitting requirements.

a. Foundation Gravel.

When required in areas of unsuitable trench bottom, foundation gravel shall consist of clean, granular material free from objectionable materials such as vegetable matter or other deleterious substances with at least 90 per cent coarse material ranging from 1" in diameter to 3" in diameter and 100 per cent 3" in diameter or less.

b. Bedding Gravel.

Rigid Pipe: Bedding material shall consist of 5/8" minus crushed rock or washed sand. The Contractor shall provide a sample of the proposed bedding material to the District for approval prior to construction.

Flexible Pipe: Bedding gravel shall be a clean sand/gravel mixture free from organic matter meeting the following gradation when tested in accordance with ASTM D422:

U.S. Standard Sieve Size	% Passing by Weight
3/4"	100
3/8"	70-100
No. 4	55-100
No. 10	35-95
No. 20	20-80
No. 40	10-55
No. 100	0-10
No. 200	0-3
Sand Equivalent	35 Minimum

The Contractor shall excavate for bedding material as described in Methods of Construction, Paragraph 3.

Bedding material shall be carefully placed and firmly compacted to provide a firm, uniform cradle for the pipe. The minimum thickness of the layer of bedding material required shall be 4 inches under the bell for all pipe sizes of 27 inches diameter and smaller, 6 inches for all pipe sizes 30 inches diameter and larger and 6 inches under the bell of the pipe for all diameter pipes where rock is excavated. To provide this firm, continuous support for the pipe, it is necessary to hand tap or "slice" bedding material solidly under the pipe.

After the pipe laying operation, additional bedding material shall be placed and compacted by hand tools for the full width of the trench to a height of 6" above the top of the water main.

c. Backfill Gravel.

Where excavated material is not approved for backfill, Gravel Base, Class B, conforming to the requirements of Section 9-03.10 of the State of Washington Standard Specifications for Road and Bridge Construction, or granular material commonly known as bank run gravel, shall be used as directed by the District and/or Engineer.

Bank run gravel shall be free from wood, roots, bark or other extraneous material. It shall have such characteristics of particle size and shape that it will compact readily to a firm, stable base.

The minimum size of stone shall not exceed that which will pass a 2-1/2 inch square sieve opening. Gradation shall be as follows: 25 per cent minimum passing 1/4 inch sieve; 10 per cent maximum passing U. S. No. 200 sieve; dust ratio 2/3 maximum; sand equivalent 30 minimum.

Prior approval for the use of a pit from which the Contractor and/or Developer desire to provide pit run material may be granted by the District and/or Engineer.

Where governmental agencies other than the owner have jurisdiction over roadways, the backfill and compaction shall be done to the satisfaction of the agency having the jurisdiction.

11. TRENCH BACKFILL.

It is assumed that existing excavated material will be suitable for trench backfill. If the excavated material is judged unsuitable by the District and/or permitting agencies, imported backfill gravel shall be furnished and placed.

In trench areas in the County, City or State right-of-way under the present traveled area of asphalt, at street crossing and under driveways serving residences or commercial establishments, 5/8" minus crushed rock or pit-run backfill gravel shall be furnished and placed as backfill as directed by the District.

All trench backfill shall be mechanically compacted to 95 percent standard density. No water jetting will be allowed.

Compaction testing may be required at the District's or Snohomish County's discretion. All trench backfill shall be per the District standards Trench Backfill and Restoration or local agencies permitting requirements.

12. CONCRETE BLOCKING.

Concrete blocking mix 1:2:4 shall be cast in place and have a minimum of 1/4 square foot bearing against the fitting and two square feet bearing area against undisturbed soil. Blocking shall bear against fittings only and shall be clear of joints so as to permit taking up or dismantling joint. All bends and tees shall be blocked in accordance with Standard Blocking Details. The Contractor shall install blocking which is adequate to withstand full test pressure as well as to continuously stand operating pressures under all conditions of service. For concrete blocking based on 250 psi test pressure with safe soil bearing load of 2,500 pounds per square foot, see Standard Detail.

13. FIRE HYDRANT INSTALLATION.

Fire hydrant shall be set as shown in the Standard Detail. Mega-lugs shall be used to restrain the ductile iron pipe between the hydrant foot and the 6" hydrant valve.

The location of the fire hydrant shall be shown on the plans to determine length of hydrant run required. The hydrant shall be set on a solid concrete block 4"x8"x16" and a minimum of 7 cubic feet of clean gravel shall be placed around the base of the hydrant for a drain pocket.

Fire hydrant ports are to be oriented as directed by the Fire Protection District having jurisdiction over said area.

In some instances, it may be necessary to make a cut or provide a fill to set a hydrant. Where this occurs, the area for at least a three (3) foot radius around the hydrant shall be graded and leveled, and the cut slopes or fill slopes shall be neatly graded by hand, unless otherwise approved by the District and the Fire Chief.

No tool other than an approved hydrant operating wrench shall be used when operating hydrants.

Fire hydrants shall be painted as defined in Section 7, Fire Hydrant materials and on the Districts standard.

Stencil on the face of the hydrant barrel with 2" black contrasting letters, the distance from hydrant to the gate valve in feet and inches.

14. GUARD POST INSTALLATION.

Fire hydrant guard post shall be installed as directed by the District. Guard Posts to be installed per the standard detail and painted two coats as defined in section 7 Fire Hydrant materials safety yellow.

Guard post for air and vacuum valve riser shall be set as directed with top level within top of return bend and shall be painted. Guard posts shall be prime coated with Steelcote SR-53, heavy duty, brush-type or approved equal. The two (2) finishing coats of yellow paint shall be as defined in Section 7, Fire Hydrant Materials of Construction.

15. VALVE AND BLOW-OFF MARKER INSTALLATION.

Markers for all valves and blow-offs shall be placed as directed, situated in a safe and reasonably conspicuous location, and set so as to leave 30" exposed above grade.

Markers shall be in accordance with the Standard Details and The Materials of Construction section of these specifications. Each valve shall have a marker.

16. GATE VALVE INSTALLATION.

Gate valves shall be set in the ground vertically and shall be opened and shut under pressure to check operation and, at the same time, show no leakage. Valves that are not flanged to other fittings shall be blocked in accordance with the Standard Blocking Details.

Gate valves utilizing hub ends with ductile iron pipe shall be installed with rubber gaskets to match the pipe end. Where PVC pipe is used, valves shown on the plans with hub connections shall have hub connections designed specifically for use with PVC pipe or they shall have mechanical joints with adapting gaskets to accommodate PVC pipe.

All non-RSGV valves shall be ball valves approved by the District.

17. BUTTERFLY VALVE INSTALLATION.

Butterfly valves shall be installed and tested in the same manner as gate valves.

18. VALVE BOX INSTALLATION.

Valve boxes shall be set flush in pavement and in gravel shoulder and, in unimproved roadway.

An asphalt or concrete pad for the valve box shall be constructed according to the Standard Detail. The asphalt or concrete pad shall be provided for all valves, unless otherwise directed.

19. AIR AND VACUUM RELEASE VALVE INSTALLATION.

Air and vacuum release valve assembly shall be installed as shown on the Standard Detail.

Location of the air release valves shall be at the high points of the line. Water line must be constructed so that the air release valve may be installed in a convenient location.

20. 2" BLOW-OFF INSTALLATION.

2" Blow-offs shall be installed for 12" diameter pipe and smaller in accordance with the Standard Detail. Blow-offs for pipe larger than 12" in diameter shall be as directed by the District.

21. LOCATING WIRE.

All water mains and side services installed shall have 14-gauge solid copper wire with neoprene coating placed in the trench over the water main and the ends brought up into the valve boxes. Said locating wire shall also be placed over the water service line and brought up into the meter box. All connections or splicing shall be made with Copper Split Bolt Wire Connectors, Catalog # S8* Range 16 str. – 8 str.

22. WATER SERVICE INSTALLATION.

All service installation shall be per Standard Detail.

23. CONNECTION TO EXISTING WATER MAIN.

The Contractor shall not operate any gate valves or make any connections to the existing water main without prior approval of the District.

The Contractor shall make the necessary arrangements with the District for the connection to the existing water main. The District may elect to furnish the materials, equipment, and labor necessary for making the connection and the Contractor shall pay the District all costs for the connection. In the event the District does not elect to make the connection, they may authorize the Contractor to furnish the District Approved materials, equipment and labor necessary for making the connection under the supervision of the District.

All material used for the connection shall be thoroughly sterilized by swabbing the interior with a chlorine solution of 50 ppm.

The District reserves the right to delay or reschedule the connection dependent upon on the weather and staff availability to previous scheduled work Example: larger mains cannot be taken out of service between June 1 and September 15, due to hot weather and demand on the water system.

24. HYDROSTATIC TESTS.

After backfilling the completed water main, including all services, setters, fire hydrants and any other connections to the main (unless instructed by the District) with sufficient dirt to prevent movement of the pipeline, allowing sufficient time for the concrete blocking to set, the water main shall be tested in convenient lengths as so ordered and when ordered by the District. In general, new mains shall be tested between valves and large sections of untested main will not be permitted to accumulate.

The pipeline shall be filled with water slowly and all air expelled from the pipeline prior to starting the test. All pipelines shall be tested at a hydrostatic pressure of 200 psi at high point or two times static pressure, whichever is greater. All necessary pump, valves, meter gauges, piping, hose and labor required shall be furnished by the Contractor.

The pressure tests shall be performed in the following manner:

Water shall be pumped into the main, bringing the pressure in the main up to the required test pressure. After a period of one hour, water shall again be pumped into the main to bring the pressure up to the required test pressure and the quantity of water used during the test shall be accurately measured through a standard water service meter with a sweep unit hand that registers one gallon per revolution. The meter shall be approved by the Engineer prior to any testing. The allowable water consumption shall not exceed the quantities as shown in the following table.

All visible leakage shall be corrected and all new valves installed under these specifications shall be tight.

Any pressure drop during the test period shall not be abrupt under any circumstances and the Engineers shall be the sole judge as to whether the pressure drop is acceptable for the conditions existing in the pipeline being tested.

Whenever repairs or corrections are necessary, the pressure test shall be repeated to provide acceptability.

Pipe Size	<u>Allowable Water Leakage – Gallons per hour/1,000 feet of pipe</u>
2"	0.21
4"	0.42
6"	0.63
8"	0.84
12"	1.26
16"	1.68
18"	1.89
Larger Sizes	As determined by Engineer

25. HAZARD OF ASBESTOS CEMENT PIPE REMOVAL.

To remove existing asbestos cement pipe from the trench, a fee and permit is required from the Puget Sound Air Pollution Control Agency. In addition, Washington State Department of Labor and Industries requires the operators removing asbestos be certified.

26. STERILIZATION AND FLUSHING OF WATER MAIN.

Before being placed in service, all new water mains and repaired portions of, or extensions to, existing mains shall be chlorinated, and a satisfactory bacteriological report obtained. The District will pass on the results of the bacteriological test.

Sections of pipe to be disinfected shall first be flushed to remove any solids or contaminated material that may have become lodged in the pipe. If no hydrant is installed at the end of the main, then a tap shall be provided large enough to develop a velocity of at least 2.5 fps in the main.

Water supply for filling, testing and flushing of the new mains will be available from the existing distribution system. The Contractor shall make arrangements with the District for the necessary flushing of the pipeline. Opening of valves and use of water from the District's system will be done by the District.

Taps required by the Contractor for temporary or permanent release of air, chlorination or flushing purposes shall be provided by the Contractor as a part of the construction of water mains.

Where dry calcium hypochlorite is used for disinfection of the pipe, flushing shall be done after disinfection.

a. Dechlorination and Disposal of Treated Water.

The Contractor shall be responsible for disposal of treated water flushed from mains and shall neutralize the wastewater for protection of aquatic life in the receiving water before disposal into any natural drainage channel. The Contractor shall be responsible for disposing of disinfecting solution to the satisfaction of State and local authorities.

b. Requirement of Chlorine.

Before being placed into service, all new mains and repaired portions of, or extensions to, existing mains shall be chlorinated so that a chlorine residual of not less than 10 ppm remains in the water after standing 24 hours in the pipe.

The initial chlorine content of the water shall be not less than 50 parts per million.

c. Form of Applied Chlorine.

Chlorine shall be applied by one of the methods which follow, to give a dosage of not less than 50 ppm of available chlorine.

d. Dry Calcium Hypochlorite.

As each length of pipe is laid, sufficient high test calcium hypochlorite (65-70% chlorine) shall be placed in the pipe to yield a dosage of not less than 50 ppm available chlorine, calculated on the volume of the water which the pipe and appurtenances will contain.

The number of ounces of 65% test calcium hypochlorite required for a 20-foot length of pipe equals $0.008431D^2$, in which "D" is the diameter in inches.

e. Liquid Chlorine.

A chlorine gas-water mixture shall be applied by means of a solution-feed chlorinating device, or the dry gas may be fed directly through proper devices for regulating the rate of flow and providing effective diffusion of the gas into the water within the pipe being treated. Chlorinating devices for feeding solution of the chlorine gas, or the gas itself, must provide means for preventing the backflow of water into the chlorine.

f. Chlorine-Bearing Compounds in Water.

A mixture of water and high-test calcium hypochlorite (65-70% Cl) may be substituted for the chlorine gas-water mixture. The dry powder shall first be mixed as a paste and then thinned to a 1 per cent chlorine solution by adding water to give a total quantity of 7.5 gallons of water per pound of dry powder.

This solution shall be injected in one end of the section of main to be disinfected while filling the main with water.

g. Sodium Hypochlorite.

Sodium hypochlorite, commercial grade (15% Cl) or in the form of liquid household bleach (5% Cl) may be substituted for the chlorine gas-water mixture.

This liquid chlorine compound may be used full strength or diluted with water and injected into the main in correct proportion to the fill water so that dosage applied to the water will be at least 50 ppm.

h. Point of Application.

The preferred point of application of the chlorinating agent is at the beginning of the pipeline extension or any valved section of it and through a corporate stop inserted in the horizontal axis of the pipe. The water injector for delivering the chlorine-bearing water into the pipe should be supplied from a tap on the pressure side of the gate valve controlling the flow into the pipeline extension. Alternate points of application may be used when approved or directed by the Engineer.

i. Rate of Application.

Water from the existing distribution system, or other source of supply, shall be controlled to flow very slowly into the newly laid pipeline during application of the chlorine. The rate of chlorine gas-water mixture or dry gas feed shall be in such proportion to the rate of water entering the newly laid pipe that the dosage applied to the water will be at least 50 parts per million.

j. Preventing Reverse Flow.

No connection shall be made between the exiting distribution system and pipelines not disinfected constructed under this contract without a State Department of Social and Health Services' approved backflow preventer installed in the connecting line.

k. Retention Period.

Treated water shall be retained in the pipe for a minimum of 24 hours and a maximum of 48 hours. After this period, the chlorine residual at pipe extremities and at other representative points shall be at least 10 parts per million.

l. Chlorinating Valves and Hydrants.

In the process of chlorinating newly laid pipe, all valves or other appurtenances shall be operated while the pipeline is filled with the chlorinating agent and under normal operating pressure.

m. Chlorinating Connections to Existing Water Mains and Water Service Connections.

The chlorinating procedure to be followed shall be as specified in Section 11 of the AWWA C602. All closure fittings shall be swabbed with a very strong chlorine solution.

n. Final Flushing and Testing.

Following chlorination, all treated water shall be flushed from the newly laid pipe until the replacement water throughout its length shows, upon test, the absence of chlorine. In the event chlorine is normally used in the source of supply, then these tests shall show a residual not in excess of that carried in the system.

Before placing the lines into service, a satisfactory report shall be received from the local or State Health Department on samples collected from representative points in the new system. If a chlorine residual is present, the samples must be collected in specially treated bottles. Sample bottles and/or instructions shall be obtained by the Contractor from the laboratory where the samples will be tested. The Contractor shall collect all samples of the bacteriological tests under direct supervision of the Engineer.

o. Repetition of Flushing and Testing.

Should the initial treatment result in an unsatisfactory bacteriological test, the original chlorination procedure shall be repeated by the Contractor until satisfactory results are obtained. Failure to get a satisfactory test shall be considered as failure of the Contractor to keep the pipe clean during construction, or to properly chlorinate the main.

27. REPLACING ROAD SURFACING.

The Contractor shall restore all roadway and driveway surfaces excavated or disturbed to a condition acceptable to the District and the governmental agency having control of the road.

All work in County right-of-way shall be subject to the approval of the Snohomish County Engineer.

All work in the City Street right-of-way shall be subject to approval of the City Engineer.

Paving restoration consists of two steps. The first step is installation of a temporary cold mix patch to be maintained until all work and other restoration is complete. The second step is installation and sealing of the permanent pavement trench patch.

This work shall consist of the preparation, placing and compaction of subgrade and the patching of various types of pavement cuts to the complete resurfacing of roadways, the performance of which shall be in accordance with the requirements outlined herein.

Roadway surface restoration and patching shall be in accordance with the Standard Specifications of the State of Washington, Department of Highways, unless specifically directed otherwise by the District and/or the Engineer.

Before patching material is placed, all pavement cuts shall be trued so that marginal lines of the patch will form a rectangle with straight edges and vertical faces a minimum of one (1) foot back from the maximum trench width.

Proper signs, barricades, lights and other warning devices shall be maintained 24 hours of the day until the patch is completed and ready for traffic.

a. Crushed Surfacing.

Crushed surfacing material shall be 1-1/4" and 5/8" minus crushed gravel and shall be manufactured from ledge rock, talus or gravel in accordance with the provisions of Section 9-03.9(3) of the WSDOT Standard Specifications.

All crushed surfacing top course shall be placed in accordance with the requirements of Sections 4-04.1 through 4-04.4 of the WSDOT Standard Specifications.

b. Gravel Base.

All gravel base shall conform to the requirements of Section 9-03.10 of the WSDOT Standard Specifications. Gravel base shall be spread as directed by the Engineer during construction and compacted in accordance with the requirements of the Department of Highways Specifications before material for succeeding course is spread. Gravel base shall be used for a base material and for the select backfill of trenches in the event that the excavated material is unsuitable for backfill.

Gravel base shall be used as shown on the plans and as directed by the District and/or the Engineer.

c. Asphalt Concrete Surfacing.

Asphalt concrete surfacing or repair shall be asphalt concrete pavement, Class "B", and shall conform to Section 5-04.1 through 5-04.4, of the WSDOT Standard Specifications, and the Standard Specification Drawing for Permanent Asphalt Concrete Patch. All edges and joints of asphalt concrete pavement repair shall be sealed with asphalt cement. After pavement is in place, all joints shall be sealed with SS-1, or equal.

d. Cement Concrete Pavement.

Concrete shall conform with and shall be placed in accordance with Section 5-05.1 through 5-05.4, and Section 5-05.5(1) of the WSDOT Standard Specifications and shall be Class "B" and shall be furnished only by manufacturers who are members of the Portland Cement Association. Concrete cylinder samples will be taken by the Engineer for the purpose of testing the compressive strength of the concrete. The concrete shall be five (5) sack "High Early" cement mix. Subgrades shall be prepared as shown on the plans and in compliance with the WSDOT Standard Specifications.

All reinforcing steel shall conform with and be placed in accordance with Section 5-05 of the WSDOT Standard Specifications and shall conform to the requirements of ASTM Designation A-615 and A-616 and A-617, latest revisions.

e. Rigid-Type Pavements Resurfaced with Asphalt Concrete.

Those areas that now have a Portland cement concrete base and are surfaced with the asphalt concrete mat shall be replaced in kind. The base shall be five (5) sack mix using "High Early" cement. The surface of the cement concrete portion of the patch shall be left low enough to accommodate the asphalt portion of the patch. Brush finishing will not be required. Joints shall be placed if directed by the District and/or Engineer. The asphalt concrete surface mat to be placed over the Portland cement concrete base shall be Class "B" as designated by the WSDOT Standard Specifications. Both the base and the surface mat shall be carefully prepared, placed and cured in full compliance with Section 5-04.3 of the WSDOT Standard Specifications.

Asphalt concrete or bituminous plant mix shall not be placed until the day after the cement concrete has been placed unless otherwise permitted by the District and/or the Engineer. The edges of the existing asphalt pavements and castings shall be painted with hot asphalt cement or asphalt emulsion immediately before placing the asphalt patching material. The asphalt concrete pavement shall then be placed, leveled and compacted to conform to the adjacent

paved surface. Immediately thereafter, all joints between the new and original asphalt pavement shall be painted with hot asphalt or asphalt emulsion and be covered with dry paving sand before the asphalt solidifies.

f. Shoulder, Gravel Surfaces.

Shoulders, gravel driveways, and all other gravel surfaced areas shall be repaired as detailed on the plans, with a 2-inch lift of 5/8 inch minus crushed rock. Immediately prior to placement of the gravel, the drainage ditch, shoulders and/or driveways shall be graded to the original smooth contours existing prior to the construction of water lines in the area. The gravel shall then be placed and compacted in accordance with the applicable WSDOT Standard Specifications.

28. LANDSCAPING, LAWN REMOVAL AND REPLACEMENT OR RESEEDING.

In the event construction is to be carried out in area which are landscaped, appropriate measures shall be taken to restore such areas to conditions existing prior to construction. Such measures shall include, but not be limited to, sod removal and replacement or reseeding and replanting, subject to the approval of the property owner and/or the District.

a. Lawn Removal and Replacement.

The area of sod to be removed shall be laid out in squares or strips of such size as to provide easy handling and matching. The sod shall then be carefully cut along these lines to a depth of four (4) inches taking care to keep all cuts straight and cut all strips to the same width. After the sod has been cut vertically, it shall be removed to a uniform depth of approximately three (3) inches with an approved type of sod cutter. This operation shall be performed in such a manner as to insure uniform thickness of sod throughout the operation.

As the sod stripping proceeds, the sod strips shall be placed in neat piles at convenient locations and, from then on, they shall be maintained in a damp condition continuously until the sod strips are replaced on the lawn. In no case shall the sod remain in piles longer than ten (10) days before replacement on the lawn.

Prior to replacing the strips of sod, the stripped area shall be carefully shaped to proper grade and be thoroughly compacted. Wherever the construction operations have resulted in the placement of unsuitable or poorer soils in the area to be resodded, the surface shall be left low and covered with a minimum of four (4) inches of topsoil.

All tools used shall be of the type specially designed for the work and be satisfactory to the District and/or the Engineer.

b. Grass Reseeding.

When the grass is required to be reseeded, it shall be performed in the following manner: After the pipeline has been backfilled and compacted, tested and approved, the Contractor shall excavate and place a minimum of four (4) inches of an approved topsoil for the full width of the area being repaired.

The soil shall be fertilized prior to seeding using a commercial grade 6-10-4 consisting of 6# nitrogen, 10# phosphate and 4# potash per 100# of fertilizer. It shall be dry, free-flowing and applied at the rate of 20.0# per 1,000 square feet with a lawn type spreader. This fertilizer shall then be raked into the top two (2) inches of compacted topsoil.

Seed shall be applied after the fertilizer and shall be raked into the top one (1) inch of the fertilized topsoil. The seed shall be applied with a lawn type spreader at the rate of 5.0# per 1,000 square feet. The seed mix shall consist of the following proportions:

Kentucky Bluegrass (24# Bushel).....50% by Weight
Creeping Red Fescue, Certified.....40% by Weight
White Clover (99% Purity, 90% Germination)....10% by Weight

Immediately following the raking of the seed into the soil, the total area shall be covered with horticultural grade sun-dried peat moss, "HI-PRESS", or approved equal, applied with a lawn type spreader at the rate of 70# per 800 square feet. This material shall not be raked into the topsoil but shall be rolled with a water- filled roller. The seeded and prepared area shall then be kept continuously moist until the grass is two (2) inches high. Water shall be furnished by the Contractor. The Contractor shall be responsible for providing a finished grass area which meets the approval of the District and/or permitting agency until such time that the grass is two (2) inches high and all work shall be performed by an experienced landscape gardener.

29. EROSION AND SEDIMENT CONTROL.

The Contractor shall install and maintain erosion and sediment control measures in conformance with Snohomish County requirements, industry standard Best Management Practices and the requirements included in the project grading, storm drainage and T.E.S.C Plans and specifications.

Erosion and sediment control measures shall be in place prior to beginning water main construction and shall be maintained until removal is allowed by Snohomish County and the District.

STANDARD DETAILS

WATER STANDARD DETAILS

TRENCH BACKFLOW & RESTORATION DETAILS

Cross Valley



WATER DISTRICT

FILE NAME: \\K-FS1\LIBRARY\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\CWMD - INDEX.DWG

SEWER DETAILS

SHEET #	SHEET TITLE
SD-1	STANDARD PRECAST MANHOLE
SD-2	SHALLOW MANHOLE
SD-3	DROP MANHOLE CONNECTION
SD-4	WATERTIGHT LOCKING FRAME AND COVER
SD-4A	WATERTIGHT HEAVY DUTY LOCKING FRAME AND COVER
SD-5	LAMPHOLE (CLEANOUT)
SD-6	LOCKING C.O. FRAME & COVER
SD-7	CASTING ADJUSTMENTS
SD-8	SEWER LATERAL NEW CONSTRUCTION
SD-8A	SEWER LATERAL EXISTING MAINS
SD-8B	SEWER LATERAL PLAN VIEW
SD-9	POLYETHYLENE PIPE - MANHOLE CONNECTION AND ANCHORAGE DETAIL
SD-10	CROSSING AC PIPE
SD-11	PIPE ANCHOR
SD-12	DEEP SEWER MANHOLE
SD-12A	DEEP SEWER MANHOLE

TRENCH BACKFILL & RESTORATION DETAILS

SHEET #	SHEET TITLE
TBR-1	TRENCH SECTION - PIPE BEDDING AND TRENCH BACKFILL
TBR-2	TRENCH SURFACE RESTORATION
TBR-3	UNSUITABLE FOUNDATION EXCAVATION
TBR-4	TRENCH DAMS
TBR-5	TIMBER BACKFILL SUPPORTS
TBR-6	EROSION CONTROL BLANKET
TBR-7	ZONE OF INFLUENCE
TBR-8	GALVANIC ANODE INSTALLATION

SIDE SEWER DETAILS

SHEET #	SHEET TITLE
SS-1	STANDARD SIDE SEWER
SS-2	PRIVATE SIDE SEWER INSTALLATION
SS-3	ALTERNATE SIDE SEWER INSTALLATION
SS-4	GREASE INTERCEPTOR
SS-5	OIL WATER SEPARATOR
SS-5A	OIL WATER SEAPARATOR COVER OPTION DETAILS
SS-6	SINGLE RESIDENTIAL CONNECTION GRINDER PUMP
SS-7	PRIVATE BACKWATER VALVE INSTALLATION TO SANITARY SEWER
SS-7A	PRIVATE BACKWATER VALVE ASSEMBLY OUTSIDE INSTALLATION
SS-8	PRIVATE COMMERCIAL DUPLEX GRINDER PUMP STATION
SS-8A	PRIVATE COMMERCIAL DUPLEX GRINDER PUMP STATION
SS-9	PRIVATE PRESSURE LINE CONNECTION TO GRAVITY SEWER

WATER DETAILS

SHEET #	SHEET TITLE
WD-1	TYPICAL 1-INCH WATER SERVICE
WD-2	2-INCH WATER SERVICE
WD-3	3 INCH AND 4 INCH WATER SERVICE
WD-3A	3 INCH SERVICE MATERIALS LIST
WD-4	6 INCH WATER SERVICE
WD-5	METER BOXES AND LIDS
WD-5A	BLOCK OUT FOR METER BOXES IN CONCRETE DRIVEWAYS
WD-6	RESIDENTIAL DOMESTIC AND FIRE SPRINKLER SYSTEMS
WD-7	FIRE HYDRANT ASSEMBLY
WD-7A	FIRE HYDRANT GUARD POSTS
WD-7B	FIRE HYDRANT USE REQUIREMENTS
WD-8	THRUST BLOCKING
WD-8A	CONCRETE BLOCKING FOR VERTICAL BENDS
WD-9	MINIMUM STANDARD DEPTH REQUIREMENTS
WD-9A	MINIMUM SEPARATION STANDARDS
WD-9B	WATER AND SEPTIC LINE CROSSING DETAIL
WD-9C	WATER OR SEWER MAIN CASING DETAIL
WD-10	TAPPING TEE AND VALVE
WD-11	CAST IRON VALVE AND BOX
WD-11A	VALVE BOX COVER
WD-11B	VALVE BOX ADJUSTMENT
WD-11C	BYPASS VALVE
WD-11D	VALVE BOX PROTECTIVE PAD
WD-11E	VALVE STEM EXTENSION
WD-12	2 INCH BLOWOFFASSEMBLY
WD-13	1 INCH AIR AND VACUUM RELEASE VALVE ASSEMBLY
WD-14	2 INCH AIR AND VACUUM RELEASE VALVE ASSEMBLY
WD-15	3 INCH - 8 INCH DOUBLE CHECK DETECTOR ASSEMBLY
WD-15A	3 INCH - 8 INCH DOUBLE CHECK DETECTOR ASSEMBLY
WD-16	DOUBLE CHECK VALVE ASSEMBLY
WD-17	REDUCED PRESSURE BACKFLOW ASSEMBLY
WD-18	REDUCED PRESSURE BACKFLOW ASSEMBLY
WD-19	PRESSURE REDUCING VALVE
WD-20	WATER SERVICE DISCONNECT

CROSS VALLEY WATER DISTRICT
STANDARD DETAILS

SHEET INDEX

NOT TO SCALE

JULY 2024

- ## MATERIALS
- (EXTEND TO DWELLING PER UPC)
- A. ROMAC 101S SADDLE FOR DUCTILE IRON PIPE
FORD S90 SADDLE FOR PVC PIPE. REPAIR POLYWRAP AFTER INSTALLATION
 - B. FORD FB1100-4-Q-NL CORPORATION STOP (1")
IRON PIPE THREAD INLET X QUICK JOINT OUTLET
 - C. 1" POLYETHYLENE TUBING, SDR-9, 200 PSI PRESSURE CLASS
DRISCO PIPE WITH 14 GAUGE LOCATING WIRE OR
COPPER TUBING TYPE K. COPPER TUBING TO BE INSTALLED
IN POLYETHYLENE WRAP FOR A MINIMUM OF 3 FEET FROM WATER MAIN.
SERVICES WITHIN WSDOT ROW TO BE ENCASED IN 2" POLY, SDR-11.
 - D. 1" COPPER METER SETTER - FORD VBH94-15W-MM-44ZA-NL.
 - E. WATER METER TO BE PROVIDED BY DISTRICT. METERS SMALLER
THAN 1" SHALL BE INSTALLED WITH REDUCING BUSHINGS. (FORD
A-24, PROVIDED BY THE DEVELOPER).
 - F. CARSON HW 1527-18 BCF HDPE, 18" DEPTH. NON-TRAFFIC AREAS:
COMPOSITE COVER WITH CAST IRON READER LID AND 2" TRANSMITTER HOLE,
OLDCASTLE PART # FL1527 GP. TRAFFIC AREA: CAST IRON COVER WITH
READER LID AND 2" TRANSMITTER HOLE, OLDCASTLE PART # 15274009.
 - G. 2"x 4"x 6' LONG MARKER POST. BURY 3'. PAINT WHITE WITH
"WATER" STENCILED IN BLUE PAINT.
 - H. PVC CAP ON TAILPIECE. WHEN SIDEWALK IS INSTALLED BEHIND
METER BOX, A COPPER TAILPIECE OF LIKE LENGTH SHALL BE
EXTENDED TO THE PROPERTY SIDE OF WALKWAY.

NOTE: PRESSURE REDUCING VALVE INSTALLED BY PROPERTY OWNER.

PROVIDE BLOCK OUT FOR
METER BOXES IN
DRIVEWAYS PREAPPROVAL
REQUIRED
SEE DETAIL WD-5A

SEE NOTE B

PUBLIC

PRIVATE

RESPONSIBILITY

RESPONSIBILITY

THRUST BLOCK
SIZED FOR 4"
TEE SEE WD-8

LOCATE WIRE

ETHAFOAM PAD,
2" THICK (TYP.)

36"
MIN. COVER

30"
MIN. COVER
UNDER DITCH

LOCATE WIRE

7

3

18"

INSTALL BURIED METALLIC MARKER TAPE. TAPE SHOULD READ
"CAUTION BURIED WATER BELOW". CARLTON INDUSTRIES INC.,
BLACKBURN MFG. CO. OR EQUAL.

6

9

10"-12"

5

12

13

10

11

30"

MIN. COVER

1"-14G
TRACER
WIRE

14

4

NO.	ITEM
1	DISTRICT-APPROVED TEE X 4" (FL)
2	4" R/W GATE VALVE (FL X FL) 4" X 2" COMPANION FLANGE (FIPT)
3	2" FORD GRIP JOINT
4	2" PLASTIC CAP (SCHEDULE 40)
5	2" BADGER RECORDALL METER SUPPLIED BY DISTRICT AFTER PURCHASE
6	REFER TO DETAIL WD-5 FOR METER BOX TYPE
7	2" TYPE K COPPER PIPE (SOFT) 2" SERVICE PIPE (MAIN TO METER): SDR-7, DRISCO PIPE, IPS, WITH 14-GAUGE LOCATING WIRE (SOLID, NO STRANDS), OR COPPER TUBING, TYPE K, INSTALLED IN POLYETHYLENE WRAP FOR A MINIMUM OF 3' FROM WATER MAIN
8	CAST-IRON VALVE BOX WD-11, 18" TOP, 30" BOTTOM
9	2" BRASS METER SETTER WITH HIGH BYPASS AND LOCKING BALL VALVE FORD VBH77-12HB-11-77-NL WITH VERTICAL IN AND OUT CONNECTION
10	2" BRASS NIPPLE 6" LONG MIN. (MIPT)
11	2" BRASS 90° ELBOW (FIPT)
12	2" NIPPLE 3" LONG MIN.
13	2" BRASS UNION (FIPT)
14	2" BRASS NIPPLE 2' MIN. (EXTEND TO BACK OF SIDEWALK IF NECESSARY)

NOTES:

- NO SPLICES ALLOWED UNLESS APPROVED BY DISTRICT. USE FORD QUICK JOINT.
- OWNERS ARE RESPONSIBLE FOR INSTALLING PRESSURE REDUCER ON THEIR SYSTEM TO PROTECT THEIR FACILITIES FROM HIGH PRESSURE, UNLESS OTHERWISE SHOWN ON DRAWING.
- SURFACE RESTORATION IN ACCORDANCE WITH JURISDICTIONAL AUTHORITY.
- 4" SAND BEDDING REQUIRED ON ALL COPPER.
- ALL FITTINGS SHALL BE "LEAD FREE".

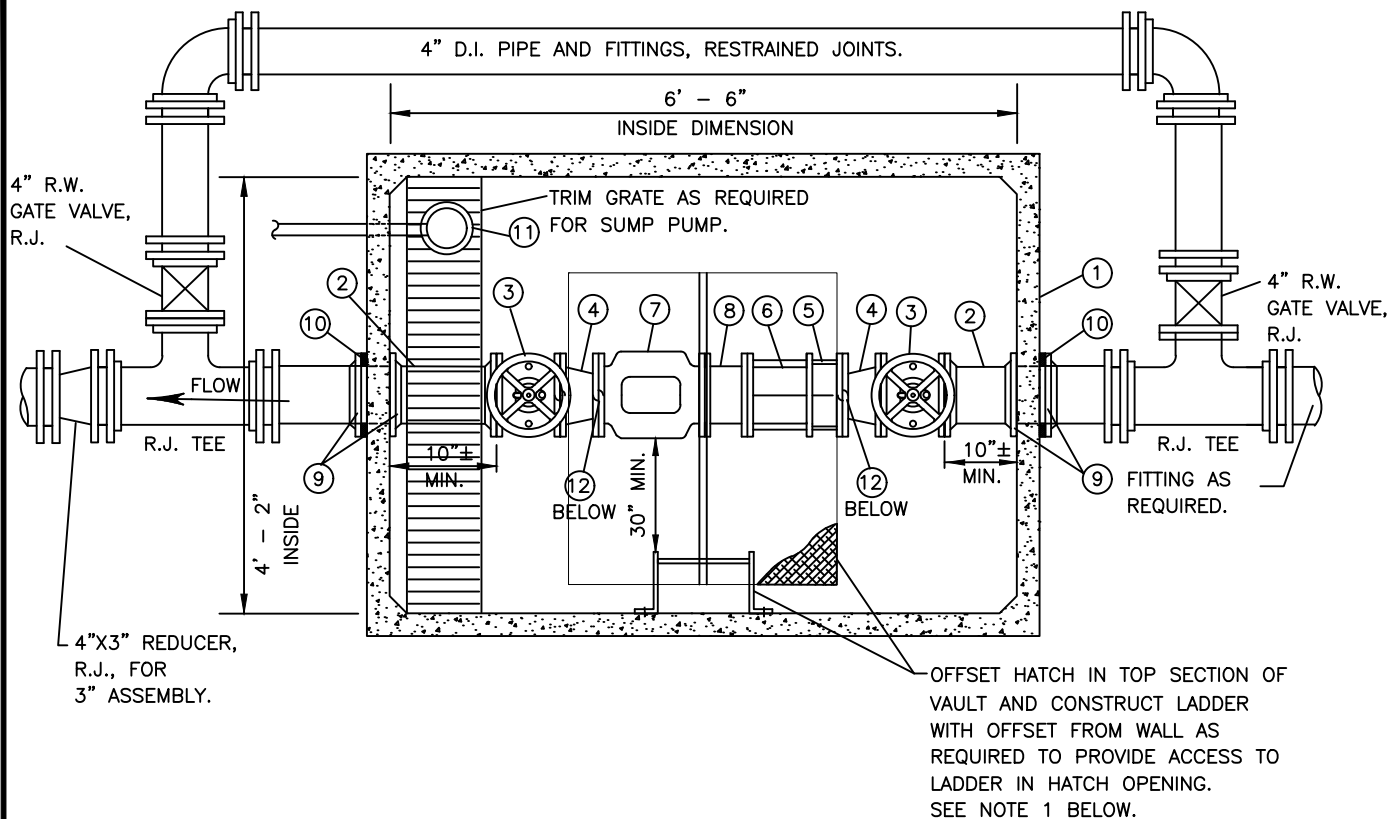
**CROSS VALLEY WATER DISTRICT
STANDARD WATER DETAILS**

**2" WATER SERVICE
INSTALLATION**

WD-2

NOT TO SCALE

SEPT 2024



NOTES

1. PROVIDE SHOP DRAWINGS AND SUBMITTALS FOR ALL MATERIALS AND EQUIPMENT TO THE DISTRICT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR ELECTRICAL PERMITS AND APPROVALS FOR SUMP PUMP INSTALLATIONS.

SEE SHEET WD-3A FOR MATERIALS LIST

CROSS VALLEY WATER DISTRICT
STANDARD WATER DETAILS

3" AND 4" WATER SERVICE

WD-3

NOT TO SCALE

FEB 2022

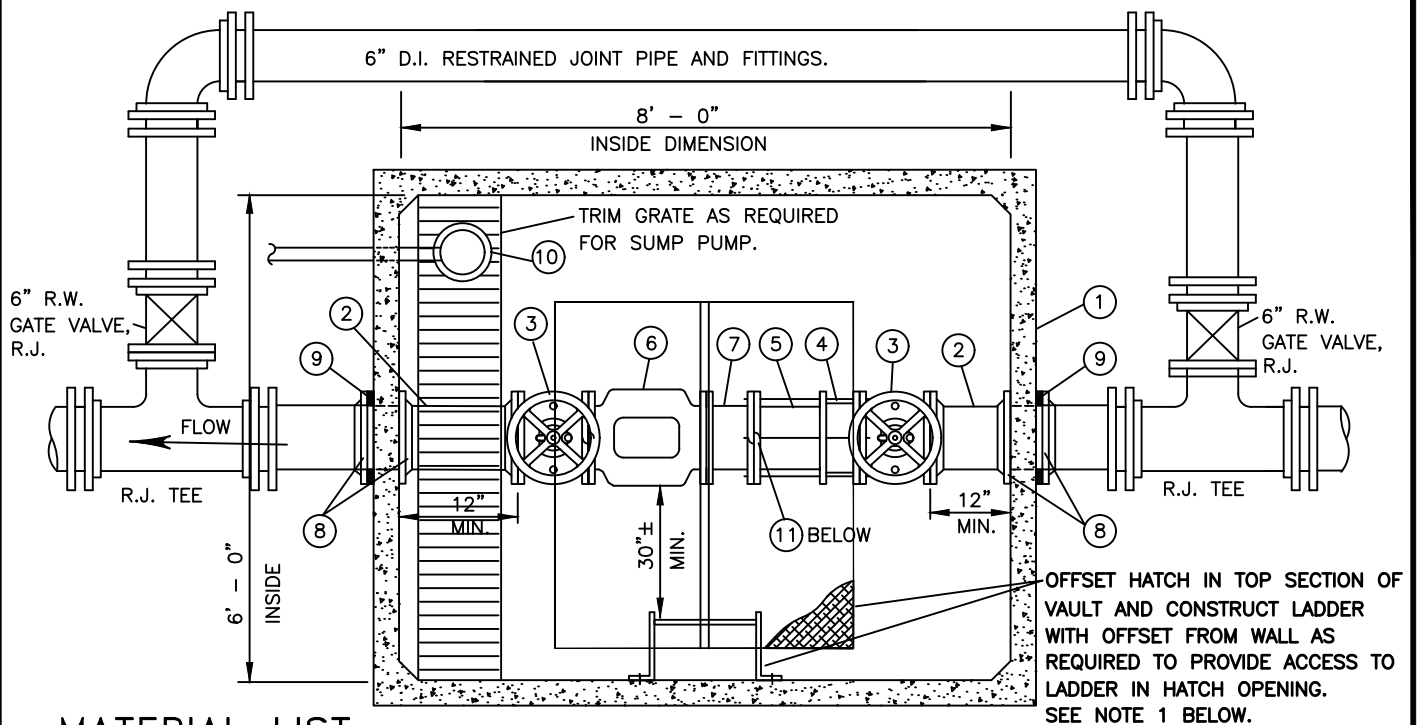
MATERIAL LIST

1. PRECAST CONCRETE UNDERGROUND VAULT – "UTILITY VAULT COMPANY": 577-LA BASE SECTION: 577 WITH SUMP AND GRATE MIDDLE SECTION: 577 WITHOUT CHANNELS AND WITH KNOCK-OUTS FOR WATER PIPING ONLY. TOP SECTION: 577 WITH CAST IN PLACE HATCH RATED TO H20 TRAFFIC LOADING.

 HATCH: HATCH SHALL BE 3'-6" x 3'-6" CLEAR OPENING, SINGLE LEAF, WITH H20 TRAFFIC RATING. OFFSET THE HATCH IN THE VAULT LID AS SHOWN TO PROVIDE ACCESS TO THE LADDER. THE HATCH SHALL BE LW PRODUCTS OR EQUAL WITH BILCO "LADDER-UP" SAFETY POST. THE HATCH SHALL DRAIN TO THE SUMP INSIDE THE VAULT.

 LADDER: HOT DIPPED GALVANIZED BOLT-ON LADDER WITH #6 RUNGS ON 12" CENTERS AND MOUNTING BRACKETS AT TOP, MIDDLE AND BOTTOM. SECURE LADDER TO VAULT WALL WITH OFFSET SUFFICIENT TO PROJECT INTO HATCH.

 PAINTING: THE INTERIOR OF THE CONCRETE VAULT SHALL BE PAINTED AT THE VAULT MANUFACTURER WITH ONE COAT OF STEEL COAT DAMP-TEX NO. 22 PRIMER AND TWO COATS OF STEEL COAT DAMP-TEX DX 110-WHITE. THE EXTERIOR BELOW GRADE SHALL BE PAINTED WITH TWO COATS OF KOPPERS BITUMASTIC BLACK SOLUTION.
2. 2-4" D.I. ADAPTER, FL. x P.E., 4'± LONG.
3. 2-4" RESILIENT SEAT GATE VALVE, NRS, FL., O-RING PACKING WITH HANDWHEEL.
4. 2-4"x3" REDUCER, FL., FOR 3" ASSEMBLY ONLY.
5. 3" OR 4" FLANGED COUPLING ADAPTER, ROMAC FCA 501, OR EQUAL.
6. 3" OR 4" D.I. ADAPTER, FL. x P.E., 9"± LONG (VERIFY).
7. DISTRICT TO PROVIDE CURRENT SPECIFIED METER AT DEVELOPER'S EXPENSE. SIZE OT TO BE DETERMINED DURING DESIGN PROCESS WITH DEVELOPER. READ REMOTE TO BE MOUNTED IN VAULT LID BY DEVELOPER.
8. 3" OR 4" STRAINER, FL., AS RECOMMENDED AND PROVIDED BY METER MANUFACTURER.
9. UNI-FLANGE ADAPTER.
10. 4-2" X 2" X 1/4" MIN. WALL THICKNESS SQUARE STEEL TUBING, 6' MIN. LENGTH. BOLT TO VAULT WALL IN FOUR PLACES WITH STAINLESS STEEL ANCHOR BOLTS.
11. SUMP PUMP OR GRAVITY DRAIN AS REQUIRED BY SITE CONDITIONS, TO BE DETERMINED BY THE DEVELOPER AND CONTRACTOR AND REVIEWED AND APPROVED BY THE DISTRICT. FOR SUMP PUMP: 16" DIAM. x 6" DEEP SUMP WITH HYDROMATIC OSP50 SUMP PUMP. PROVIDE ELECTRICAL POWER PER ALL APPLICABLE CODES. CONSTRUCT 1-1/4" DISCHARGE PIPING ENCASED IN G.I.P. TO NEAREST CATCH BASIN OR APPROVED LOCATION. FOR GRAVITY DRAIN: SUMP DRAIN, ZURN Z-551, THREADED, WITH ZURN Z-1099 BACKWATER VALVE, THREADED X NO-HUB, WITH C.I. PIPE TO 12" MIN. BEYOND VAULT WALL AND 4" PVC D3034 SDR35 TO DAYLIGHT OR C.B.
12. ADJUSTABLE PIPING SUPPORT, "STANDON", OR EQUAL, TWO PLACES.



MATERIAL LIST

1. PRECAST CONCRETE UNDERGROUND VAULT – "UTILITY VAULT COMPANY": 687-LA
 BASE SECTION: 687 WITH SUMP AND GRATE
 MIDDLE SECTION: 687 WITHOUT CHANNELS AND WITH KNOCK-OUTS FOR WATER PIPING ONLY.
 TOP SECTION: 687 WITH CAST-IN-PLACE HATCH RATED TO H20 TRAFFIC LOADING.
 HATCH: HATCH SHALL BE 4'x4' CLEAR OPENING, DOUBLE LEAF WITH H20 TRAFFIC RATING. OFFSET THE HATCH IN THE VAULT LID AS SHOWN TO PROVIDE ACCESS TO THE LADDER. THE HATCH SHALL BE LW PRODUCTS OR EQUAL WITH BILCO "LADDER-UP" SAFETY POST. THE HATCH SHALL DRAIN TO THE SUMP.
 LADDER: HOT DIPPED GALVANIZED BOLT-ON LADDER WITH #6 RUNGS ON 12" CENTERS AND MOUNTING BRACKETS AT TOP, MIDDLE AND BOTTOM. SECURE LADDER TO VAULT WALL WITH OFFSET SUFFICIENT TO PROJECT INTO HATCH CLEAR OPENING.
 PAINTING: THE INTERIOR OF THE CONCRETE VAULT SHALL BE PAINTED AT THE VAULT MANUFACTURER WITH ONE COAT OF STEEL COAT DAMP-TEX NO. 22 PRIMER AND TWO COATS OF STEEL COAT DAMP-TEX DX 110-WHITE. THE EXTERIOR BELOW GRADE SHALL BE PAINTED WITH TWO COATS OF KOPPERS BITUMASTIC BLACK SOLUTION.
2. 2-6" D.I. ADAPTER, FL.x P.E., 4'± LONG
3. 2-6" RESILIENT SEAT GATE VALVE, NRS, FL., O-RING PACKING WITH HANDWHEEL.
4. 6" FLANGED COUPLING ADAPTER, ROMAC FCA 501, OR EQUAL.
5. 6" D.I. ADAPTER, FL.x P.E., 12"± LONG (VERIFY).
6. DISTRICT TO PROVIDE CURRENT SPECIFIED METER AT DEVELOPER'S EXPENSE. SIZE TO BE DETERMINED DURING DESIGN PROCESS WITH DEVELOPER. READ REMOTE TO BE MOUNTED IN VAULT LID BY DEVELOPER.
7. 6" FLANGED STRAINER AS RECOMMENDED AND PROVIDED BY THE METER MANUFACTURER.
8. UNI-FLANGE ADAPTER.
9. 2" x 2" x 1/4" MIN. WALL THICKNESS SQUARE STEEL TUBING, 6' MIN. LENGTH. BOLT TO VAULT WALL IN FOUR PLACES WITH STAINLESS STEEL ANCHOR BOLTS.
10. SUMP PUMP OR GRAVITY DRAIN AS REQUIRED BY SITE CONDITIONS, TO BE DETERMINED BY THE DEVELOPER AND CONTRACTOR AND REVIEWED AND APPROVED BY THE DISTRICT.
 FOR SUMP PUMP: 16" DIAM. x 6" DEEP SUMP WITH HYDROMATIC OSP50 SUMP PUMP. PROVIDE ELECTRICAL POWER PER ALL APPLICABLE CODES. CONSTRUCT 1-1/4" DISCHARGE PIPING ENCASED IN G.I.P. TO NEAREST CATCH BASIN OR APPROVED LOCATION.
 FOR GRAVITY DRAIN: SUMP DRAIN, ZURN Z-551, THREADED, WITH ZURN Z-1099 BACKWATER VALVE, THREADED X NO-HUB, WITH C.I. PIPE TO 12" MIN. BEYOND VAULT WALL AND 4" PVC D3034 SDR35 TO DAYLIGHT OR C.B.
11. ADJUSTABLE PIPING SUPPORT, "STANDON", OR EQUAL, THREE PLACES.

NOTES

1. PROVIDE SHOP DRAWINGS AND SUBMITTALS FOR ALL MATERIALS AND EQUIPMENT TO THE DISTRICT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR ELECTRICAL PERMITS AND APPROVALS FOR SUMP PUMP INSTALLATIONS.

**CROSS VALLEY WATER DISTRICT
STANDARD WATER DETAILS**

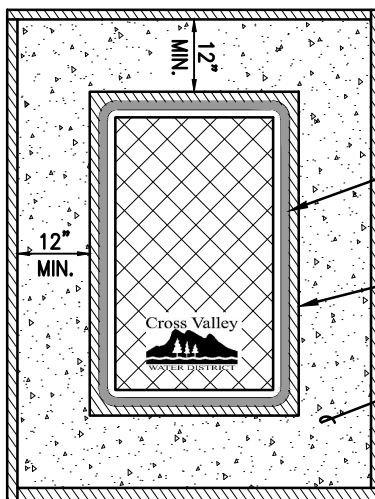
6" WATER SERVICE

WD-4

NOT TO SCALE

JULY 2023

SERVICE TYPE AND LOCATION	H10- UNINTENDED TRAFFIC	H20-TRAFFIC RATED	ADA-NON SKID	BOX TYPE	LID TYPE
1-INCH WATER SERVICE METER BOX IN LANDSCAPE OR DRIVEWAY (SEE NOTE 1)	X		X	CARSON HW 1527BCF HDPE W/ 18" BODY OR SIGMA/RAVEN RMB-152718-SW-B	NICOR HDPE W/ BADGER AMR RECESS AND CVWD LOGO
2-INCH WATER SERVICE METER BOX IN LANDSCAPE, BEHIND VERTICAL CURB ONLY				OLD CASTLE / CARSON HDPE 1730MSBC W/ 18" BODY PEDESTRIAN ONLY	OLD CASTLE / CARSON HDPE 1730 HDPE AMR RECESS W/ PLASTIC READER DOOR PEDESTRIAN ONLY
BLOW OFF AND STAND PIPE ASSEMBLY IN SAME BOX		X	X	CARSON HW 1527BCF HDPE W/ 18" BODY OR SIGMA/RAVEN RMB-152718-SW-B	NICOR HDPE W/ BADGER AMR RECESS AND CVWD LOGO
<p><u>NOTES:</u></p> <p>1. DISTRICT APPROVAL IS REQUIRED FOR INSTALLING METER BOXES IN DRIVEWAYS.</p> <p>2. EQUIVALENT MAY BE CONSIDERED BY THE DISTRICT.</p>					
CROSS VALLEY WATER DISTRICT STANDARD WATER DETAILS				METER BOXES AND LIDS	
				WD-5	NOT TO SCALE FEB 2022



REFER TO DETAIL WD-5 FOR
METER BOX AND LID TYPE

CONCRETE MASTIC EXPANSION
JOINT ALL SIDES (FULL DEPTH)

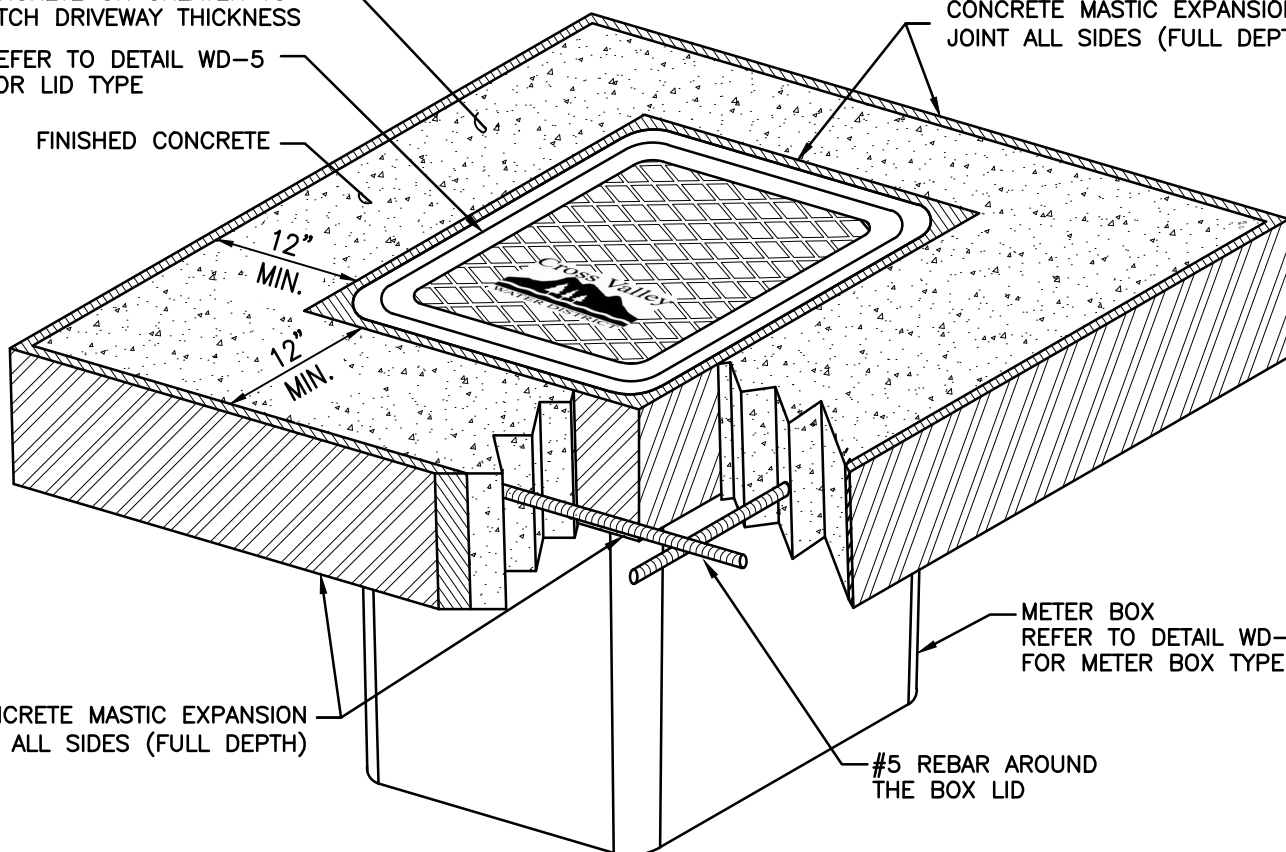
FINISHED CONCRETE

12" MIN. ALL SIDES x 6"
MIN. THICK REINFORCED
CONCRETE OR GREATER TO
MATCH DRIVEWAY THICKNESS

REFER TO DETAIL WD-5
FOR LID TYPE

FINISHED CONCRETE

CONCRETE MASTIC EXPANSION
JOINT ALL SIDES (FULL DEPTH)



METER BOX
REFER TO DETAIL WD-5
FOR METER BOX TYPE

#5 REBAR AROUND
THE BOX LID

CONCRETE MASTIC EXPANSION
JOINT ALL SIDES (FULL DEPTH)

NOTES:

1. DISTRICT APPROVAL IS REQUIRED FOR INSTALLING METER BOXES IN DRIVEWAYS.
2. FOR USE IN CONCRETE DRIVEWAY ONLY.
3. COMPACTED 5/8" MINUS CRUSHED ROCK BASE UNDER BOX FOR SUPPORT REQUIRED.

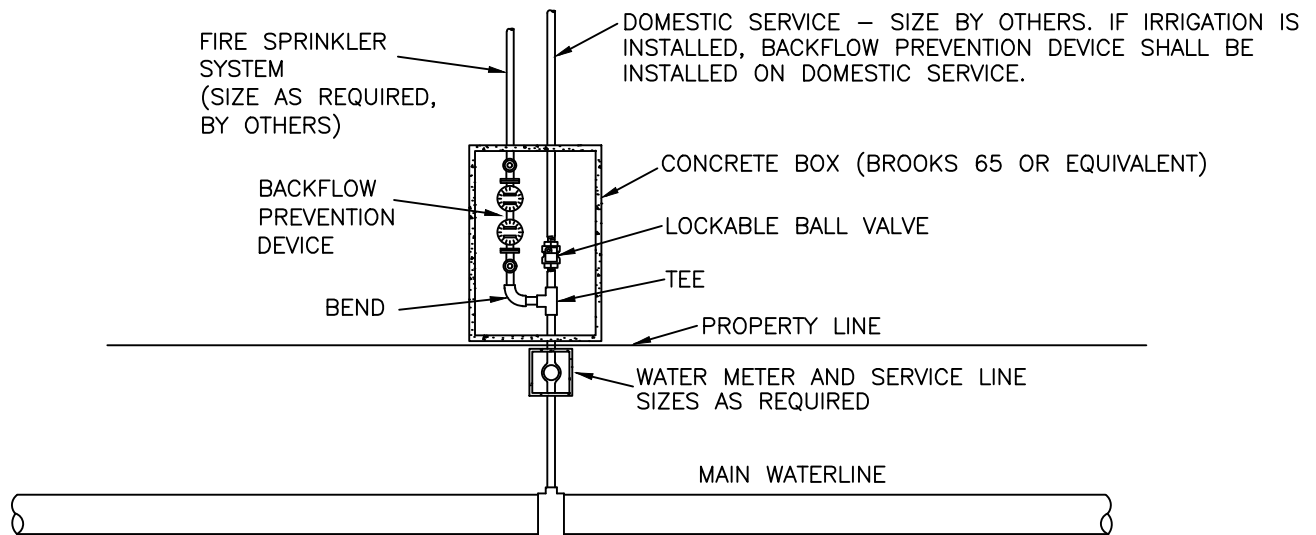
**CROSS VALLEY WATER DISTRICT
STANDARD WATER DETAILS**

**BLOCK OUT FOR METER BOXES
IN CONCRETE DRIVEWAYS**

WD-5A

NOT TO SCALE

JULY 2023



NOTES:

1. WATER METER AND DOMESTIC SERVICE LINE SIZES TO BE APPROVED BY DISTRICT
2. FIRE SPRINKLER PLANS TO BE REVIEWED AND APPROVED BY DISTRICT ENGINEER PRIOR TO UNLOCKING METER
3. INSTALLATION TO BE INSPECTED BY DISTRICT
4. ALL MATERIALS TO BE LEAD FREE
5. IF FLOW-THROUGH SYSTEM IS USED ON FIRE LINE, THEN NO BACKFLOW PREVENTION DEVICE IS REQUIRED. A FIRE SYSTEM PLAN SHALL BE SUBMITTED TO WAIVE THE DEVICE REQUIREMENT.
6. NO CHEMICALS ALLOWED. BACKFLOW DEVICE IS TO BE TESTED AT INSTALLATION AND ANNUALLY THEREAFTER BY WASHINGTON STATE CERTIFIED TESTER. COPY OF TEST REPORT SENT TO WATER DISTRICT.

**CROSS VALLEY WATER DISTRICT
STANDARD WATER DETAILS**

**RESIDENTIAL DOMESTIC AND
FIRE SPRINKLER SYSTEMS
OUTSIDE PIPING PLAN**

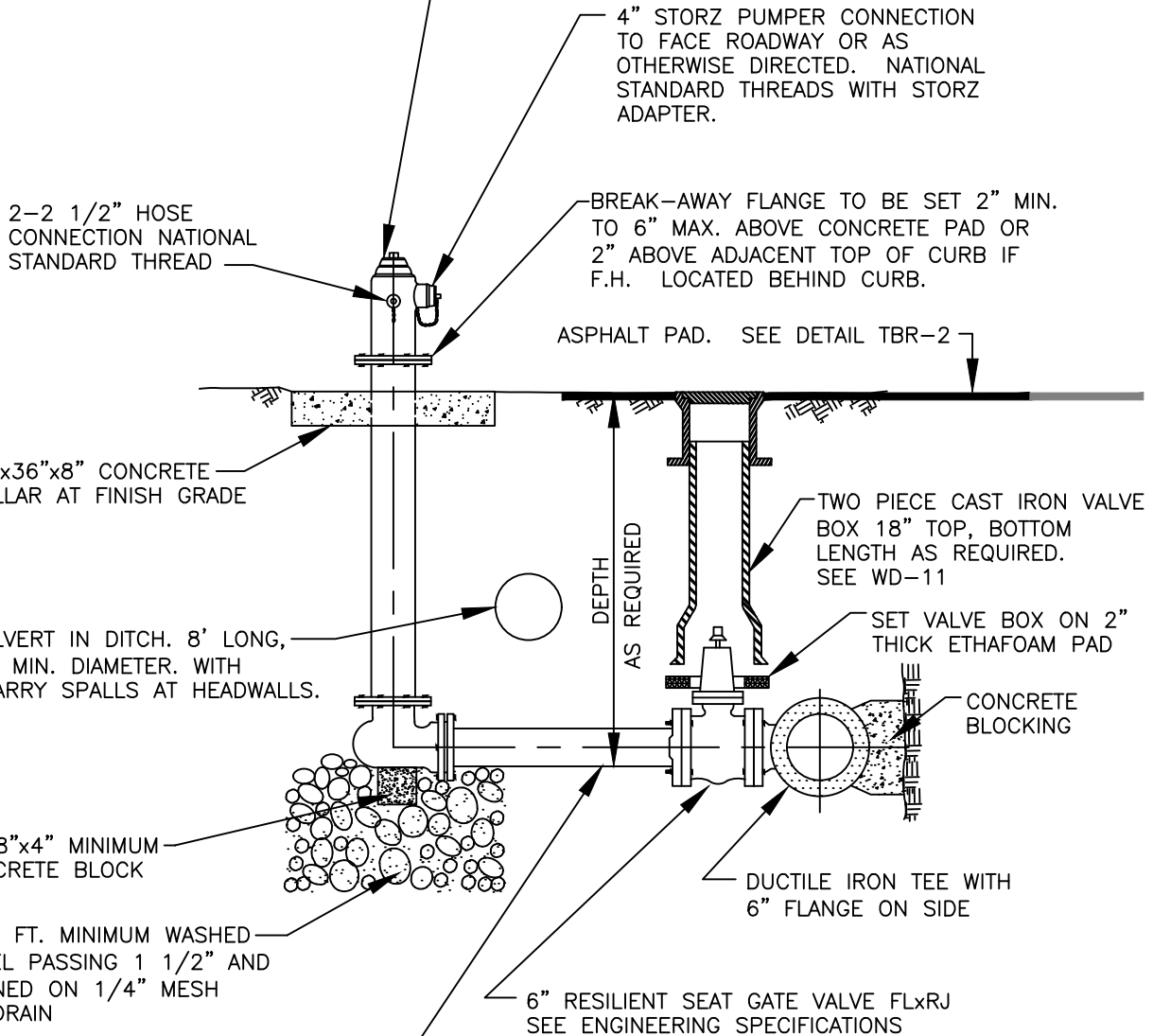
WD-6

NOT TO SCALE

FEB 2022

LIST OF ACCEPTABLE FIRE HYDRANTS:
 EAST JORDAN WATERMASTER 5CD250 WITH 4" STORZ
 AMERICAN DARLING B62B HIGH PRESSURE
 MUELLER SUPER CENTURION 250

FIRE HYDRANT 5 1/4" MAIN VALVE OPENING
 1- 4 1/2" PUMPER CONNECTION (NST) WITH 4" STORZ ADAPTER
 2- 2 1/2" HOSE CONNECTION (NST)
 1- 6" MECHANICAL JOINT INLET WITH LUGS
 1- 1 1/4" PENTAGON OPERATING NUT OPENING COUNTERCLOCKWISE.
 PAINT HYDRANT WITH TWO COATS OF RUST-OLEUM
 HIGH-PERFORMANCE PROTECTIVE ENAMEL 7543
 "SAFETY YELLOW"



6" DUCTILE IRON CLASS 52 PIPE
 WITH POLY WRAP AND RESTRAINED
 JOINTS ENTIRE LENGTH, INCLUDING
 VALVE AND HYDRANT BEND.

NOTE:
 HYDRANTS NOT IN SERVICE SHALL BE
 COVERED WITH BLACK HEAVY DUTY
 LAWN AND GARDEN BAG, SECURE WITH
 DUCT TAPE OR ELECTRICAL TAPE

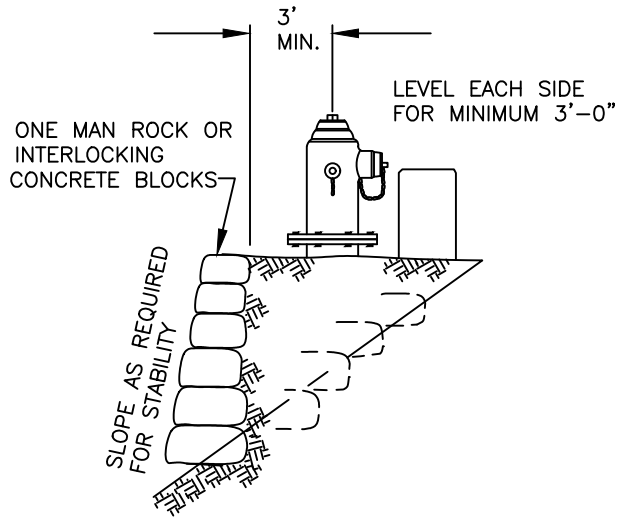
CROSS VALLEY WATER DISTRICT
 STANDARD WATER DETAILS

FIRE HYDRANT ASSEMBLY

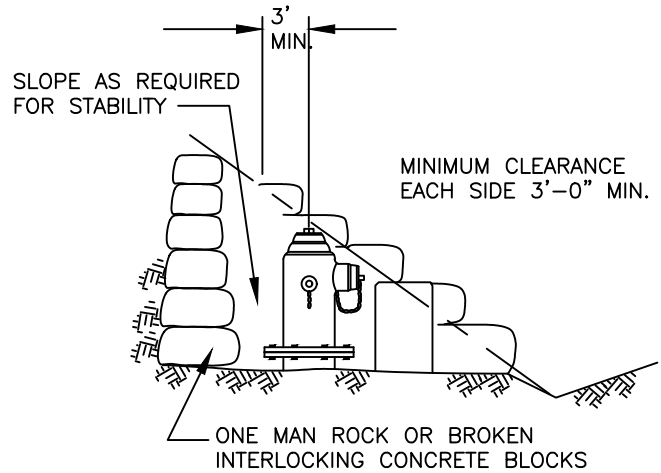
WD-7

NOT TO SCALE

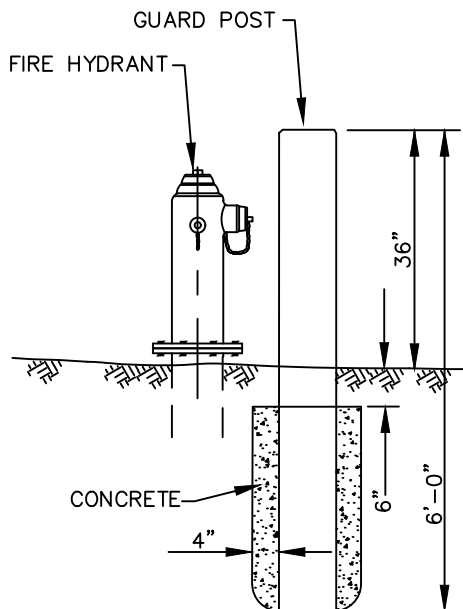
APR 2024



FIRE HYDRANT IN FILL

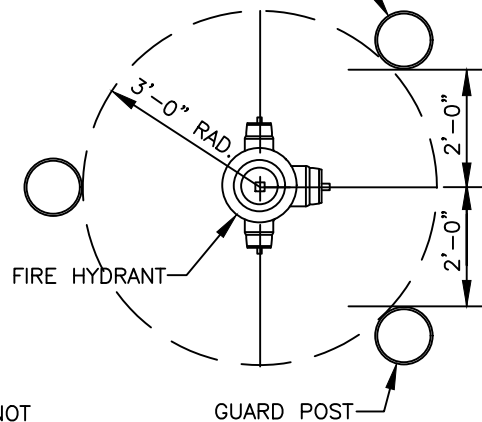


FIRE HYDRANT IN CUT



ELEVATION

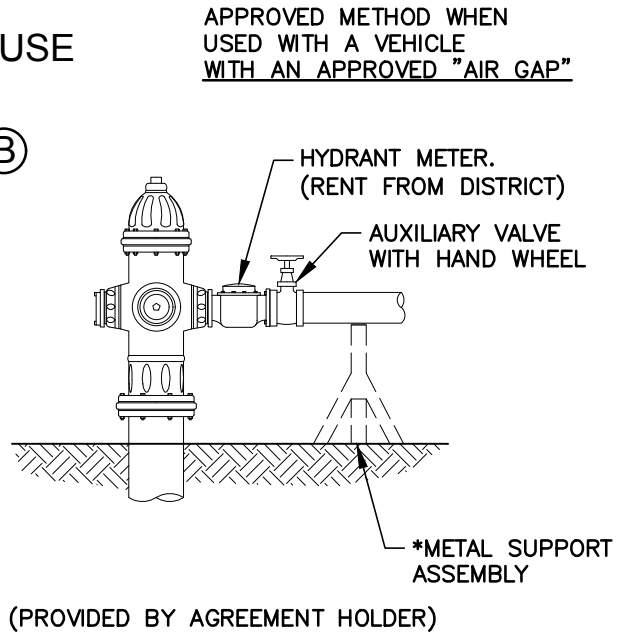
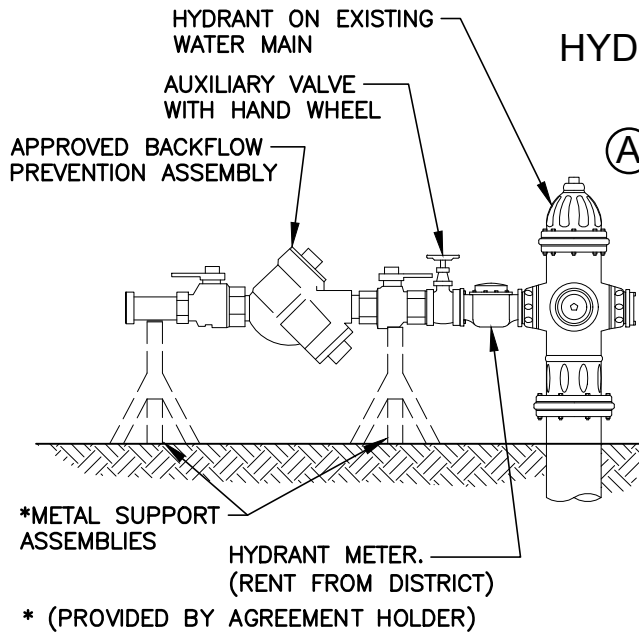
9" ROUND REINFORCED CONCRETE GUARD POST, 6'-0" LONG EQUAL TO RENTON CONCRETE PRODUCTS. TO BE INSTALLED ONLY WHERE DIRECTED. PAINT TWO COATS KELLY-MOORE "SAFETY YELLOW" INDUSTRIAL ENAMEL.



PLAN

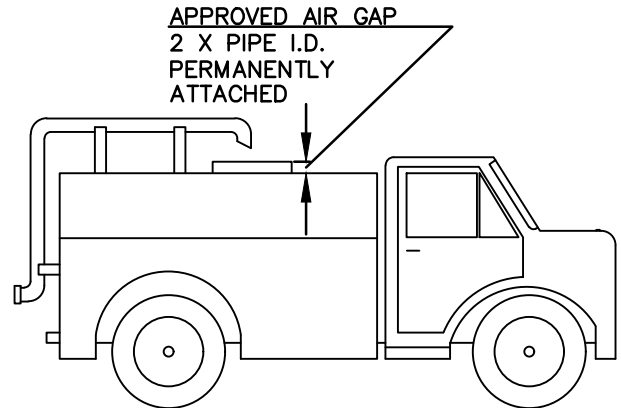
NOTE:
IF CONCRETE IS NOT SPECIFIED, EARTH BACKFILL TO BE COMPACTED.

HYDRANT USE



HYDRANT USE PROCEDURES

1. ALL USERS MUST HAVE A VALID "HYDRANT METER USE AGREEMENT" FROM CROSS VALLEY WATER DISTRICT IN THEIR POSSESSION AND ON FILE. WATER FROM HYDRANTS WITHIN THE DISTRICTS CANNOT BE USED OUTSIDE THE DISTRICT BOUNDARIES.
2. NOTIFY THE DISTRICT AT (360) 668-6766, 2 BUSINESS DAYS BEFORE CONNECTION TO HYDRANT. DISTRICT STAFF SHALL INSTALL AND REMOVE THE METER TO ENSURE THE HYDRANT AND METER OPERATE PROPERLY ON CVWD APPROVED/DESIGNATED HYDRANTS.
3. ALL VEHICLES AND VESSELS ARE SUBJECT TO INSPECTION THE FIRST TIME THE HYDRANT METER IS USED AND ANYTIME THEREAFTER AT THE DISTRICT'S DISCRETION TO DETERMINE IF IT WILL REQUIRE HYDRANT USE TYPE A OR TYPE B.
4. THERE SHALL BE AN ACCEPTABLE WASHINGTON STATE APPROVED "BACKFLOW DEVICE" WHEN REQUIRED. THE BACKFLOW DEVICE MUST HAVE BEEN TESTED WITHIN THE PREVIOUS YEAR BY A CERTIFIED BACKFLOW TESTER. THE DISTRICT SHALL BE FURNISHED WITH A COPY OF THE TESTING REPORT.
5. THE REQUESTOR SHALL PROVIDE SUPPORT UNDER THE METER, BACKFLOW AND VALVE.
6. THE REQUESTOR SHALL NOT MOVE OR REMOVE THE HYDRANT METER OR OPERATE THE HYDRANT.
7. THE REQUESTOR IS RESPONSIBLE FOR ANY AND ALL DAMAGE'S TO THE HYDRANT AND/OR METER, INCLUDING PROVIDING PROTECTION FROM FREEZING AND/OR THEFT.
8. THE WATER USE SHALL BE CONTROLLED EXCLUSIVELY BY THE AUXILIARY VALVE. THE AUXILIARY VALVE SHALL BE OPERATED IN SLOW MANNER TO PREVENT UNDUE EXCESSIVE PRESSURE ON THE WATER SYSTEM.
9. ANY VIOLATION OF ANY OF THE ABOVE SHALL CONSTITUTE TERMINATION OF HYDRANT METER USE AGREEMENT AND USER TO BE SUBJECT TO A FINE, FUTURE RENTALS AND/OR FORFEIT OF DEPOSIT.
10. IF UNABLE TO OPERATE OR CLOSE THE AUXILIARY VALVE PROPERLY, CALL THE DISTRICT IMMEDIATELY FOR ASSISTANCE AT (360) 668-6766
11. SEE CVWD CODE SECTION 6.30 FOR MORE INFORMATION.



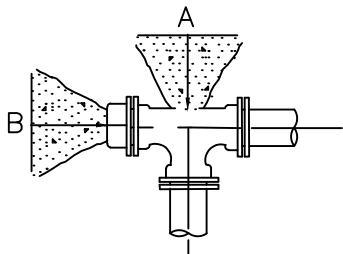
**CROSS VALLEY WATER DISTRICT
STANDARD WATER DETAILS**

**FIRE HYDRANT USE
REQUIREMENTS**

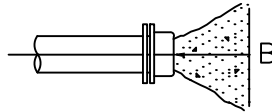
WD-7B

NOT TO SCALE

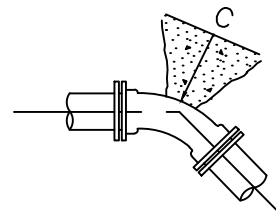
JULY 2024



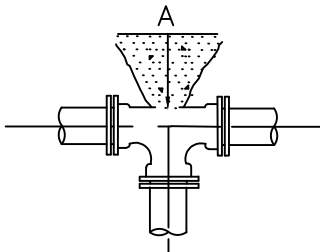
TEE W/ PLUG (MJ OR FL)
(TEE IN PLACE OF 90° BEND)



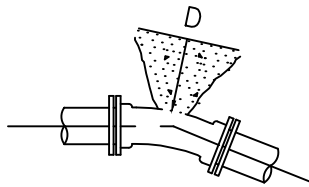
CAP OR PLUG



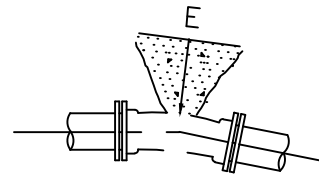
45° BEND



TEE



22 1/2° BEND



11 1/4° BEND

THRUST BLOCK – TABLE

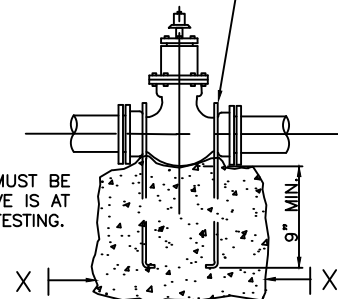
		MINIMUM BEARING AREA AGAINST UNDISTURBED SOIL SQUARE FEET					
PIPE SIZE	PRESSURE PSI	A	B	C	D	E	X (100PSI)
4"	200	2/(1)	1/(NONE)	1/(NONE)	NONE	NONE	NONE
	300	3/(2)	2/(2)	2/(1)	1/(1)	NONE	NONE
6"	200	4/(3)	3/(2)	3/(1)	1/(1)	1/(NONE)	NONE
	300	6/(4)	4/(3)	3/(2)	2/(1)	1/(NONE)	NONE
8"	200	7/(5)	5/(3)	4/(3)	2/(2)	1/(1)	3/(2)
	300	11/(8)	8/(5)	6/(4)	3/(2)	2/(1)	
10"	200	11/(8)	8/(6)	6/(4)	3/(2)	2/(1)	4/(3)
	275	16/(11)	11/(7)	9/(6)	5/(3)	3/(2)	
12"	200	16/(11)	11/(8)	9/(6)	5/(3)	3/(2)	5/(4)
	250	24/(16)	17/(11)	13/(9)	7/(5)	4/(3)	
14"	200	22/(13)	16/(11)	12/(8)	6/(4)	3/(2)	7/(6)
	250	33/(22)	23/(16)	18/(12)	9/(6)	5/(3)	
16"	200	29/(19)	21/(14)	16/(11)	8/(6)	5/(3)	10/(7)
	225	32/(21)	23/(16)	17/(12)	9/(6)	5/(3)	
18"	200	36/(24)	26/(17)	20/(13)	10/(7)	5/(4)	13/(9)
20"	200	45/(29)	32/(21)	24/(16)	13/(8)	7/(4)	16/(11)
24"	200	64/(43)	46/(30)	35/(23)	18/(12)	9/(6)	23/(16)

NOTES:

- SQUARE FEET OF CONCRETE THRUST – BLOCK AREA BASED ON SAFE BEARING LOAD OF 2000/(3000) POUND PER SQUARE FEET.
- AREAS MUST BE ADJUSTED FOR OTHER SIZE PIPE, PRESSURE & SOIL CONDITIONS.
- CONCRETE BLOCKING SHALL BE CAST IN PLACE & HAVE MINIMUM OF 1/4 SQUARE FOOT BEARING AGAINST THE FITTING.
- BLOCK SHALL BEAR AGAINST FITTINGS ONLY & SHALL BE CLEAR OF JOINTS TO PERMIT TAKING UP OR DISMANTLING JOINT.
- CONTRACTOR SHALL INSTALL BLOCKING ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATING PRESSURE UNDER ALL CONDITIONS OF SERVICE.

- 2 - 1/2" Ø S.S. RODS FOR 10" SIZE AND SMALLER
2 - 1" Ø S.S. RODS FOR LARGER THAN 10" SIZE

NOTE:
ADDITIONAL BLOCKING MUST BE PROVIDED IF GATE VALVE IS AT END OF LINE DURING TESTING.



GATE VALVE

SAFE BEARING LOADS IN LB./SQ. FT.

THE SAFE BEARING LOADS GIVEN IN THE FOLLOWING TABLE ARE FOR HORIZONTAL THRUSTS WHEN THE DEPTH OF COVER OVER THE PIPE EXCEEDS 2 FEET.

SOIL	SAFE BEARING LOAD LB. PER SQ. FT.
*MUCK, PEAT, ETC.	0
SOFT CLAY	1,000
SAND	2,000
SAND AND GRAVEL	3,000
SAND AND GRAVEL CEMENTED WITH CLAY	4,000
HARD SHALE	10,000

*IN MUCK OR PEAT, ALL THRUSTS SHALL BE RESTRAINED BY PILES OR TIE RODS TO SOLID FOUNDATIONS OR BY REMOVAL OF MUCK OR PEAT AND REPLACEMENT WITH BALLAST OF SUFFICIENT STABILITY TO RESIST THRUSTS.

CROSS VALLEY WATER DISTRICT
STANDARD WATER DETAILS

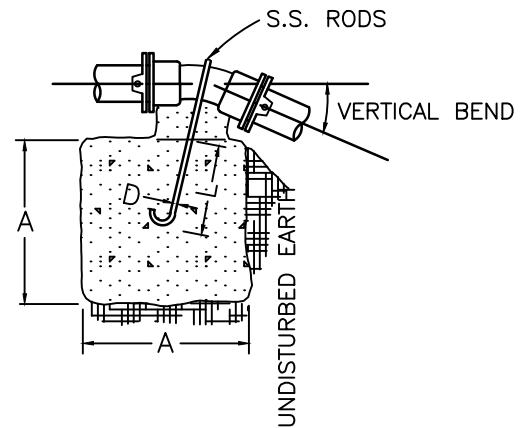
THRUST BLOCK

WD-8

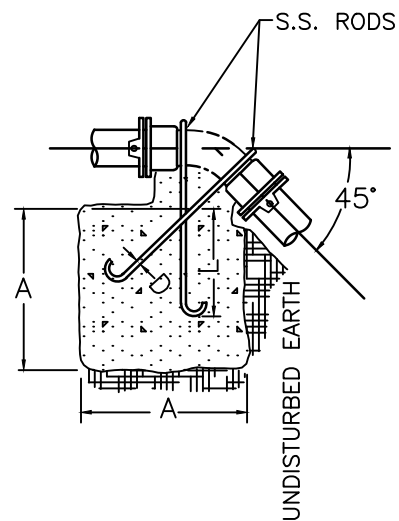
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VERTICAL BLOCKING					
PIPE SIZE	VERT. BEND	CU. FT.	A	D	L
4"	11-1/4°	8	2.0'	3/4"	1.5'
	22-1/2°	11	2.2'	3/4"	2.0'
	30°	17	2.6'	3/4"	2.0'
	45°	30	3.1'	3/4"	2.0'
6"	11-1/4°	11	2.2'	3/4"	2.0'
	22-1/2°	25	2.9'	3/4"	2.0'
	30°	41	3.5'	3/4"	2.0'
	45°	68	4.1'	3/4"	2.0'
8"	11-1/4°	16	2.5'	3/4"	2.0'
	22-1/2°	47	3.6'	3/4"	2.5'
	30°	70	4.1'	3/4"	2.5'
	45°	123	5.0'	3/4"	2.0'
12"	11-1/4°	32	3.2'	3/4"	2.0'
	22-1/2°	88	4.5'	7/8"	3.0'
	30°	132	5.1'	7/8"	2.5'
	45°	232	6.1'	7/8"	2.5'
16"	11-1/4°	70	4.1'	7/8"	3.0'
	22-1/2°	184	5.7'	1-1/8"	4.0'
	30°	275	6.5'	1-1/4"	4.0'
	45°	478	7.8'	1-1/8"	4.0'
20"	11-1/4°	91	4.5'	7/8"	3.0'
	22-1/2°	225	6.1'	1-1/4"	4.0'
	30°	330	6.9'	1-3/8"	4.5'
	45°	560	8.2'	1-1/4"	4.0'
24"	11-1/4°	128	5.0'	1"	3.5'
	22-1/2°	320	6.8'	1-3/8"	4.5'
	30°	480	7.9'	1-5/8"	5.5'
	45°	820	9.4'	1-3/8"	4.5'



VERTICAL BLOCKING
FOR 11 1/4°, 22 1/2° & 30° BENDS

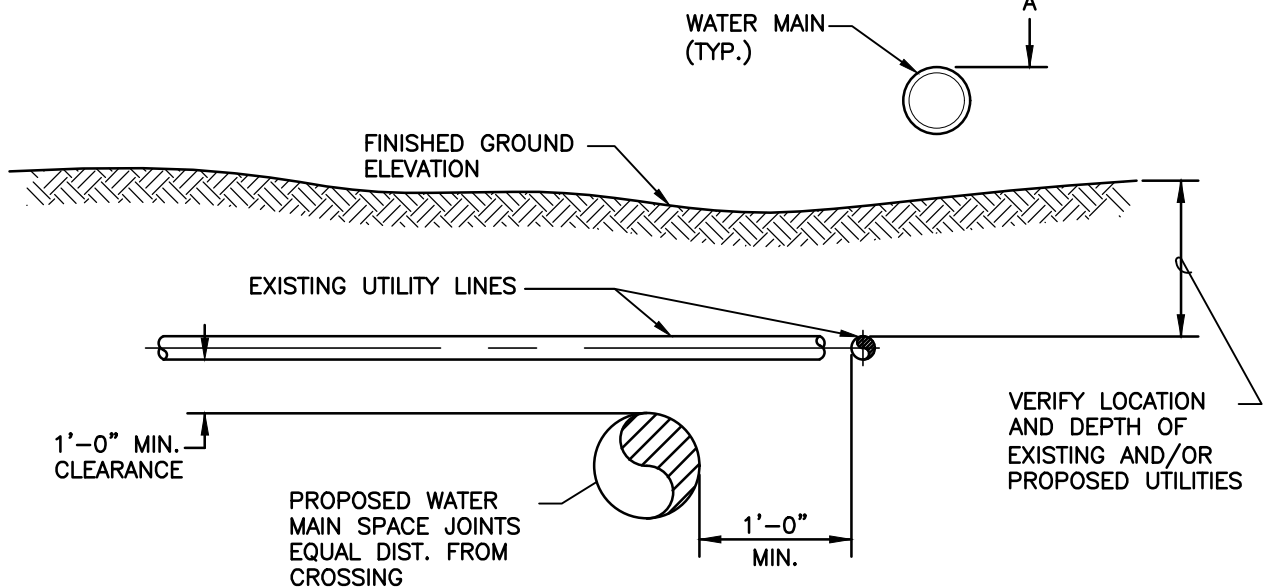
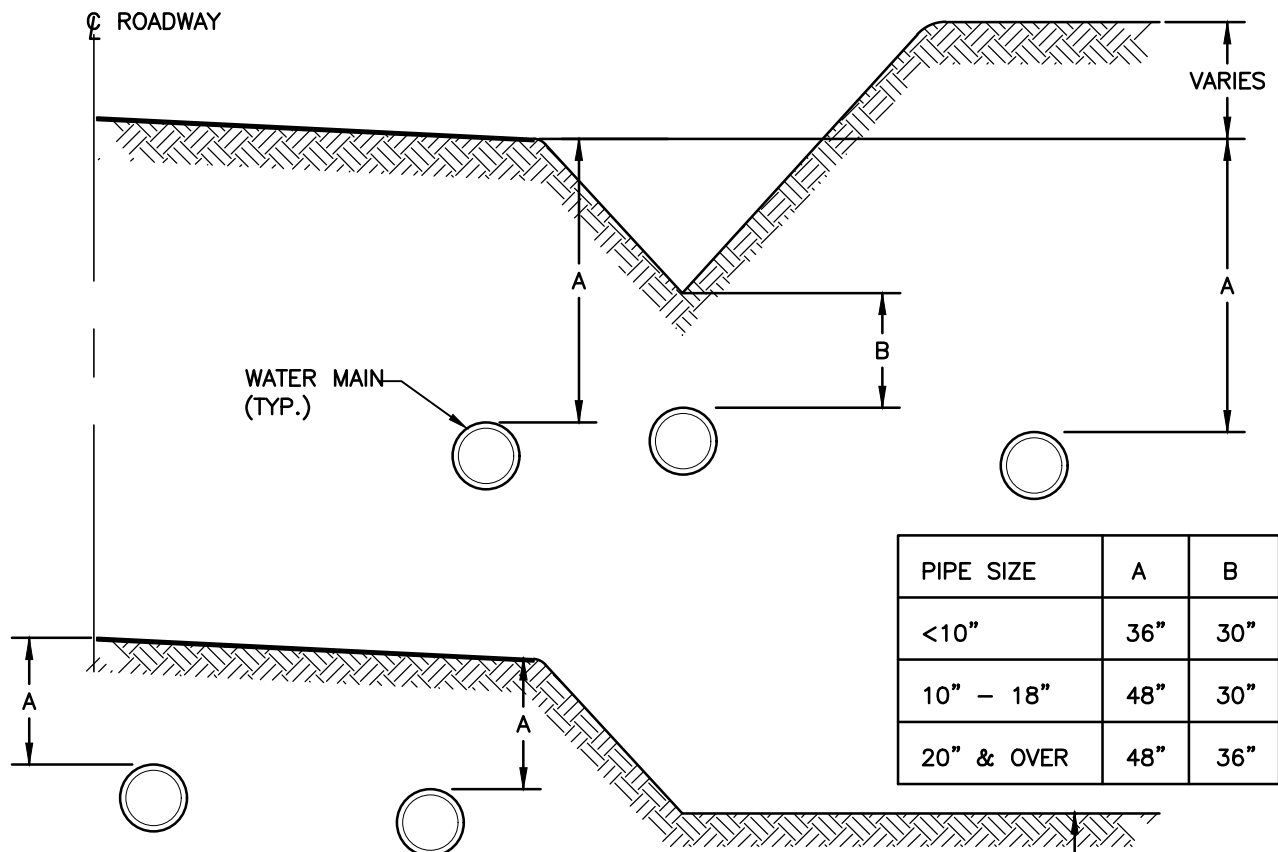


VERTICAL BLOCKING
FOR 45° BENDS

NOTES:

1. CONCRETE BLOCKING IS BASED ON 250 PSI PRESSURE AND 2500 PSI CONCRETE STRENGTH.
2. RODS TO BE 304 STAINLESS STEEL.
3. ALL VERTICAL BENDS SHALL BE INSTALLED WITH RESTRAINED JOINTS ACCORDING TO THE ENGINEERING SPECIFICATIONS.

FILE NAME: \\K-FSI\LIBRARY\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\WD-9.DWG



NOTES:

1. IN THE CASE OF CONFLICTS WITH OTHER UTILITIES, ROUTE WATER MAINS UNDER CONFLICTING UTILITIES. POTHOLING PRIOR TO INSTALLING WATER MAIN IS REQUIRED TO PROVIDE CONSISTENT LINE AND GRADE.
2. IN THE CASE OF CONFLICTS WITH SEWER LINES, FOLLOW ECOLOGY REQUIREMENTS OR AS DIRECTED.
3. MAIN TO BE INSTALLED AT CONSISTENT GRADE. MAXIMUM DEFLECTION SHALL BE 2 PERCENT AT EACH JOINT.

**CROSS VALLEY WATER DISTRICT
STANDARD WATER DETAILS**

**MINIMUM STANDARD DEPTH
REQUIREMENTS**

WD-9

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JULY 2024

PARALLEL CONSTRUCTION

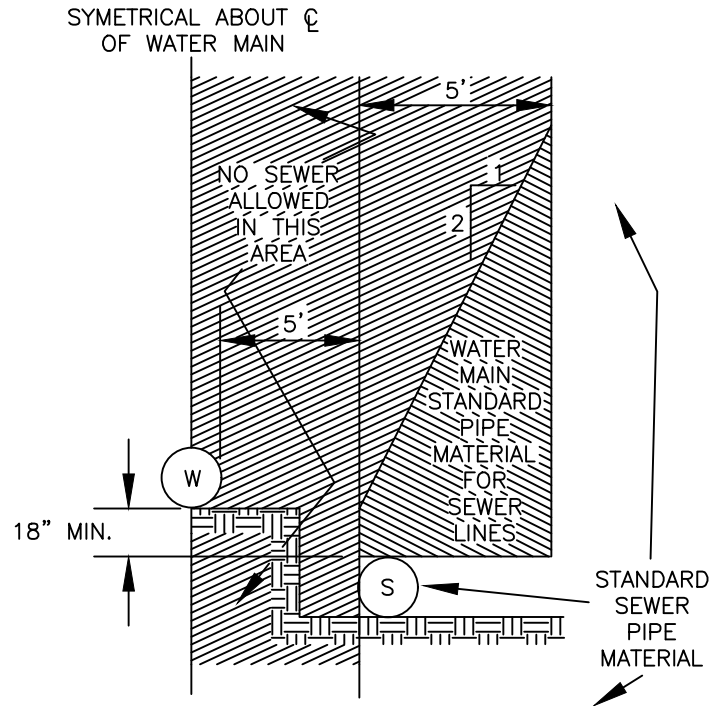


TABLE 1

WATER MAIN STANDARD PIPE MATERIAL

TYPE OF PIPE	AWWA (ASTM) STANDARD		
	PIPE	JOINT	FITTINGS
DUCTILE IRON	C 151 & C104	C 111	C 153
PVC	C900	D3139	C 111

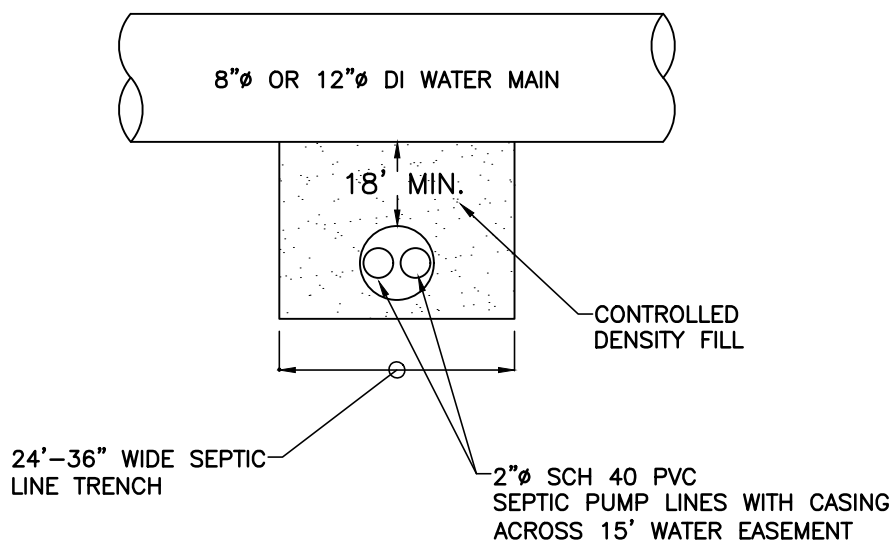
ALL WATER AND SEWER LINE SEPARATION SHALL MEET DOE STANDARDS

NOTES:

FOR PERPENDICULAR CONSTRUCTION, MAINTAIN 18" VERTICAL SEPARATION OR CONSTRUCT SEWER LINE USING WATER MAIN STANDARDS SET FORTH ABOVE WITH MINIMUM 18 FEET LENGTH CENTERED OVER CROSSING TO MAXIMIZE JOINT SEPARATION.

PRESSURE SEWER PIPES SHALL BE CONSTRUCTED PER WATER MAIN STANDARDS.

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CROSS VALLEY WATER DISTRICT STANDARD WATER DETAILS

WATER AND SEPTIC LINE CROSSING DETAIL

WD-9B

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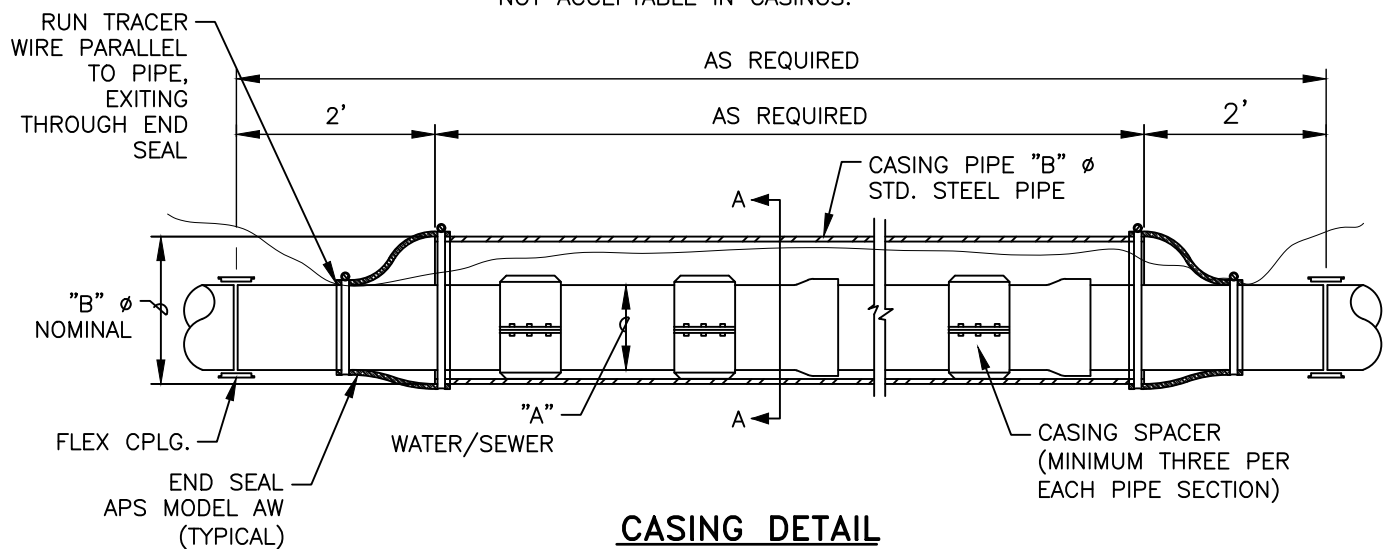
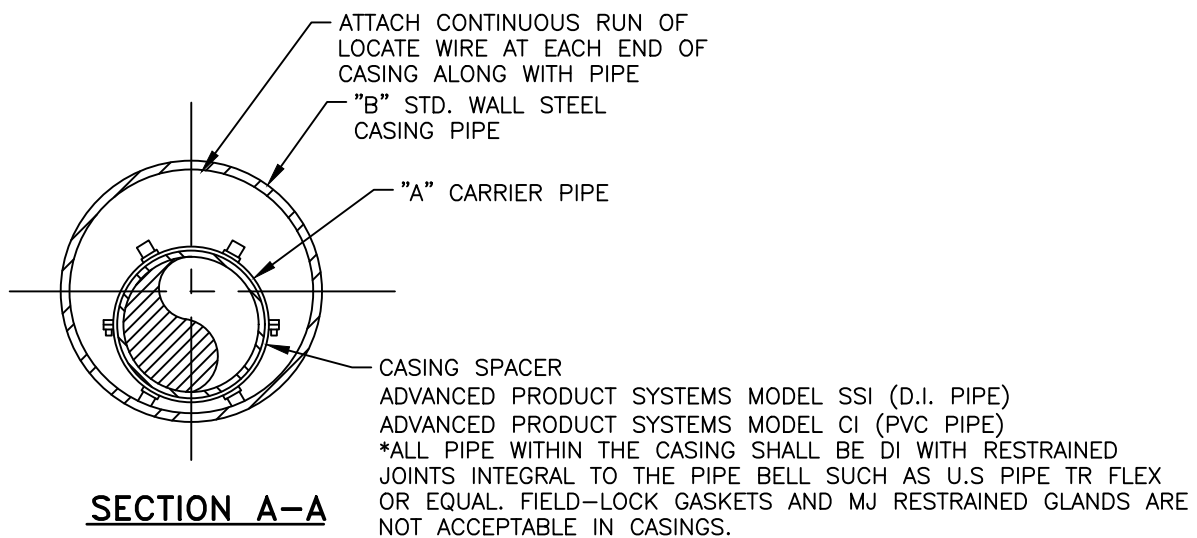
FEB 2022

WATER PIPE SCHEDULE

"A" PIPE SIZES	"B" MIN. CASING SIZES	CASING WALL THICKNESS
6"	12"	.25"
8"	16"	.25"
10"	20"	.344"
12"	24"	.406"
14"	28"	.469"
16"	32"	.50"

SEWER PIPE SCHEDULE

"A" PIPE SIZES	"B" MIN. CASING SIZES	CASING WALL THICKNESS
6"	12"	.25"
8"	16"	.25"
10"	18"	.312"
12"	20"	.334"
15"	24"	.406"



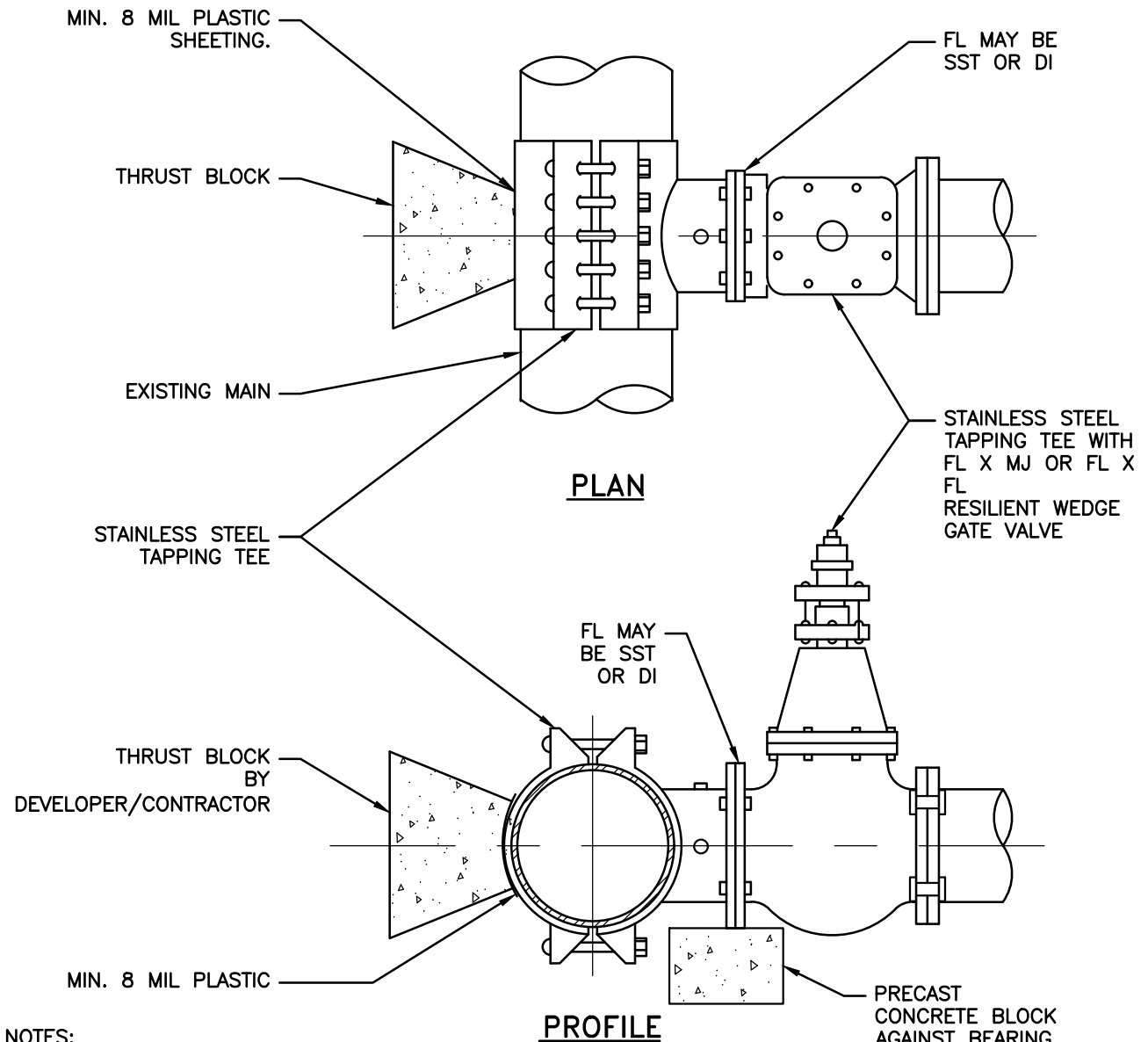
**CROSS VALLEY WATER DISTRICT
STANDARD WATER DETAILS**

**WATER OR SEWER MAIN CASING
DETAIL**

WD-9C

NOT TO SCALE

JULY 2023



NOTES:

1. STAINLESS STEEL TAPPING TEE SHALL BE ROMAC OR SMITH BLAIR ONLY. O.D. RANGES ARE FOR D.I. PIPE.

O.D. RANGES (INCHES)	
6"	6.59-6.99
8"	8.62-9.06
12"	12.90-13.30
16"	17.15-17.55

FOR LARGER SIZES, CONSULT THE DISTRICT

2. ALL WATER MAIN TAPS SHALL BE BY AN APPROVED DISTRICT TAPPER DURING SUBMITTALS, UNLESS OTHERWISE SPECIFIED.
3. DEVELOPER/CONTRACTOR SHALL PROVIDE ALL REQUIRED EXCAVATION AND RESTORATION.
4. DEVELOPER/CONTRACTOR TO FURNISH ALL MATERIALS AND BLOCKING AND TEST TAPPING TEE AND VALVE PRIOR TO TAPPING THE MAIN.
5. PRELIMINARY EXCAVATION MAY BE REQUIRED TO VERIFY EXISTING PIPE O.D. AND MATERIAL TYPE.
6. CONNECTIONS NOT ALLOWED ON FRIDAYS, HOLIDAYS, DAY BEFORE HOLIDAYS, OR WEEKENDS.

**CROSS VALLEY WATER DISTRICT
STANDARD WATER DETAILS**

TAPPING TEE AND VALVE

WD-10

NOT TO SCALE

JULY 2023

NO.	ITEM	MATERIAL	SIZE	MANUFACTURER NO.	USE
1.	VALVE BOX BOTTOM	C.I.	30"	EJ85556030U	ALL AREAS
2.	VALVE BOX TOP	C.I.	16"	EJ85557016U	NOT IN ADA AREA
3.	VALVE BOX COVER	C.I.	LOGO LID CROSS VALLEY	EJ06800221	ADA AREA COVER (FOR PRIVATE LIDS USE EJIW 6800)

MATCH EXISTING PAVEMENT THICKNESS OR 3" MIN. DEPTH, 1/2" HMA ASPHALT PATCH SEE DETAIL TBR-2.

CLEAN AND TACK EDGES WITH SEALER CSS1 AND SEAL JOINTS WITH HOT ASPHALT CEMENT (AR4000W). SAND AFTER SEALANT IS APPLIED.

VALVE BOX CENTERED OVER OPERATING NUT

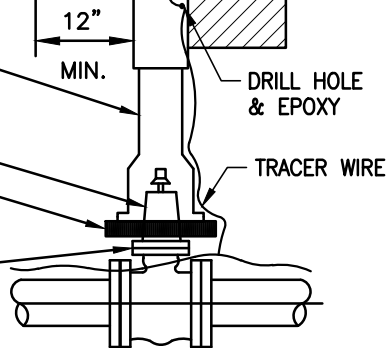
VALVE

SET VALVE BOX ON ETHAFOAM 2" THICK (TYP)

VALVE SHOWN IS GATE VALVE. USE SAME INSTALLATION FOR BUTTERFLY VALVE

1' EXCESS LOCATE WIRE ABOVE VALVE LID
VALVE BOX AND LID FLUSH WITH GRADE IN ASPHALT AREAS. SEE NOTE A.

FINISHED GRADE
EXISTING ASPHALT



VALVE BOX IN ASPHALT AREA

NOTES:

- HEAVY DUTY VALVE BOX WITH MIN. 30" LENGTH BASE AND DROP HANDLE COVER.
- PAVEMENT RESTORATION IN ACCORDANCE WITH CURRENT SNOHOMISH COUNTY ENGINEERING DESIGN AND DEVELOPMENT STANDARDS.
- 24" MIN. (TYP.) IF OPERATING NUT IS MORE THAN 3 FEET BELOW FINISHED GRADE SEE DETAIL WD-11D.
- EJIW OR APPROVED EQUAL, MANUFACTURED IN THE U.S.A.

1' EXCESS LOCATE WIRE ABOVE VALVE LID

VALVE BOX AND LID (ALIGN LID WITH PIPE DIRECTION)

VALVE BOX CENTERED OVER OPERATING NUT

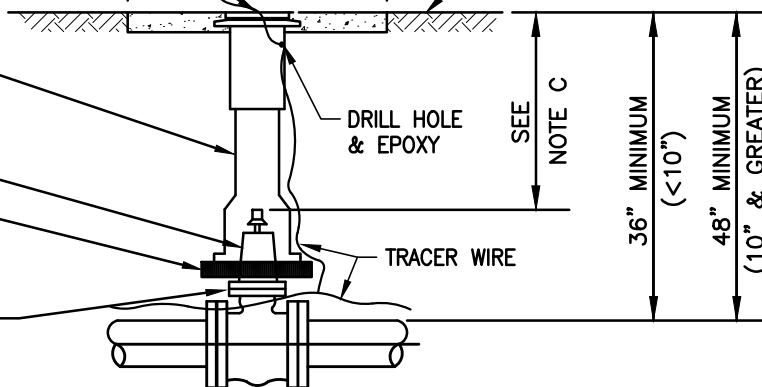
VALVE

SET VALVE BOX ON ETHAFOAM 2" THICK (TYP)

VALVE SHOWN IS GATE VALVE. USE SAME INSTALLATION FOR BUTTERFLY VALVE

REFER TO DETAIL TBR-2

FINISHED GRADE



VALVE BOX IN UNIMPROVED AREA

CSS1= CATIONIC SLOW SETTING TYPE 1
AR4000W= ASPHALT RUBBER TYPE 4000W
HMA = HOT MIX ASPHALT

**CROSS VALLEY WATER DISTRICT
STANDARD WATER DETAILS**

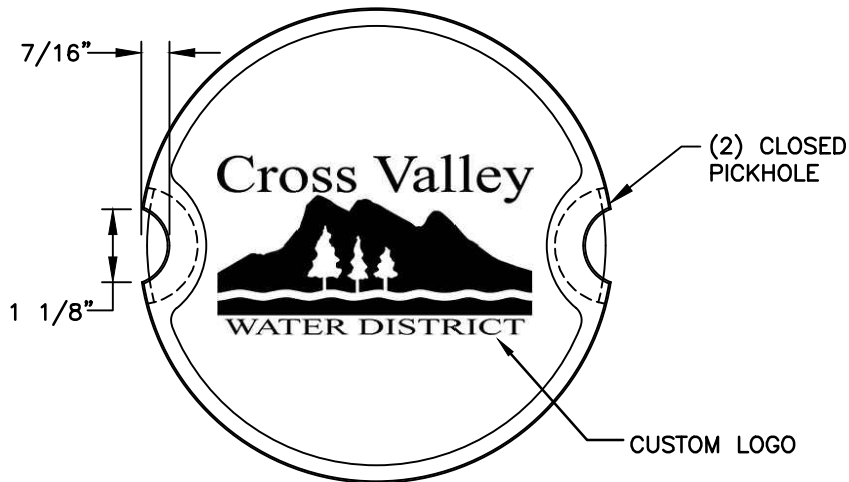
CAST IRON VALVE AND BOX

WD-11

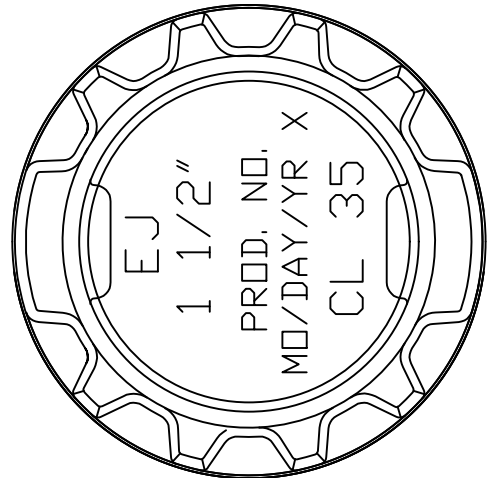
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JULY 2024

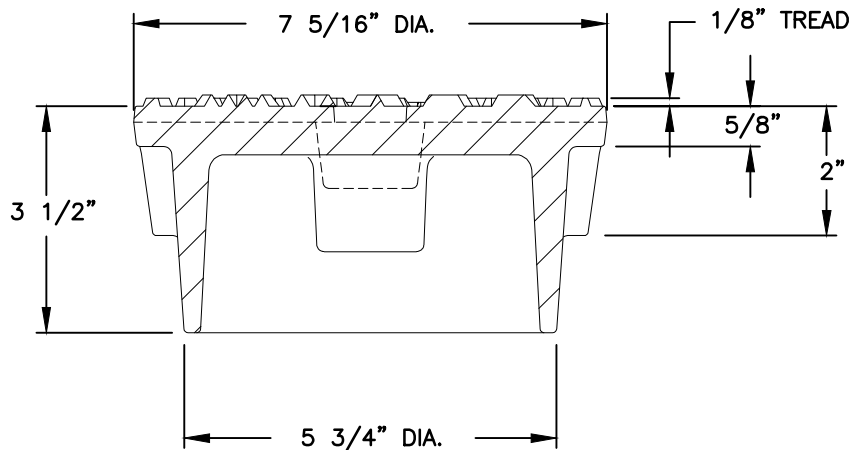
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PLAN VIEW



BOTTOM VIEW



SECTION VIEW

NOTE:

EJIW 6800 TO BE USED
ON PRIVATE SIDE.

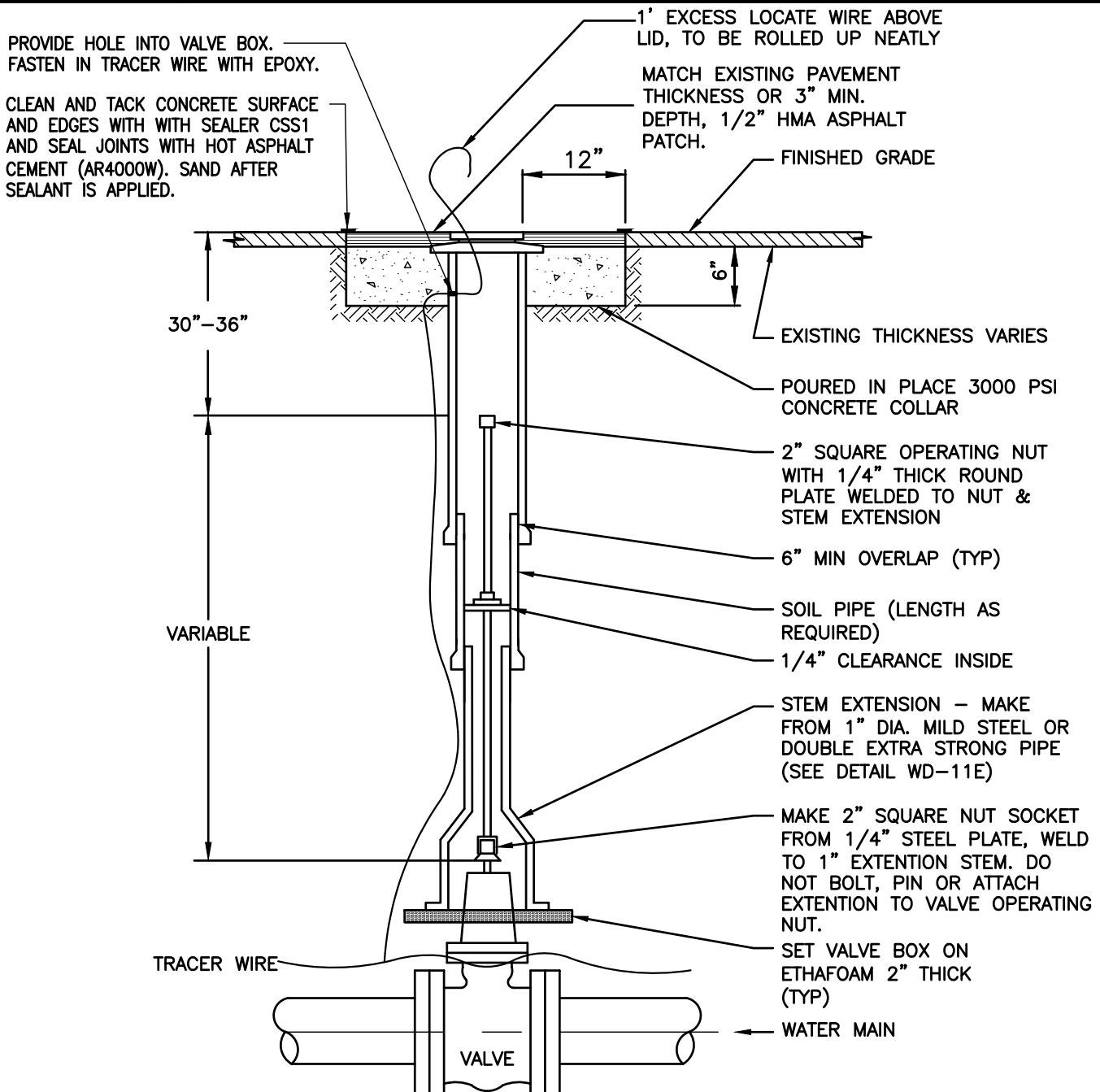
**CROSS VALLEY WATER DISTRICT
STANDARD WATER DETAILS**

VALVE BOX COVER

WD-11A

NOT TO SCALE

FEB 2022



CSS1= CATIONIC SLOW SETTING TYPE 1
AR4000W= ASPHALT RUBBER TYPE 4000W
HMA= HOT MIX ASPHALT

NOTES:

1. VALVE BOX SHALL BE ALIGNED AND CLEANED TO ENSURE PROPER VALVE OPERATION.
2. DEFECTIVE OR NON STANDARD VALVE BOX COMPONENTS SHALL BE REPLACED WITH NEW CURRENT DISTRICT STANDARD.
3. PAVEMENT RESTORATION IN ACCORDANCE WITH JURISDICTIONAL AUTHORITY AND DIVISION 7.
4. IF OPERATING NUT IS MORE THAN 3 FEET BELOW GRADE AFTER ADJUSTMENT SEE DETAIL WD-11D.

**CROSS VALLEY WATER DISTRICT
STANDARD WATER DETAILS**

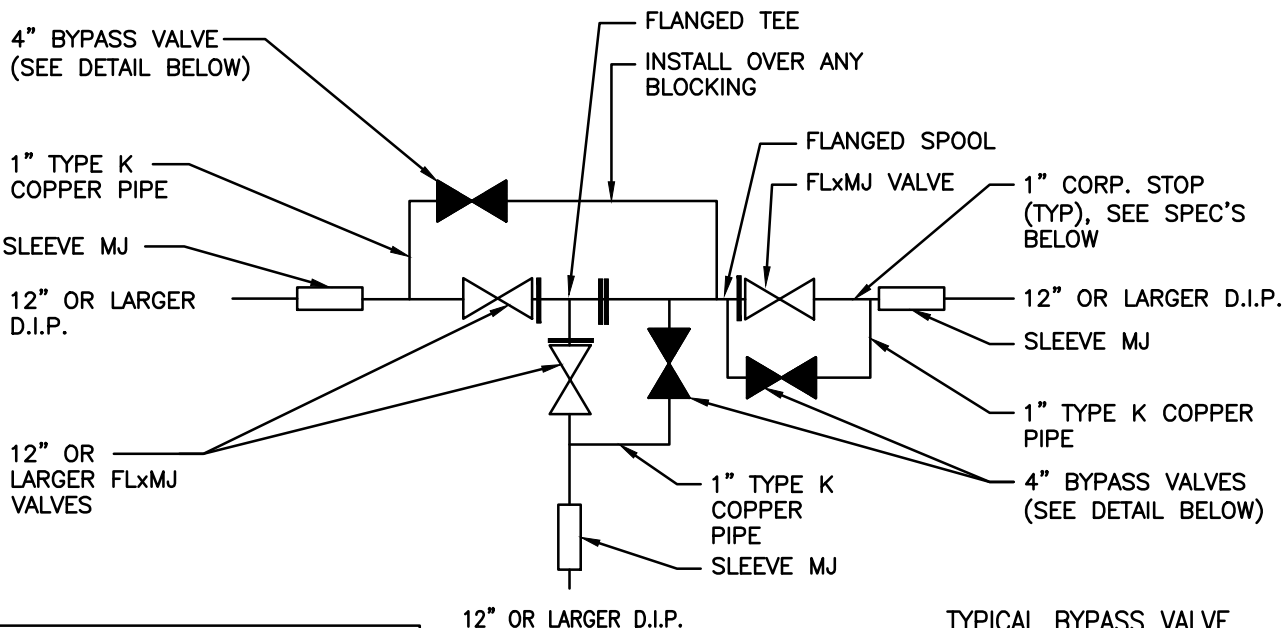
VALVE BOX ADJUSTMENT

WD-11B

NOT TO SCALE

JULY 2023

FILE NAME: L:\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\WD-11B.DWG



NOTE: BYPASS VALVE SHALL BE USED WHEN STATIC WATER PRESSURE EXCEEDS 150 P.S.I. ON WATER MAINS 12" AND LARGER, AS DIRECTED BY THE DISTRICT.

TYPICAL BYPASS VALVE PLACEMENT

HEAVY DUTY CAST-IRON VALVE BOX (SEE WD-11)

SET VALVE BOX ON ETHAFOAM 2" THICK (TYP)

PREBENT 3/4" RE-BAR TAR COATED PLACE NEAR END OF NIPPLE

1" STRAIGHT COPPER TO OUTSIDE I.P. THREAD MUELLER H-15428 OR EQUAL.

1" TYPE K COPPER PIPE

3'x1-1/2"x1" POURED CONCRETE

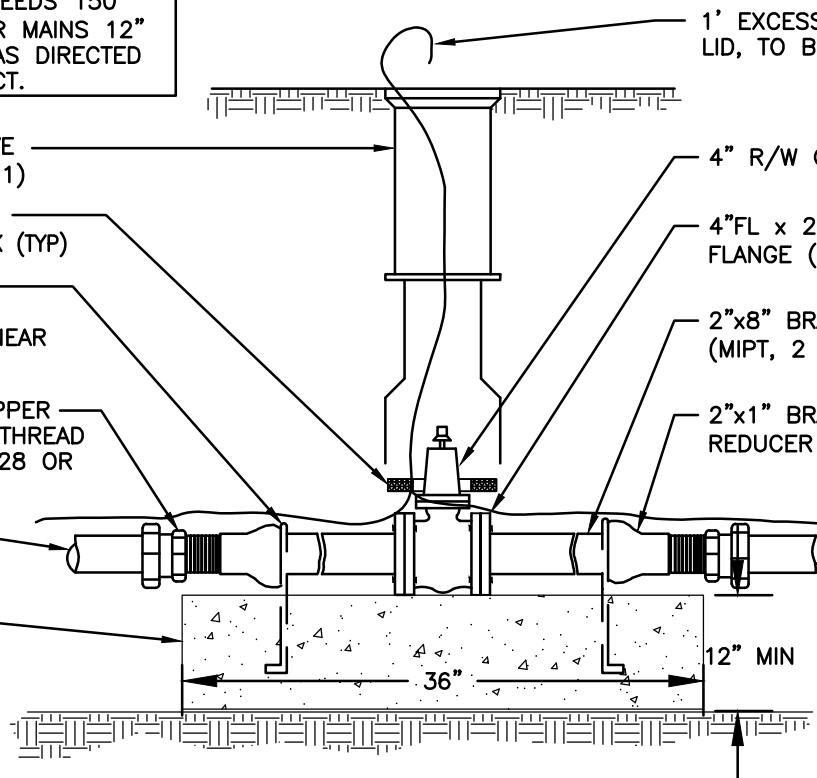
1' EXCESS LOCATE WIRE ABOVE LID, TO BE ROLLED UP NEATLY

4" R/W GATE VALVE (FLxFL)

4"FL x 2" FIPT COMPANION FLANGE (2 EACH)

2"x8" BRASS NIPPLE (MIPT, 2 REQ'D.)

2"x1" BRASS BELL REDUCER (2 REQ'D.)



1" CORPORATION STOP*

FORD	MUELLER
FB-1000-4-Q	B-25008

*CORP STOP INSTALLED WHEN:
-VALVE IS 12" OR LARGER
-PRESSURE IS > 150 PSI
-DIRECTED BY THE DISTRICT

CROSS VALLEY WATER DISTRICT STANDARD WATER DETAILS

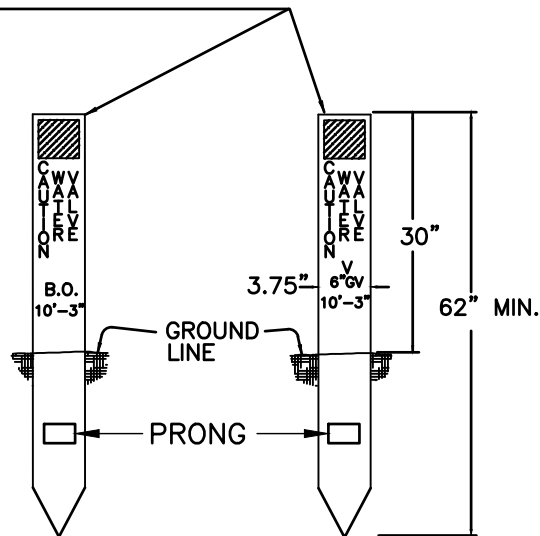
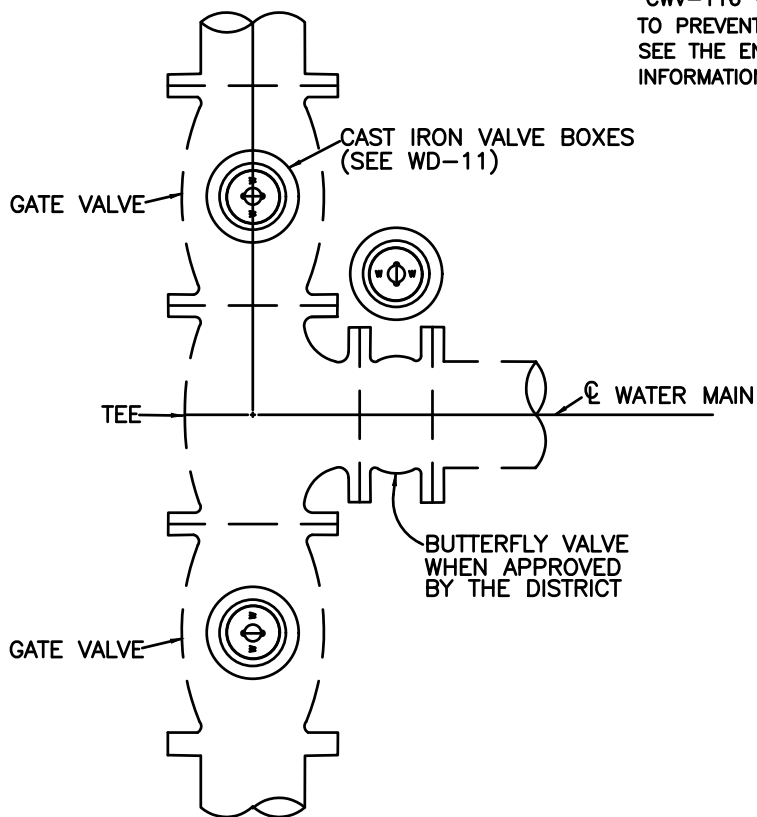
4" BYPASS VALVE

WD-11C

NOT TO SCALE

JULY 2023

"CARSONITE CUM-375" OR EQUAL BLUE MARKER WITH 1-1/2" HIGH STENCILED LETTERING, 3" X 3" HI-INTENSITY WHITE REFLECTIVE SHEET, "CWV-116 - CAUTION WATER VALVE" DECAL, AND PRONG AT BASE TO PREVENT PULL-OUT. INSTALL WITH CRM POST DRIVER. SEE THE ENGINEERING SPECIFICATIONS FOR ADDITIONAL INFORMATION.

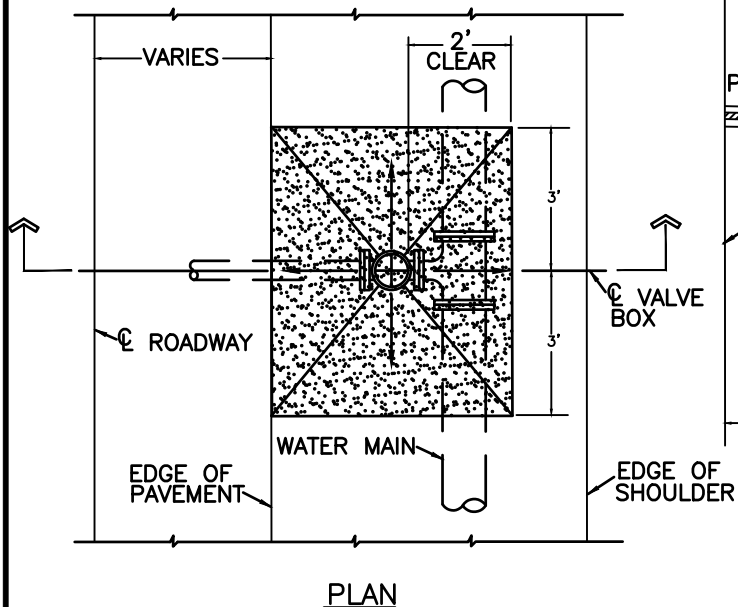


FRONT VIEW
(FOR BLOW-OFF ASSEMBLY)

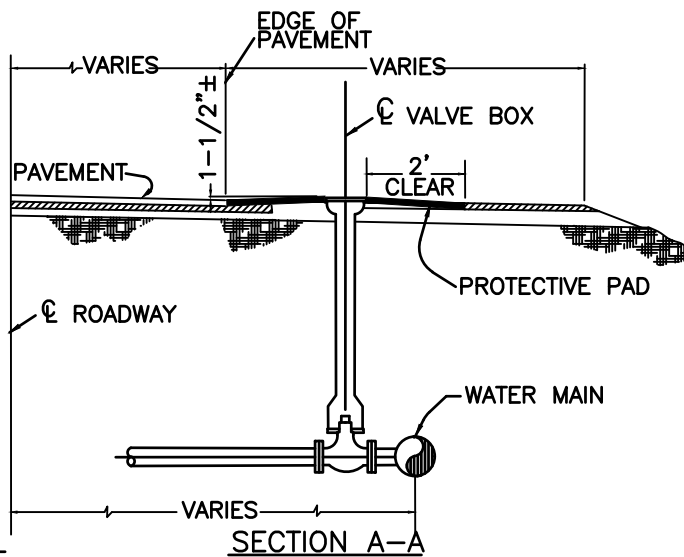
FRONT VIEW
(FOR GATE VALVE)

VALVE AND BLOW-OFF MARKER

VALVE BOX COVER PLACEMENT



PLAN



SECTION A-A

NOTES:

1. PROTECTIVE PAD SHALL BE 2" CLASS B ASPHALT CEMENT CONCRETE.
2. TOP EDGE OF PROTECTIVE PAD SHALL MATCH ADJACENT GRADE.

VALVE BOX PROTECTIVE PAD

CROSS VALLEY WATER DISTRICT
STANDARD WATER DETAILS

VALVE BOX COVER, PROTECTIVE
PAD & MARKER POST

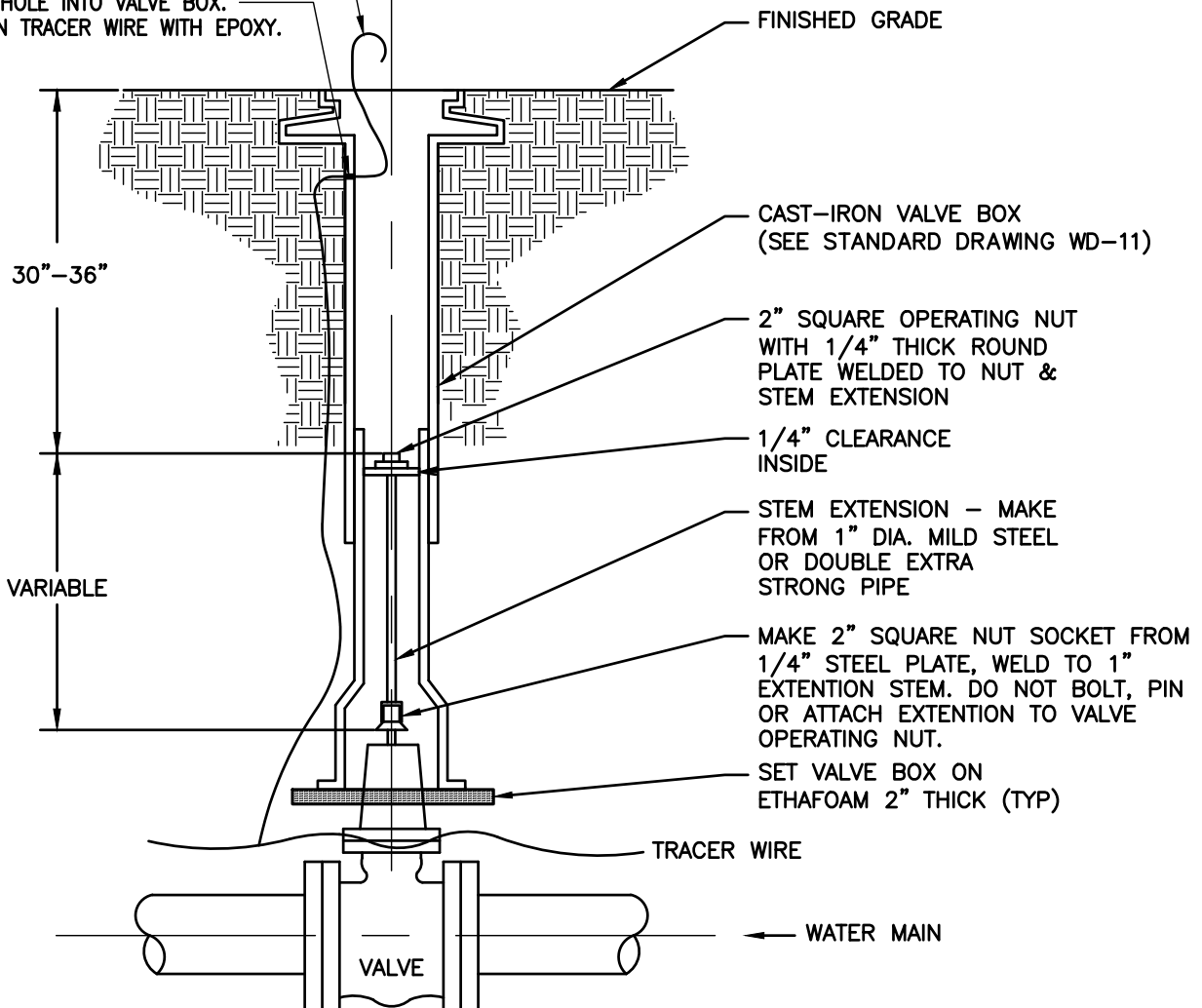
WD-11D

NOT TO SCALE

JULY 2023

1' EXCESS LOCATE WIRE ABOVE LID,
TO BE ROLLED UP NEATLY

PROVIDE HOLE INTO VALVE BOX.
FASTEN IN TRACER WIRE WITH EPOXY.



NOTE:

1. MINIMUM LENGTH OF EXTENSION IS 1 FOOT.

**CROSS VALLEY WATER DISTRICT
STANDARD WATER DETAILS**

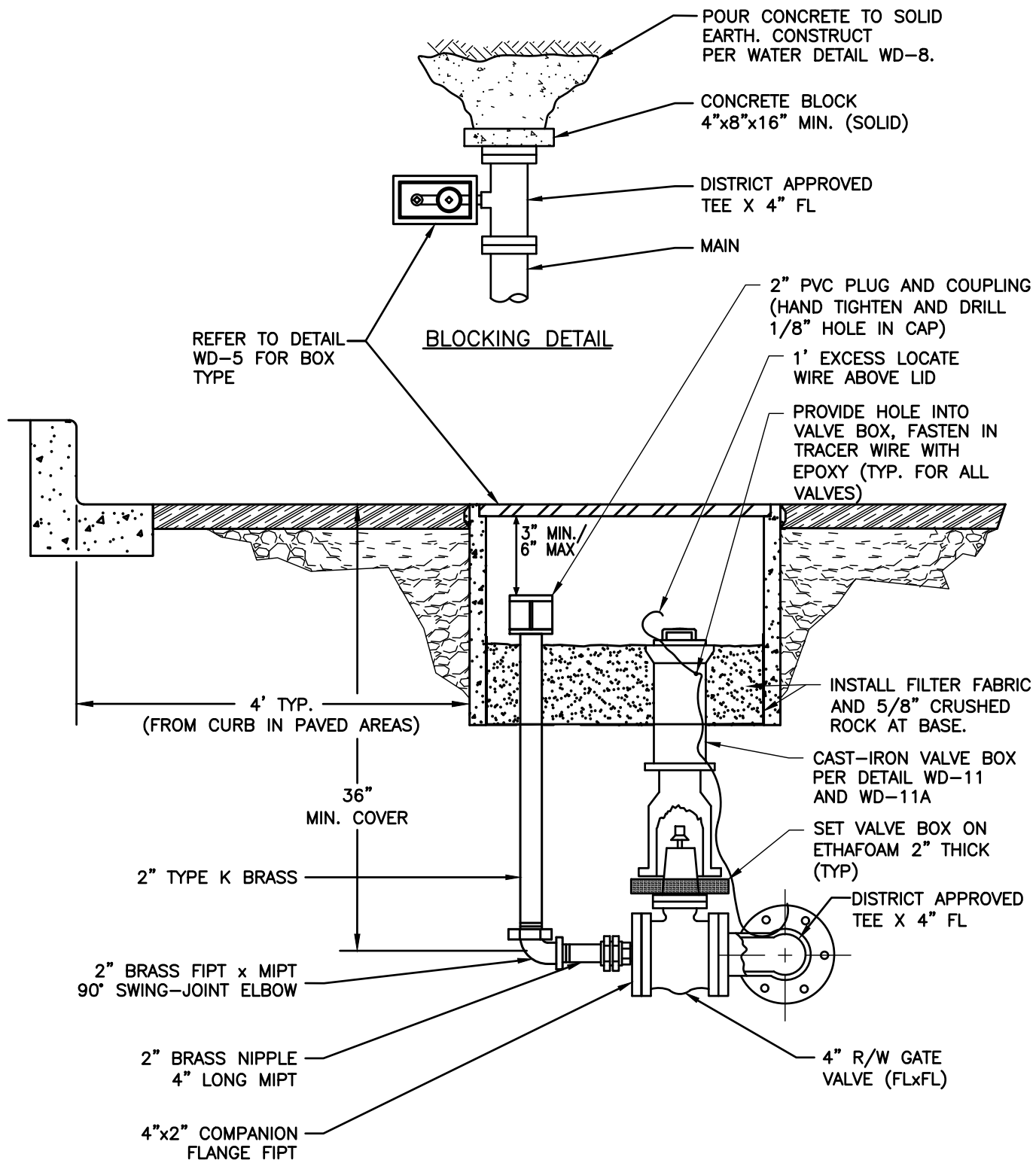
VALVE STEM EXTENSION

WD-11E

NOT TO SCALE

JULY 2023

FILE NAME: L:\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\WD-12.DWG



NOTES:

1. LOCATE METER BOX AS DIRECTED IN LOCATION APPROVED BY THE DISTRICT.
2. USE SAME STANDARD FOR LOCATIONS IN NON-PAVED AREAS

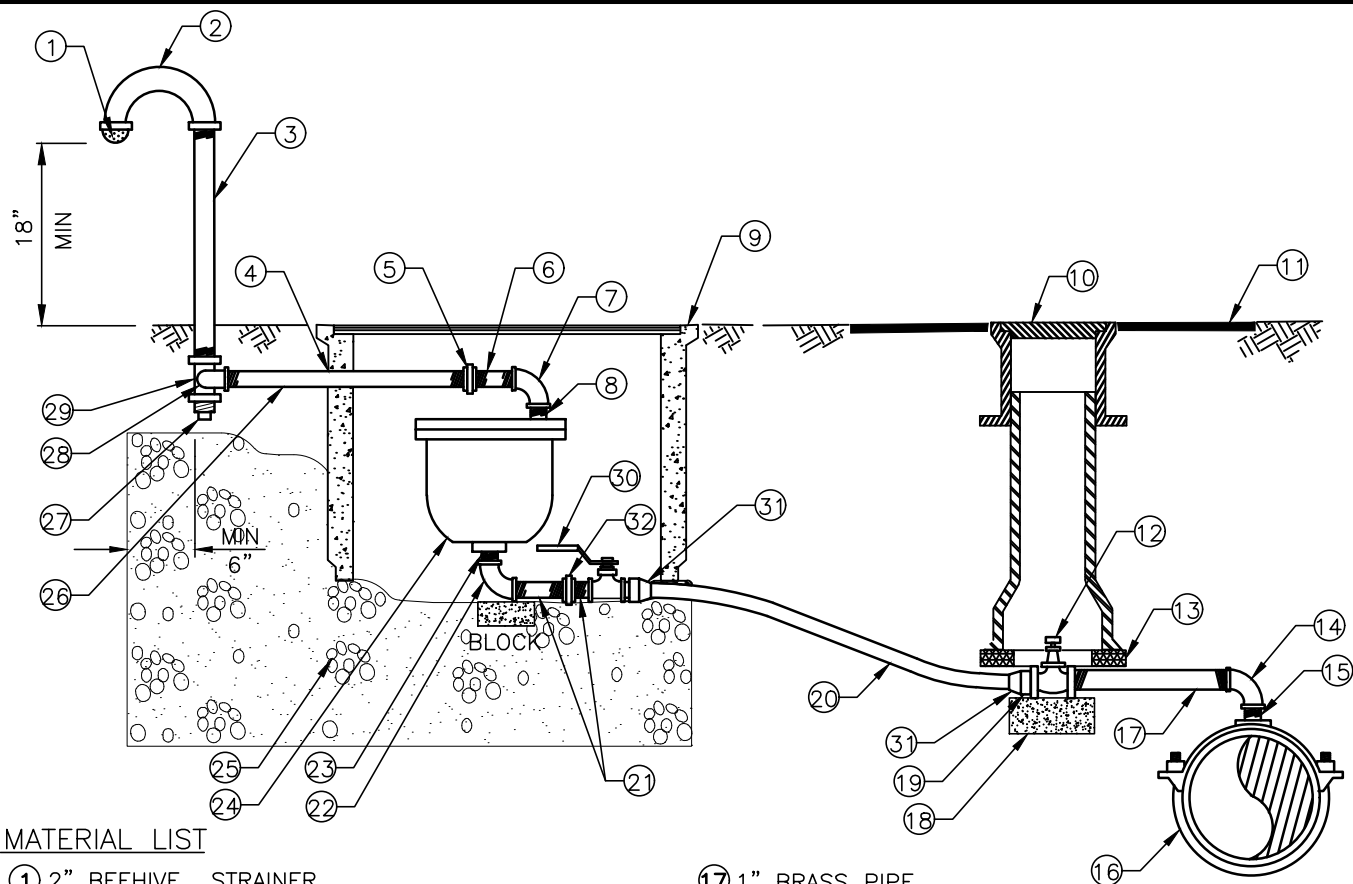
**CROSS VALLEY WATER DISTRICT
STANDARD WATER DETAILS**

2" BLOWOFF ASSEMBLY

WD-12

NOT TO SCALE

JULY 2023



MATERIAL LIST

- | | |
|--|--|
| ① 2" BEEHIVE STRAINER | ①⑦ 1" BRASS PIPE |
| ② 2" OPEN PATTERN, RETURN BEND | ①⑧ 16"x8"x4" BRICK ON COMPACTED BEDDING GRAVEL |
| ③ 2" GALVANIZED IRON PIPE FIELD LOCATE | ①⑨ BRASS BUSHING - 2" MIPT X 1" FIPT |
| ④ CUT OPENING AS REQUIRED, AFTER INSTALLATION, GROUT AROUND PIPE | ②⑩ 1" TYPE "K" SOFT COPPER TUBING |
| ⑤ 1" BRASS UNION | ②① 1" BRASS PIPE TO FIT |
| ⑥ 1" BRASS NIPPLE | ②② 1"-90° BRASS ELBOW |
| ⑦ 1"-90° BRASS ELBOW | ②③ 1" BRASS CLOSE NIPPLE |
| ⑧ 1" BRASS CLOSE NIPPLE | ②④ 1" AIR & VACUUM VALVE, SCREWED APCO NO. 143C OR EQUAL |
| ⑨ METER BOX: CARSON HW 1527BCF HDPE W/18" BODY OR SIGMA/RAVEN RMB-152718-SW-B | ②⑤ WASHED GRAVEL, PASSING 1 1/2" AND RETAINED ON 1/4" MESH |
| ⑩ TWO PIECE CAST IRON VALVE BOX 18" TOP, BOTTOM LENGTH AS REQUIRED, SEE DETAILS WD-11 AND WD-11A | ②⑥ 1" BRASS PIPE TO FIT |
| ⑪ 2" CLASS B ASPHALT PAD | ②⑦ 2" BRASS PLUG |
| ⑫ 2" MUELLER A-2362 RWGV, 2" THREAD ENDS WITH 2" OPERATING NUT | ②⑧ 1"-90° BRASS ELBOW |
| ⑬ ETHAFOAM PAD UNDER VALVE BOX | ②⑨ 2"x2"x1" TEE, 1" CLOSE NIPPLE BETWEEN TEE & BEND |
| ⑭ 1"-90° BRASS BEND, F.I.P. | ③⑩ 1" BRASS 1/4 TURN BALL VALVE, SCREWED EQUAL TO RED-WHITE VALVE CORP. FIG. NO. 5044F |
| ⑮ 1" BRASS NIPPLE, M.I.P. | ③① COUPLING, COPPER TO MALE IRON PIPE - FORD C84-44-Q-NL OR EQUAL |
| ⑯ DOUBLE STAINLESS STEEL STRAP SERVICE CLAMP WITH 1" IPS TAP TO FIT EQUAL TO ROMAC 101S | ③② BRASS UNION |

NOTES:

- AIR AND VACUUM RELEASE VALVE ASSEMBLY SHALL BE INSTALLED AT THE HIGHEST POINT OF LINE. IF HIGH POINT FALLS IN A LOCATION WHERE ASSEMBLY CANNOT BE INSTALLED, PROVIDE ADDITIONAL DEPTH OF LINE TO CREATE HIGH POINT AT A LOCATION WHERE ASSEMBLY CAN BE INSTALLED.
- THE 2" STANDPIPE ABOVE GROUND SHALL BE COATED WITH TWO COATS OF RUST-OLEUM #7543 "SAFETY YELLOW" INDUSTRIAL ENAMEL.
- THE 1" BRASS AND COPPER TUBING SHALL BE INSTALLED IN POLYETHYLENE WRAP FOR A MINIMUM OF 3 FEET FROM WATER MAIN.
- ALL MATERIALS TO BE LEAD FREE.

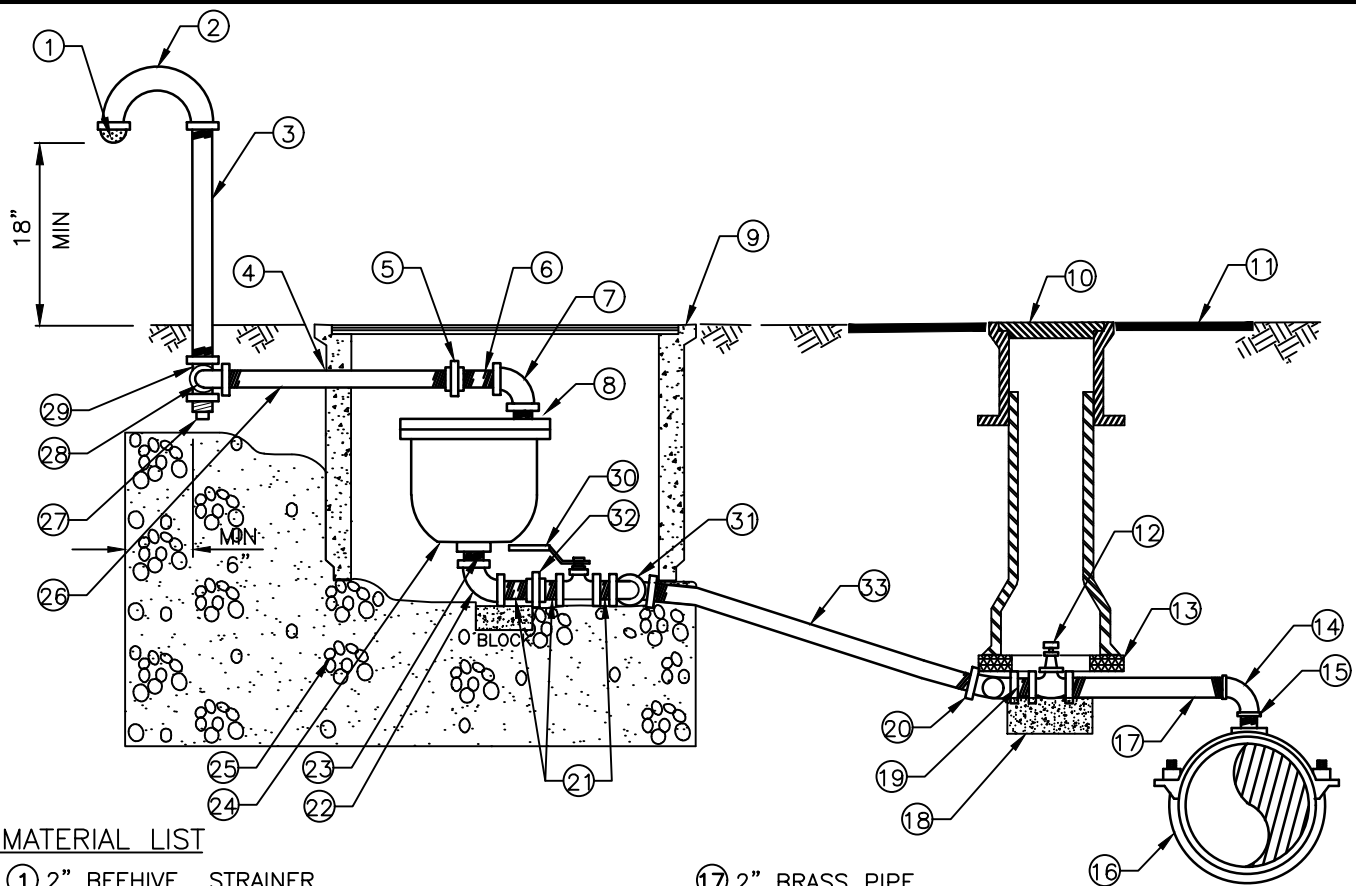
**CROSS VALLEY WATER DISTRICT
STANDARD WATER DETAILS**

**1" AIR & VACUUM RELEASE
VALVE ASSEMBLY**

WD-13

NOT TO SCALE

JULY 2023



MATERIAL LIST

- | | |
|--|--|
| ① 2" BEEHIVE STRAINER | ①⑦ 2" BRASS PIPE |
| ② 2" OPEN PATTERN, RETURN BEND | ①⑧ 16"x8"x4" BRICK ON COMPACTED BEDDING GRAVEL |
| ③ 2" GALVANIZED IRON PIPE FIELD LOCATE | ①⑨ 2" BRASS NIPPLE |
| ④ CUT OPENING AS REQUIRED, AFTER INSTALLATION, GROUT AROUND PIPE | ②① 2" BRASS SWING-JOINT ELBOW AS REQUIRED |
| ⑤ 2" BRASS UNION | ②② 2" BRASS PIPE TO FIT |
| ⑥ BRASS SHORT NIPPLE | ②③ 2"-90° BRASS ELBOW |
| ⑦ 2"-90° BRASS ELBOW | ②④ 2" BRASS CLOSE NIPPLE |
| ⑧ 2" BRASS CLOSE NIPPLE | ②⑤ 2" AIR & VACUUM VALVE, SCREWED APCO NO. 1452C OR EQUAL |
| ⑨ METER BOX: OLDCASTLE/CARSON HDPE 1730MSBC W/18" BODY PEDESTAL ONLY | ②⑥ WASHED GRAVEL, PASSING 1 1/2" AND RETAINED ON 1/4" MESH |
| ⑩ TWO PIECE CAST IRON VALVE BOX 18" TOP, BOTTOM LENGTH AS REQUIRED, SEE DETAILS WD-11 AND WD-11A | ②⑦ 2" BRASS PIPE TO FIT |
| ⑪ 2" CLASS B ASPHALT PAD | ②⑧ 2" BRASS PLUG |
| ⑫ 2" MUELLER A-2362 RWGV, THD x THD, WITH 2" OPERATING NUT | ②⑨ 2"-90° BRASS ELBOW |
| ⑬ ETHAFOAM PAD UNDER VALVE BOX | ③① 2"x2"x2" TEE WITH CLOSE NIPPLE BETWEEN TEE & BEND |
| ⑭ 2"-90° BRASS BEND | ③② 2" BRASS 1/4 TURN BALL VALVE, SCREWED EQUAL TO RED-WHITE VALVE CORP. FIG. NO. 5044F |
| ⑮ 2" BRASS NIPPLE, M.I.P. | ③③ 2-2" 90° BRASS BENDS WITH CLOSE NIPPLE BETWEEN BENDS |
| ⑯ DOUBLE STRAP SERVICE STAINLESS STEEL CLAMP WITH 2" IPS TAP TO FIT. EQUAL TO ROMAC 202S | ③④ BRASS UNION |
| | ③⑤ 2" BRASS PIPE FOR PIPE LENGTHS UP TO 10 FEET. FOR PIPE LENGTHS GREATER THAN 10 FEET, REFER TO ITEM #7 DESCRIPTION ON DETAIL WD-2. |

NOTES:

- AIR AND VACUUM RELEASE VALVE ASSEMBLY SHALL BE INSTALLED AT THE HIGHEST POINT OF LINE. IF HIGH POINT FALLS IN A LOCATION WHERE ASSEMBLY CANNOT BE INSTALLED, PROVIDE ADDITIONAL DEPTH OF LINE TO CREATE HIGH POINT AT A LOCATION WHERE ASSEMBLY CAN BE INSTALLED.
- THE 2" STANDPIPE ABOVE GROUND SHALL BE COATED WITH TWO COATS OF RUST-OLEUM #7543 "SAFETY YELLOW" INDUSTRIAL ENAMEL.
- THE 2" BRASS PIPING SHALL BE INSTALLED IN POLYETHYLENE WRAP FOR A MINIMUM OF 3 FEET FROM WATER MAIN.
- ALL MATERIALS TO BE LEAD FREE.

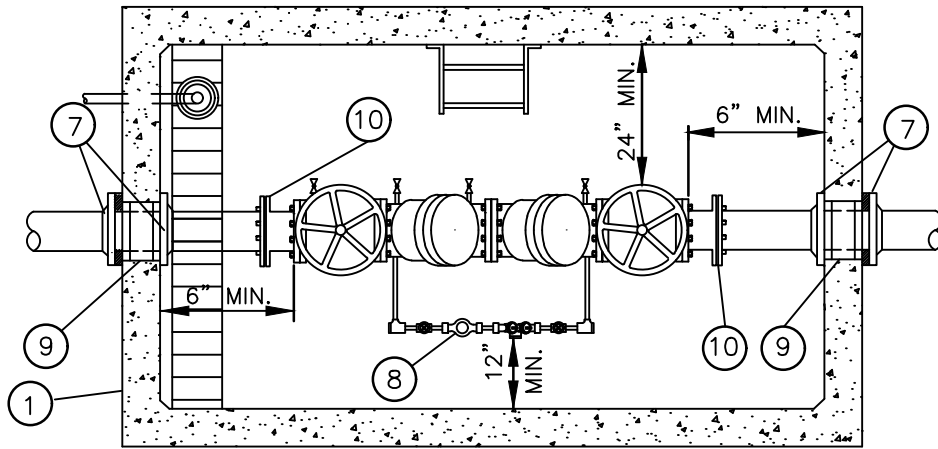
**CROSS VALLEY WATER DISTRICT
STANDARD WATER DETAILS**

**2" AIR & VACUUM RELEASE
VALVE ASSEMBLY**

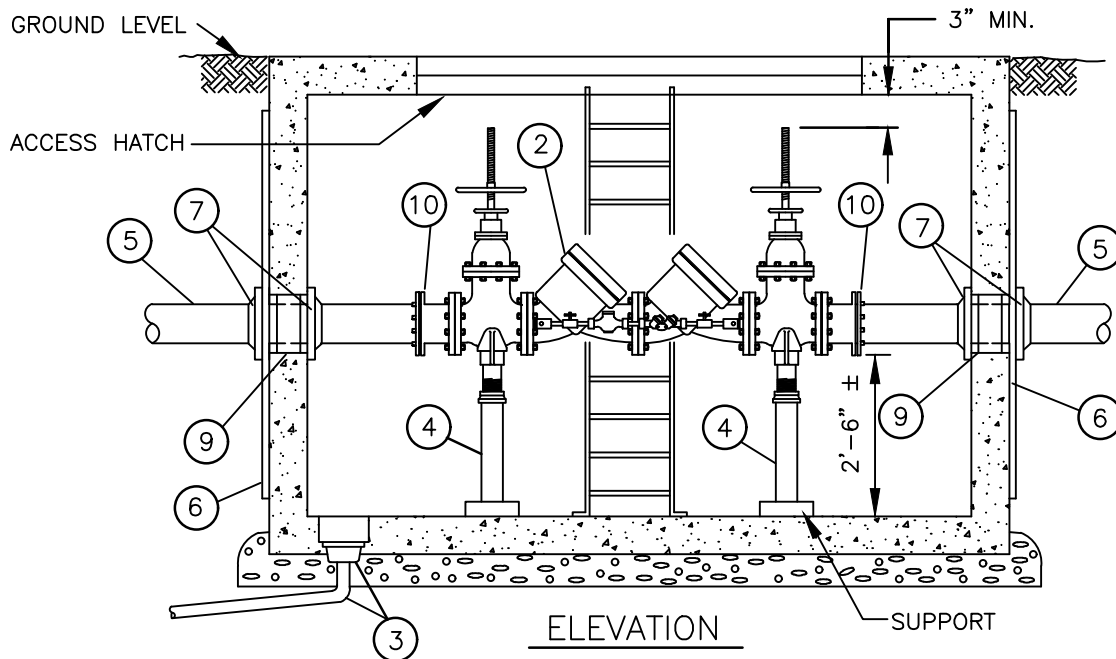
WD-14

NOT TO SCALE

JULY 2023



PLAN



ELEVATION

DEVICE SIZE	INSIDE VAULT DIMENSIONS(1)	UTIL. VAULT CO. VAULT NO.(2)	BILCO HATCH
3"	6'-6"L x 4'-2"W x 6'-0"H	577-LA	3'-6" X 3'-6" SINGLE LEAF
4"	6'-6"L x 4'-2"W x 6'-0"H	577-LA	3'-6" X 3'-6" SINGLE LEAF
6"	8'-0"L x 6'-0"W x 7'-0"H	687-LA	4'-0" X 6'-0" DOUBLE LEAF
8"	8'-0"L x 6'-0"W x 7'-0"H	687-LA	4'-0" X 6'-0" DOUBLE LEAF

1. MINIMUM INSIDE HEIGHT. ACTUAL HEIGHT MAY VARY AS SITE CONDITIONS DICTATE. PROVIDE ADJUSTING RINGS AS REQUIRED.
2. PROVIDE VAULT WITHOUT CHANNELS AND WITH KNOCK-OUTS (CORE ONLY) FOR WATER PIPING ONLY
3. HATCH SHALL BE CAST-IN-PLACE AND OFFSET IN LID AS REQUIRED TO PROVIDE ACCESS TO LADDER. HATCH SHALL BE H2O TRAFFIC LOADING RATED, SHALL DRAIN TO VAULT SUMP AND SHALL BE BILCO CO. OR APPROVED EQUAL.

*SEE PAGE 15A FOR MATERIAL LIST AND NOTES.

CROSS VALLEY WATER DISTRICT STANDARD WATER DETAILS

3'-8" DOUBLE CHECK DETECTOR ASSEMBLY

WD-15

NOT TO SCALE

JULY 2023

MATERIAL LIST:

1. PRECAST CONCRETE UNDERGROUND VAULT – "UTILITY VAULT COMPANY VAULT":
SEE TABLE ON PAGE 14 FOR SIZE REQUIREMENTS.

LADDER: HOT DIPPED GALVANIZED BOLT-ON LADDER, #6 REBAR RUNGS ON 12" CENTERS,
AND MOUNTING BRACKETS TOP AND BOTTOM. PROVIDE BILCO "LADDER-UP" SAFETY POST.

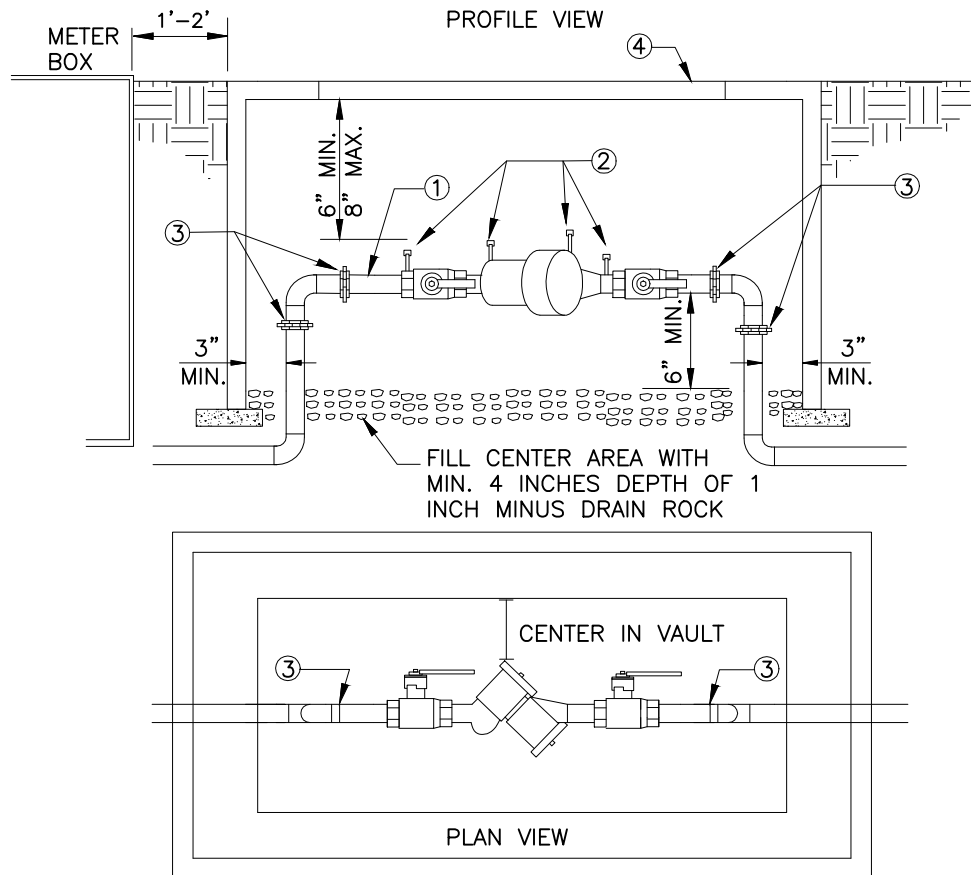
PAINTING: THE INTERIOR OF THE CONCRETE VAULT SHALL BE PAINTED AT THE VAULT
MANUFACTURERS WITH ONE COAT OF STEEL COAT DAMP-TEX NO. 22 PRIMER AND TWO
COATS STEEL COAT DAMP-TEX DX 110-WHITE. THE EXTERIOR BELOW GRADE SHALL BE
PAINTED WITH TWO COATS OF KOOPERS BITUMASTIC BLACK SOLUTION OR EQUAL.
2. STATE APPROVED DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY.
EPOXY COATED CAST IRON MAINLINE CASE.
STAINLESS STEEL SPRINGS.
BRONZE AND STAINLESS STEEL WORKING PARTS.
CENTER ASSEMBLY IN VAULT LONGITUDINALLY.
3. SUMP PUMP OR GRAVITY DRAIN AS REQUIRED BY SITE CONDITIONS, TO BE DETERMINED
BY THE DEVELOPER AND CONTRACTOR AND REVIEWED AND APPROVED BY THE DISTRICT.

FOR SUMP PUMP: 16" DIAM. x 6" DEEP SUMP WITH HYDROMATIC OSP50 SUMP PUMP.
PROVIDE ELECTRICAL POWER PER ALL APPLICABLE CODES. CONSTRUCT
1-1/4" DISCHARGE PIPING ENCASED IN G.I.P. TO NEAREST CATCH BASIN
OR APPROVED LOCATION.

FOR GRAVITY DRAIN: SUMP DRAIN, ZURN Z-551, THREADED, WITH ZURN Z-1099 BACKWATER
VALVE, THREADED X NO- HUB. 4" C.I. PIPE TO 12" MIN. BEYOND
VAULT EXTERIOR WALL. 4" PVC D3034 SDR35, TO DAYLIGHT OR
CATCH BASIN AS REQUIRED.
4. ADJUSTABLE STEEL PIPE PIPING SUPPORTS. "STANDON", FROM MATERIAL RESOURCE,
HILLSBORO, OREGON, OR EQUAL.
5. DUCTILE IRON PIPE, CLASS 53 CEMENT LINED, FL.x P.E., 4'± LONG.
6. 2"x2"x1/4" MIN. WALL THICKNESS SQUARE STEEL TUBE, 6' MIN. LENGTH, SECURED TO
VAULT WALL IN FOUR PLACES WITH STAINLESS STEEL ANCHOR BOLTS.
7. UNI-FLANGE ADAPTER.
8. DISTRICT WILL PROVIDE BADGER MODEL 25 , HR-E, 1 CF , 5/8" METER WITH BEACON
CELLULAR TRANSMITTER, AND WILL BILL OWNER. CONTRACTOR TO INSTALL METER.
9. LINK SEAL ASSEMBLY
10. ROMAC RESTRAINED FLANGE COUPLING ADAPTER (RFCA)

NOTES:

1. PROVIDE SHOP DRAWINGS AND SUBMITTALS FOR ALL MATERIALS AND EQUIPMENT TO
CROSS VALLEY WATER DISTRICT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
2. SEE PAGE 15 FOR ELEVATION AND PLAN VIEWS.



* DCVA-BOX SHALL BE LOCATED IMMEDIATELY DOWNSTREAM OF WATER METER BOX PRIOR TO AND BRANCH CONNECTIONS. WITH NO MORE THAN 1'-2' BETWEEN BOXES.

NOTES:

1. PIPING FROM METER TO DCVA SHALL BE COPPER, BRASS, OR POLY TUBING.
2. THE INSTALLER OR DEVELOPER MUST PROVIDE TEST COCK PROTECTION WITH PLUGS, CAPS OR COVERS. TEST COCKS MUST BE POINTED UP.
3. UNIONS MUST BE INSTALLED VERTICALLY OR HORIZONTALLY. DIELECTRIC UNIONS MUST BE USED TO SEPARATE DISSIMILAR MATERIALS.
4. PERMANENT ASSEMBLY SHALL BE INSTALLED BELOW GROUND WITH LID ADJUSTED TO FINISHED GRADE AND IN AN APPROVED BOX LARGE ENOUGH TO ACCOMMODATE BACKFLOW INSTALLATION AS ILLUSTRATED AND LARGE ENOUGH TO ACCESS, TEST AND MAINTAIN ASSEMBLY.
5. BACKFLOW ASSEMBLIES MUST BE SELECTED FROM WASHINGTON STATE DEPARTMENT OF HEALTH LIST OF BACKFLOW ASSEMBLIES APPROVED FOR INSTALLATION IN WASHINGTON STATE.
6. AFTER INSTALLATION OF THE BACKFLOW ASSEMBLY, THE DEVELOPER OR INSTALLER WILL CALL THE DISTRICT FOR AN INSPECTION BY A DISTRICT CROSS-CONNECTION CONTROL SPECIALIST.
7. FOLLOWING AN INSPECTION APPROVAL BY THE DISTRICT, THE BACKFLOW ASSEMBLY MUST BE SCHEDULED FOR AN INITIAL TEST BY A WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER. THE INITIAL TEST OF THE BACKFLOW ASSEMBLY MAY BE OBSERVED BY A DISTRICT CROSS-CONNECTION CONTROL SPECIALIST. TEST RESULTS ARE TO BE SUBMITTED TO BSI ONLINE BACKFLOW SOLUTIONS, INC. THE METER MUST BE INSTALLED PRIOR TO THE INITIAL TEST.
8. DCVA MUST BE PURCHASED AND INSTALLED AS A UNIT. NO MODIFICATIONS TO ANY PART OF THE ASSEMBLY ARE ALLOWED.
9. FREEZE PROTECTION IS THE RESPONSIBILITY OF THE OWNER AND SHALL NOT INTERFERE WITH OPERATION OR TESTING OF THE ASSEMBLY.
10. BOX MUST BE LARGE ENOUGH FOR ASSEMBLY, UNIONS AND ALL REQUIRED CLEARANCES.

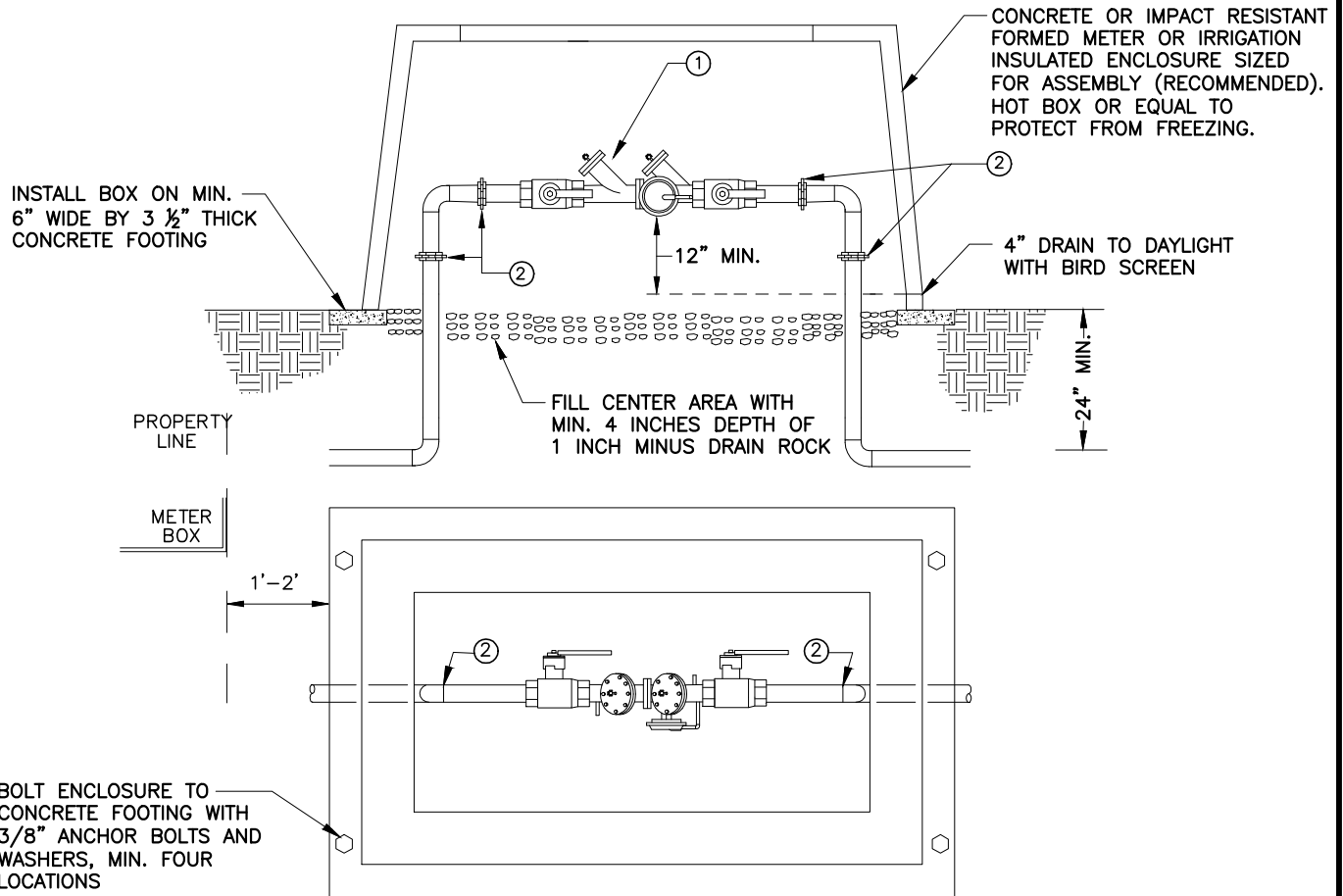
**CROSS VALLEY WATER DISTRICT
STANDARD WATER DETAILS**

**DOUBLE CHECK VALVE ASSEMBLY
(3/4" - 2" ASSEMBLIES)**

WD-16

NOT TO SCALE

JULY 2023



RPBA ABOVE GROUND INSTALLATION

* RPBA-ENCLOSURE SHALL BE LOCATED IMMEDIATELY DOWNSREAM OF WATER METER BOX PRIOR TO ANY BRANCH CONNECTIONS, WITH NO MORE THAN 1'-2' BETWEEN BOXES. HOT BOX OR EQUAL FOR FREEZE PROTECTION.

NOTES:

- ① BACKFLOW ASSEMBLIES MUST BE SELECTED FROM WASHINGTON STATE DEPARTMENT OF HEALTH LIST OF BACKFLOW ASSEMBLIES APPROVED FOR INSTALLATION IN WASHINGTON STATE.
- ② UNIONS MUST BE INSTALLED VERTICALLY OR HORIZONTALLY
- ③ DIELECTRIC UNIONS MUST BE USED TO SEPARATE DISSIMILAR MATERIALS.
- ④ AFTER INSTALLATION OF BACKFLOW ASSEMBLY, THE CONTRACTOR OR INSTALLER WILL CALL THE DISTRICT FOR AN INSPECTION BY A DISTRICT CROSS-CONNECTION CONTROL SPECIALIST.
- ⑤ RPBA MUST BE PURCHASED AND INSTALLED AS A UNIT. NO MODIFICATION S TO ANY PART OF THE ASSEMBLY ARE ALLOWED.
- ⑥ FREEZE PROTECTION IS THE RESPONSIBILITY OF THE OWNER AND SHALL NOT INTERFERE WITH OPERATION OR TESTING OF THE ASSEMBLY.
- ⑦ FOLLOWING AN INSPECTION APPROVAL BY THE DISTRICT, THE BACKFLOW ASSEMBLY MUST BE SCHEDULED FOR AN INITIAL TEST BY A WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS ARE TO BE SUBMITTED TO BSI ONLINE BACKFLOW SOLUTIONS, INC. THE INITIAL TEST OF THE BACKFLOW ASSEMBLY MAY BE OBSERVED BY A DISTRICT CROSS-CONNECTION CONTROL SPECIALIST. METER MUST BE INSTALLED PRIOR TO TESTING.
- ⑧ PIPING FROM METER TO RPBA SHALL BE COPPER, BRASS, OR POLY TUBING.
- ⑨ THE INSTALLER /DEVELOPER MUST PROVIDE TEST COCK PROTECTION WITH PLUGS, CAPS OR COVERS.
- ⑩ MINIMUM 12" GAP FROM BOTTOM OF RELIEF PORT TO TOP OF DAYLIGHT DRAIN.

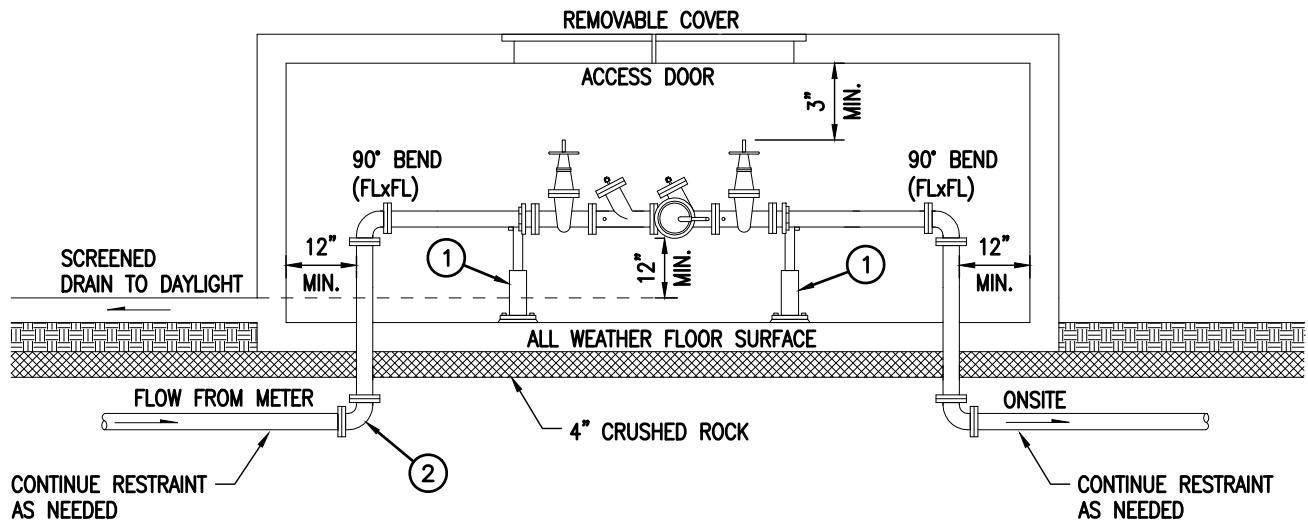
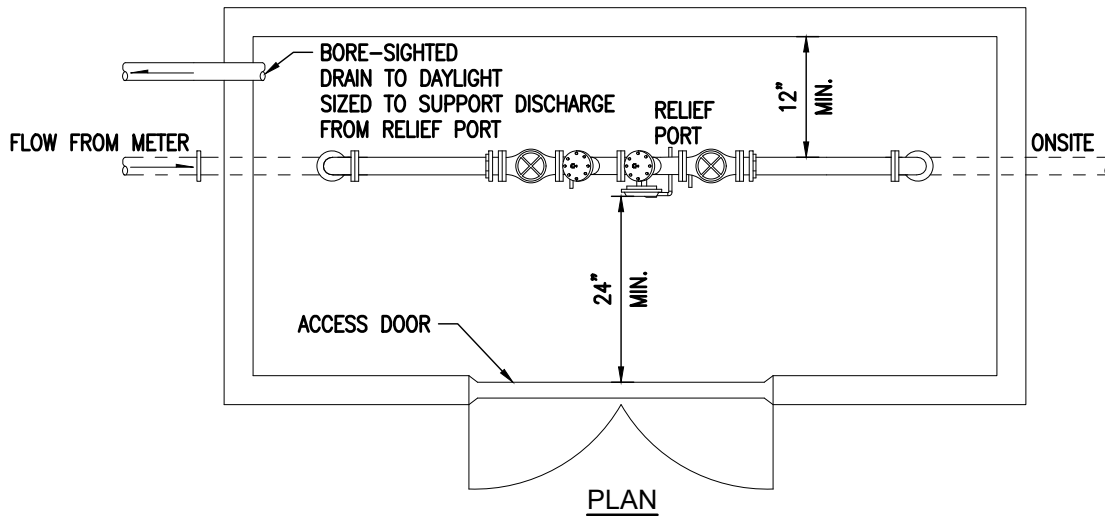
**CROSS VALLEY WATER DISTRICT
STANDARD WATER DETAILS**

**REDUCED PRESSURE BACKFLOW
ASSEMBLY (3/4" - 2" ASSEMBLIES)**

WD-17

NOT TO SCALE

JULY 2023



NOTES:

- ① ADJUSTABLE PIPE SUPPORT, STANDON MODEL S-89 OR EQUAL & SHALL BE BOLTED TO THE VALVE FLANGE.
- ② USING 90° ELBOWS ON BOTH SIDES OF RPBA, ALL FITTINGS SHALL BE FLANGED OR RESTRAINED.
- ③ AFTER INSTALLATION OF BACKFLOW ASSEMBLY, THE CONTRACTOR OR INSTALLER WILL CALL THE DISTRICT FOR AN INSPECTION BY A DISTRICT CROSS-CONNECTION CONTROL SPECIALIST.
- ④ FOLLOWING AN INSPECTION APPROVAL BY THE DISTRICT, THE BACKFLOW ASSEMBLY MUST BE SCHEDULED FOR AN INITIAL TEST BY A WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS ARE TO BE SUBMITTED TO BSI ONLINE BACKFLOW SOLUTIONS, INC. THE INITIAL TEST OF THE BACKFLOW ASSEMBLY MAY BE OBSERVED BY A CROSS-CONNECTION CONTROL SPECIALIST FROM THE DISTRICT. METER MUST BE INSTALLED PRIOR TO INITIAL TEST.
- ⑤ BACKFLOW ASSEMBLIES MUST BE SELECTED FROM WASHINGTON STATE DEPARTMENT OF HEALTH LIST OF BACKFLOW ASSEMBLIES APPROVED FOR INSTALLATION IN WASHINGTON STATE.
- ⑥ RPBA MUST BE PURCHASED AND INSTALLED AS A UNIT. NO MODIFICATIONS TO ANY PART OF THE ASSEMBLY ARE ALLOWED.
- ⑦ FREEZE PROTECTION IS THE RESPONSIBILITY OF THE OWNER AND SHALL NOT INTERFERE WITH OPERATION OR TESTING OF THE ASSEMBLY.
- ⑧ MUST MAINTAIN 12" MINIMUM AIR GAP FROM BOTTOM OF RELIEF PORT TO TOP OF DAYLIGHT DRAIN.

CROSS VALLEY WATER DISTRICT STANDARD WATER DETAILS

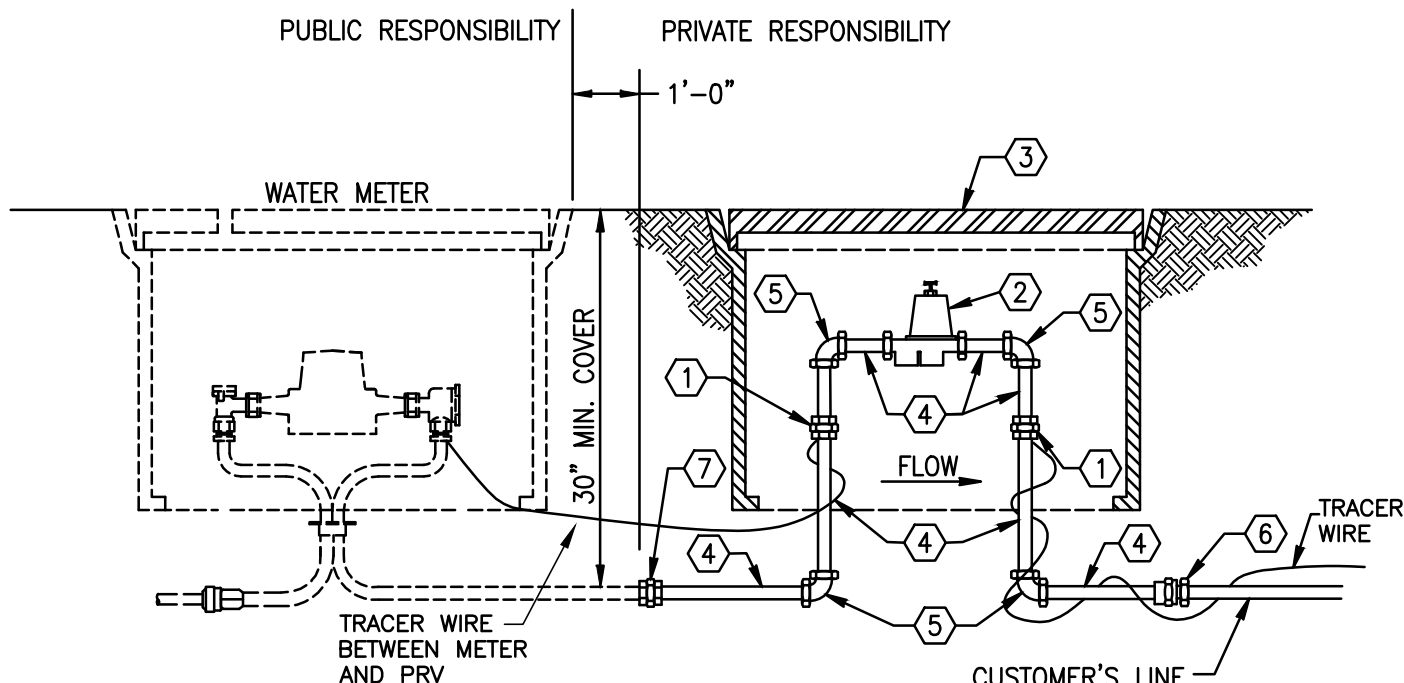
REDUCED PRESSURE BACKFLOW ASSEMBLY (3" AND LARGER)

WD-18

NOT TO SCALE

JULY 2023

FILE NAME: \\K-FS1\LIBRARY\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\WD-19.DWG



KEYED NOTES FOR PRV

- ① 3/4" - 2" BRASS UNION.
- ② PRESSURE REDUCING VALVE W/ STRAINER - 3/4" - 2" WITH UNION COUPLING ON THE INLET; EQUAL TO: ZURN NR3XL (HRSC-HIGH RANGE 15-150PSI)
- ③ MID-STATES HDPE METER BOX SIZED TO FIT w/ FULL PLASTIC LID; OR TRAFFIC RATED BOX IN PAVED AREAS
- ④ 3/4" - 2" BRASS NIPPLE LENGTH AS REQ'D.
- ⑤ 3/4" - 2" 90° BEND (FIP) BRASS.
- ⑥ CONNECTION TO CUSTOMER'S LINE SHALL BE BRASS AND SIMILAR MATERIAL TO THAT ON CUSTOMER'S SIDE. NO NYLON, PLASTIC, OR GALVANIZED FITTINGS ALLOWED.
- ⑦ 3/4" - 2" BRASS DIELECTRIC UNION.
- ⑧ CONTRACTOR TO TAKE PRE & POST CONSTRUCTION PRESSURE AT CUSTOMER'S BUILDING AND SET PRESSURE TO PRE CONSTRUCTION LEVEL. CONTRACTOR TO DOCUMENT AND PROVIDE INFORMATION TO THE DISTRICT.

INSTALLATION

THE PRESSURE REDUCING VALVE SHALL BE LOCATED "DOWNSTREAM" OF THE METER. RESPONSIBILITY FOR PROPER INSTALLATION SHALL BE THAT OF THE CONTRACTOR, AND OPERATION OF THE VALVE SHALL BE THAT OF THE PROPERTY OWNER.

NOTE:

FOR PRESSURE REDUCING VALVES LARGER THAN 2" CONTACT THE DISTRICT FOR INFORMATION REGARDING APPROVED PACKAGED SYSTEMS.

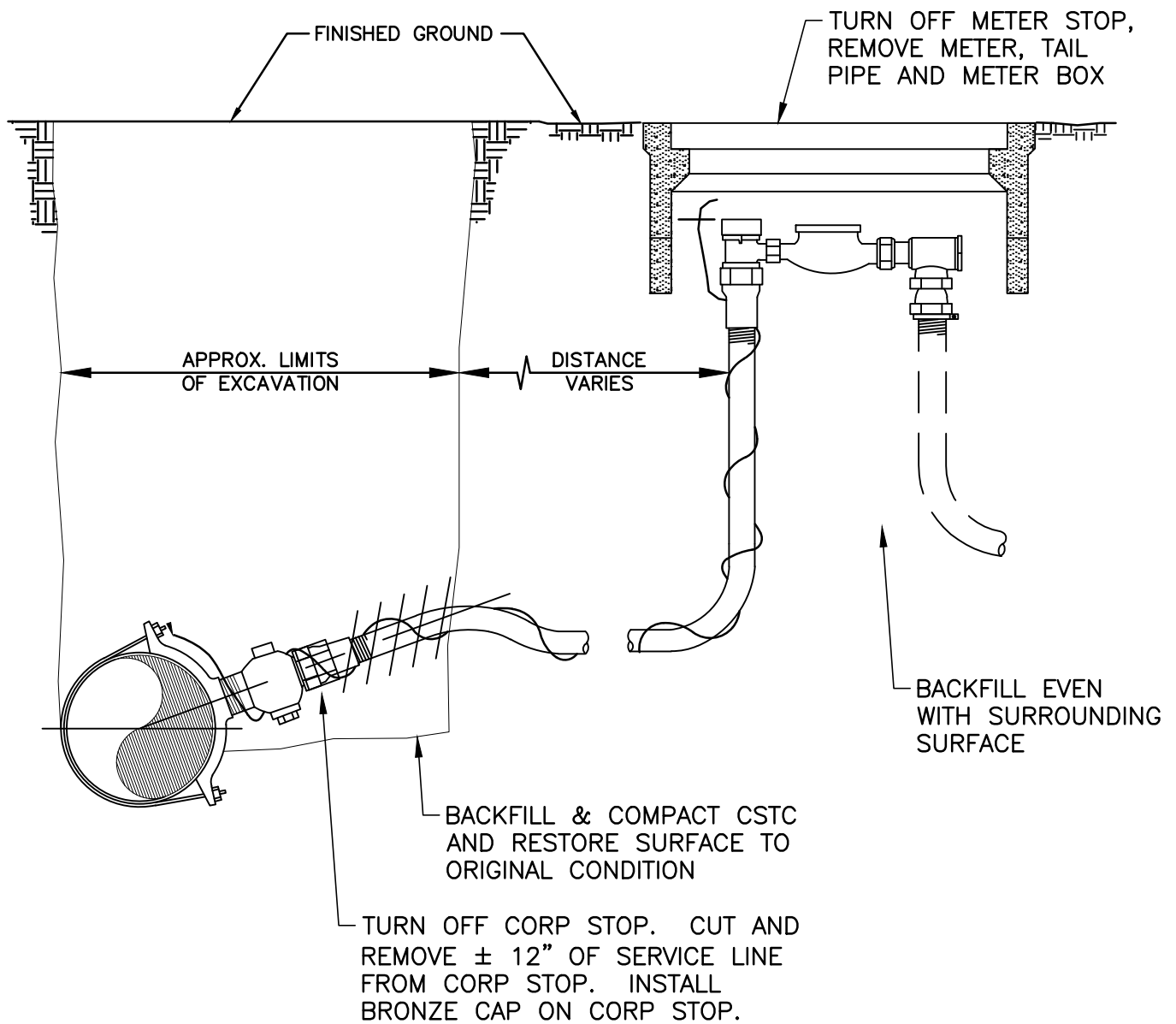
**CROSS VALLEY WATER DISTRICT
STANDARD WATER DETAILS**

**PRESSURE REDUCING VALVE
3/4"-2"**

WD-19

NOT TO SCALE

FEB 2022



CROSS VALLEY WATER DISTRICT STANDARD WATER DETAILS

WATER SERVICE DISCONNECT

WD-20

NOT TO SCALE

OCT 2023

TRENCH BACKFILL AND RESTORATION DETAILS

Cross Valley



WATER DISTRICT

FILE NAME: \\K-FS1\LIBRARY\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\TBR-1.DWG

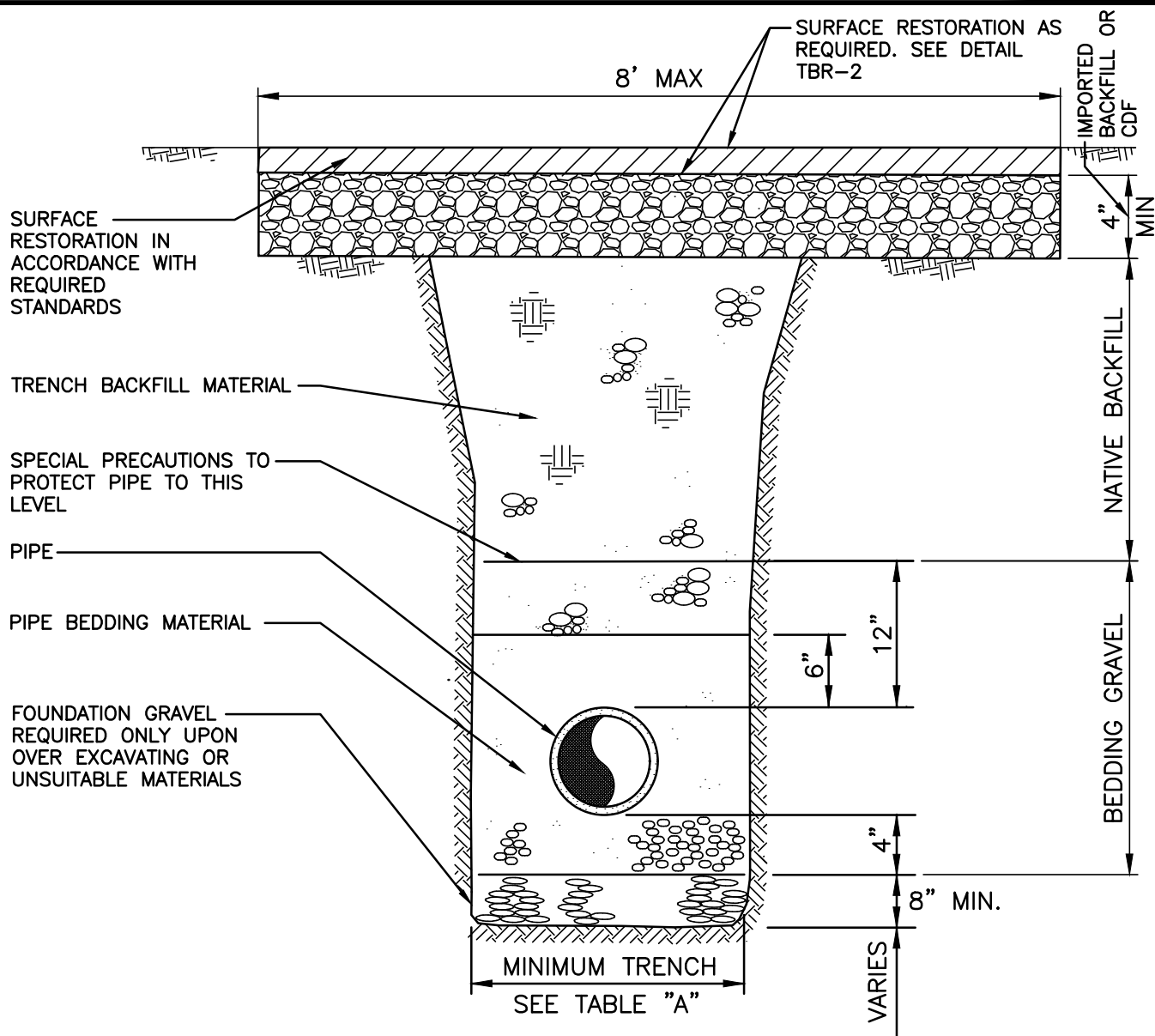
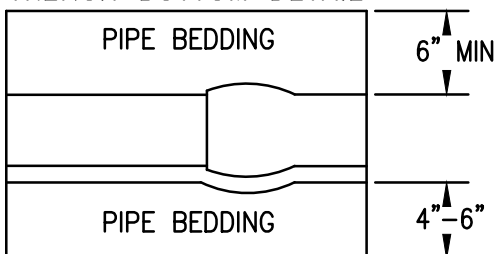


TABLE "A"

6" PIPE	-2'-6"
8" PIPE	-2'-6"
10" PIPE	-3'-0"
12" PIPE	-3'-0"
16" PIPE	-3'-6"
18" PIPE	-4'-0"
24" PIPE	-4'-0"

TRENCH BOTTOM DETAIL



KEEP TRENCH BOTTOM COMPACTED WITH UNIFORM GRADE. NO TEMPORARY SUPPORTS I.E. BLOCKS, ALLOWED TO SUPPORT PIPE. TRENCH BOTTOM SHALL BE TO GRADE PRIOR TO PIPE INSTALLATION.

NOTES:

1. REFERENCE SNOHOMISH COUNTY ENGINEERING DESIGN AND DEVELOPMENT STANDARDS, SECTION 8.
2. SURFACE RESTORATION IN ACCORDANCE WITH SNOHOMISH COUNTY REQUIREMENTS.
3. MAXIMUM TRENCH WIDTH:
15" DIAMETER PIPE AND SMALLER = 40"
16" DIAMETER PIPE AND SMALLER = $1-1/2 \times \text{I.D.} + 18"$

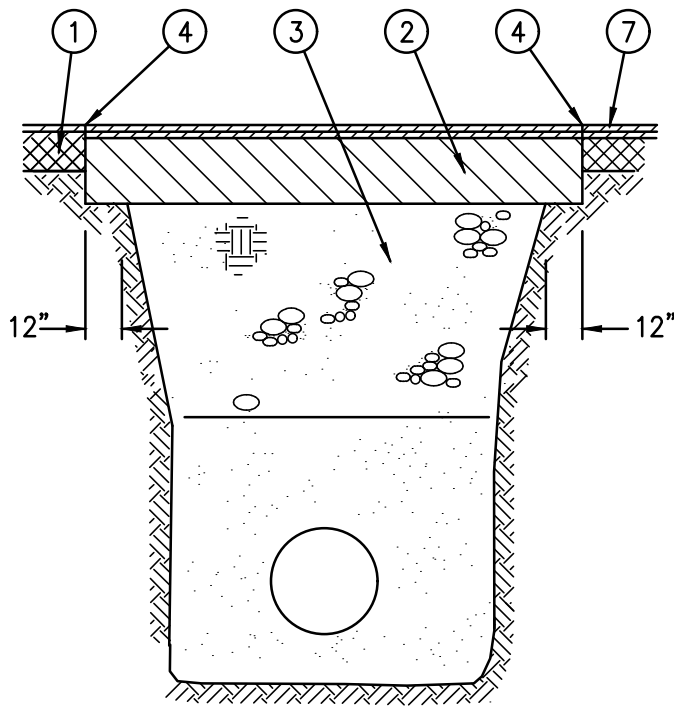
CROSS VALLEY WATER DISTRICT
TRENCH BACKFILL AND RESTORATION

TRENCH SECTION - PIPE
BEDDING AND TRENCH BACKFILL

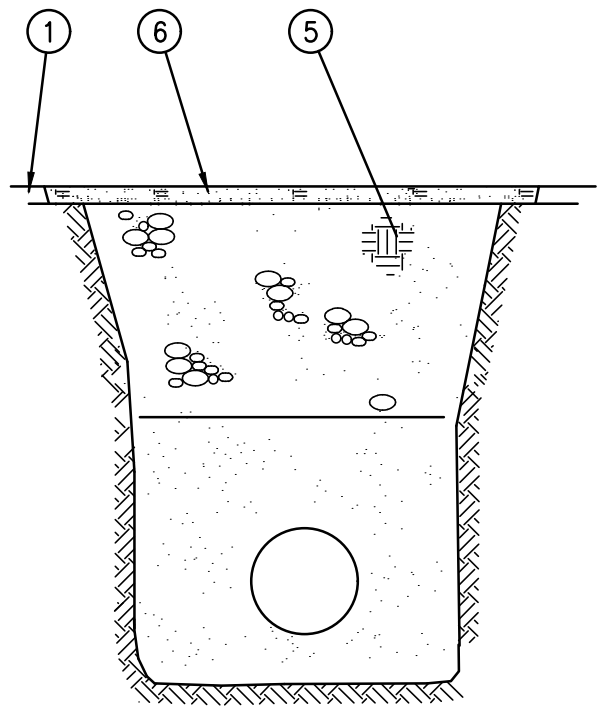
TBR-1

NOT TO SCALE

FEB 2022



ACP RESTORATION



UNPAVED SHOULDER
AND PRIVATE EASEMENT

- ① EXISTING SURFACE
- ② LONGITUDINAL TRENCH – 6" HMA CLASS 1/2" OR 2" HMA CLASS 1/2" + 4" HMA CLASS 1"
TRANSVERSE TRENCH – 8" HMA CLASS 1/2" OR 2" HMA CLASS 1/2" + 6" HMA CLASS 1"
- ③ TRENCH BACKFILL OR CONTROL DENSITY FILL
PER LOCAL JURISDICTIONAL REQUIREMENTS.
- ④ NEAT LINE ACP CUT. TACK EDGES WITH AR
4000 ASPHALT CEMENT. SEAL EDGES WITH
AR 4000 ASPHALT CEMENT.
- ⑤ TRENCH BACKFILL.
- ⑥ RESTORE EXISTING SURFACE. TOP SOIL, CSTC
(2" MINIMUM) OR AS NOTED ON PLANS.
- ⑦ 2" HMA CLASS 1/2" OVERLAY WHEN SPECIFIED ON
PLANS OR REQUIRED BY THE JURISDICTIONAL
AUTHORITY.

HMA= HOT MIX ASPHALT
AR= ASPHALT RUBBER
CSTC= CRUSHED SURFACE TOP COURSE
ACP= ASPHALT CONCRETE PAVEMENT

NOTES:

- 1. RESTORATION TO BE EXISTING CONDITION OR BETTER.
- 2. ALL WORK TO COMPLY WITH SNOHOMISH COUNTY REQUIREMENTS.
- 3. IF PERMEABLE SURFACE IS REQUIRED, INSTALL OR REPLACE IN KIND
ACCORDING TO JURISDICTIONAL REQUIREMENTS.

FILE NAME: \\K-FS1\LIBRARY\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\TBR-2.DWG

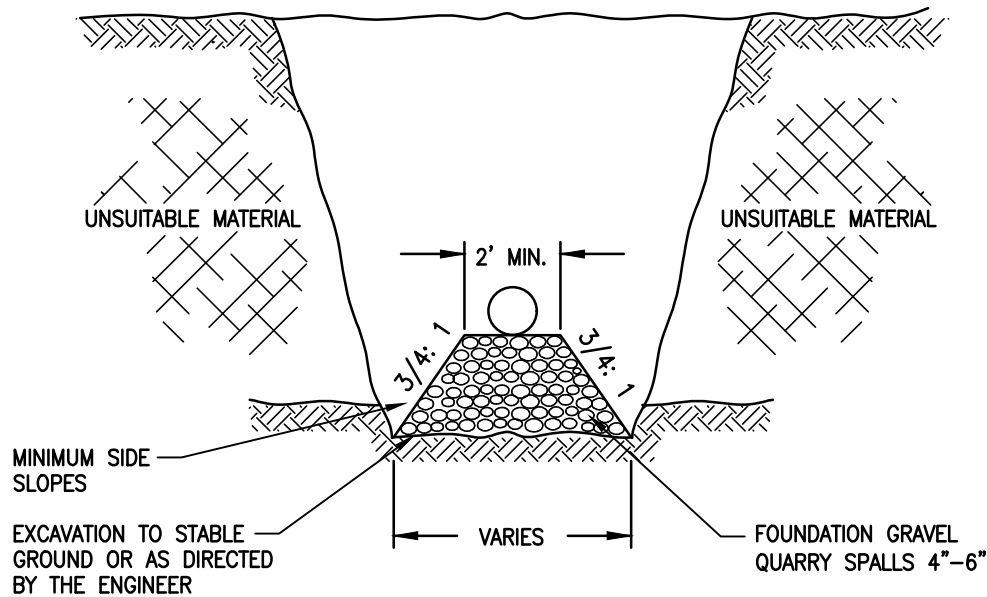
**CROSS VALLEY WATER DISTRICT
TRENCH BACKFILL AND RESTORATION**

TRENCH SURFACE RESTORATION

TBR-2

NOT TO SCALE

FEB 2022



NOTES:

1. OVER EXCAVATION REQUIRED WHEN UNSUITABLE FOUNDATION MATERIALS ENCOUNTERED.
2. STRICTLY COMPLY WITH ALL TRENCH SAFETY SYSTEM REQUIREMENTS.
3. RESTRAINED JOINT PIPE MAY BE REQUIRED AS DIRECTED BY THE DISTRICT.
4. BACKFILL TRENCH IN ACCORDANCE WITH SNOHOMISH COUNTY ENGINEERING DESIGN AND DEVELOPMENT STANDARDS AND CVWD STANDARD DETAIL TBR-1.

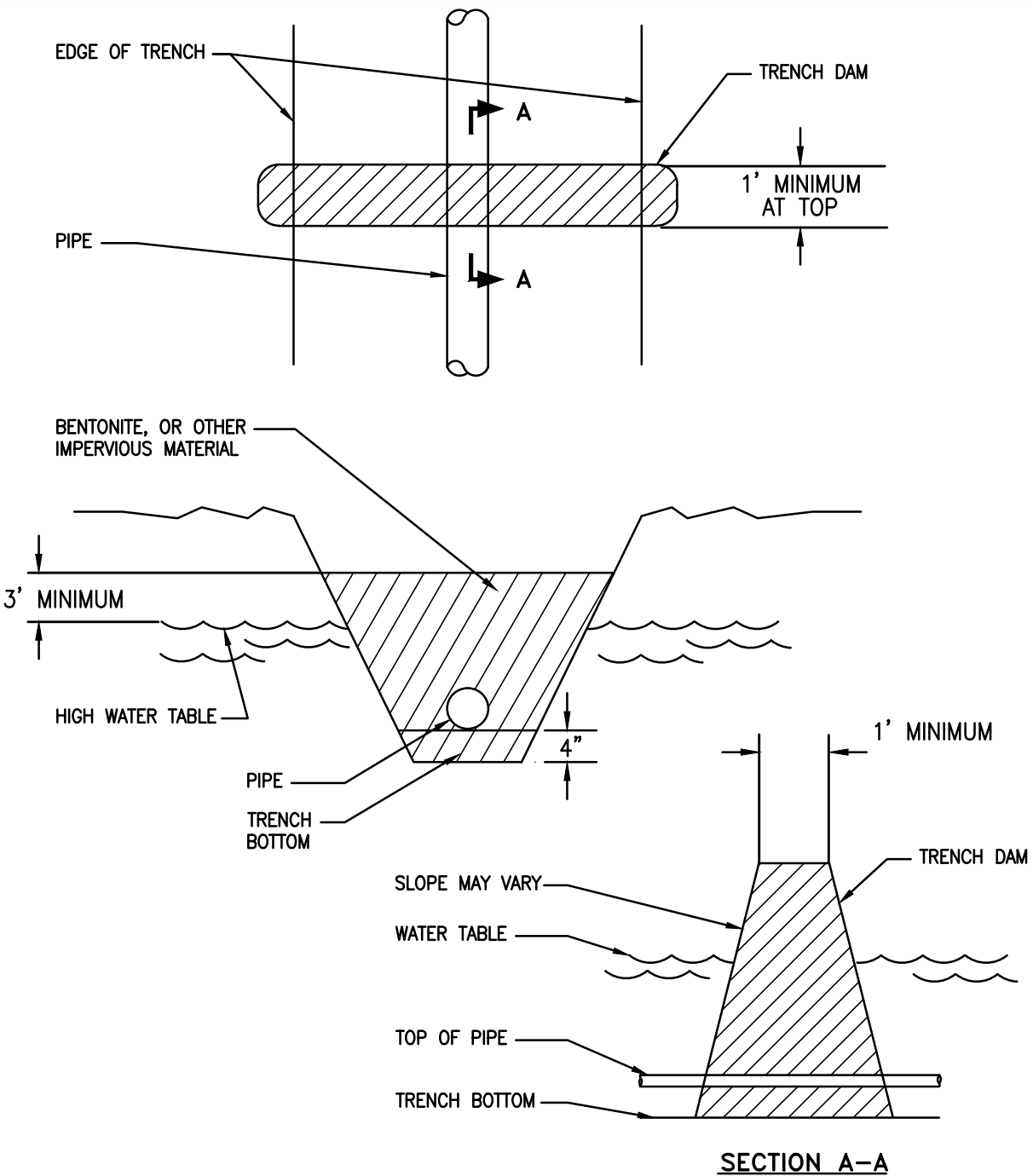
**CROSS VALLEY WATER DISTRICT
TRENCH BACKFILL AND RESTORATION**

**UNSUITABLE FOUNDATION
EXCAVATION**

TBR-3

NOT TO SCALE

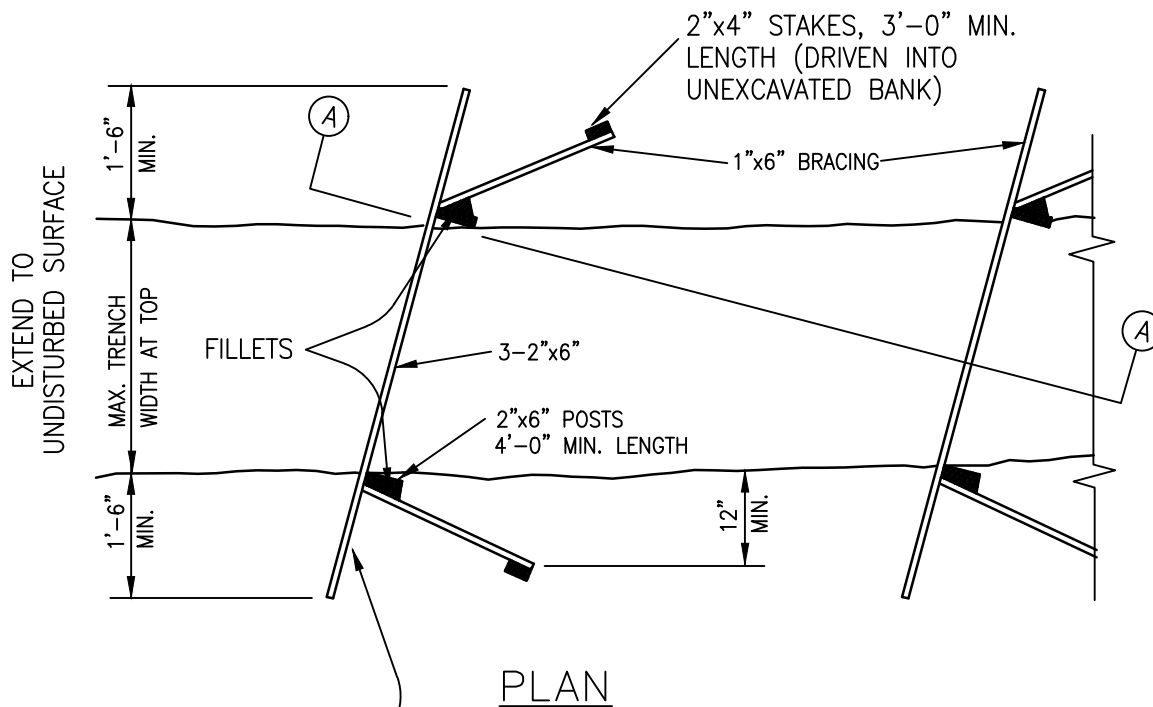
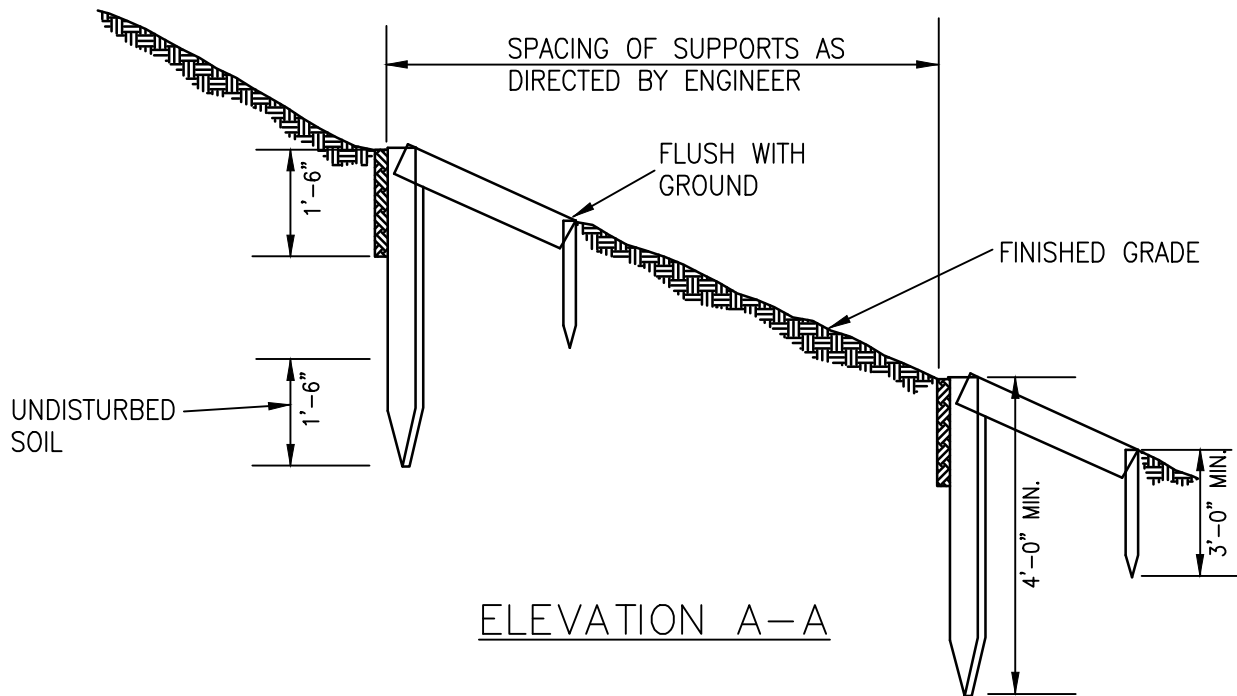
FEB 2022



NOTES:

1. INSTALL IN HIGH GROUND WATER AREAS, ADJACENT TO WETLANDS AND STREAM CROSSINGS OR AS SHOWN ON PLANS OR AS DIRECTED BY THE DISTRICT.
2. ELEVATION AT TOP OF TRENCH DAM TO VARY BASED ON WATER TABLE AS DIRECTED BY THE DISTRICT.

FILE NAME: \\K-FSI\LIBRARY\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\TBR-5.DWG



ONLY TOP 2"x6" BOARD EXTENDS FULL DISTANCE AS SHOWN. ALL OTHER BOARDS EXTEND TO FULL WIDTH OF TRENCH.

NOTE:

1" CROSS BOARDS AND BRACING TO BE SECURELY NAILED TO STAKES.

**CROSS VALLEY WATER DISTRICT
TRENCH BACKFILL AND RESTORATION**

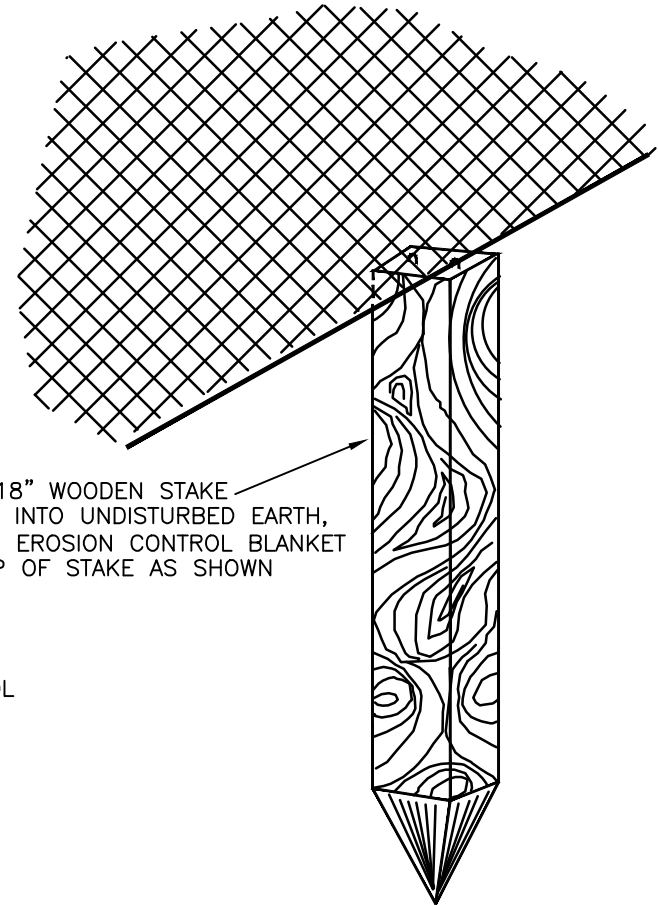
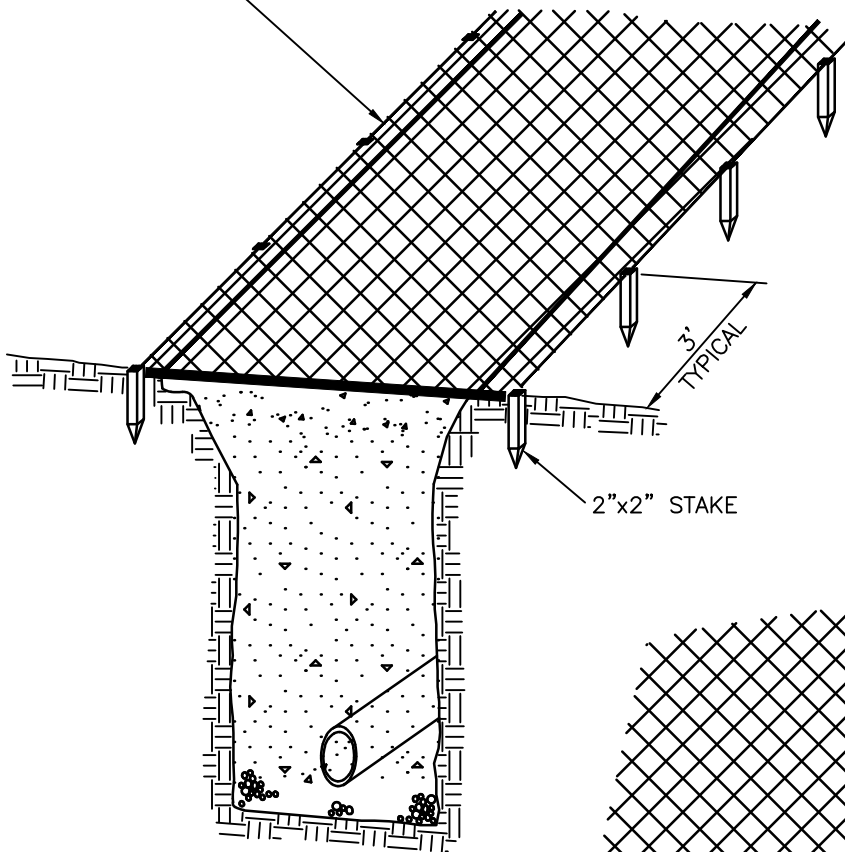
TIMBER BACKFILL SUPPORTS

TBR-5

NOT TO SCALE

FEB 2022

EROSION CONTROL BLANKET
4" MINIMUM OVERLAP AT
STAPLED JOINTS.



2"x2"x18" WOODEN STAKE
DRIVEN INTO UNDISTURBED EARTH,
STAPLE EROSION CONTROL BLANKET
TO TOP OF STAKE AS SHOWN

NOTE:

AFTER TRENCH HAS BEEN COMPLETELY
BACKFILLED AND COMPACTED, EROSION CONTROL
BLANKET SHALL BE INSTALLED LONGITUDINALLY
OVER ENTIRE WIDTH OF BACKFILLED TRENCH.

EROSION CONTROL BLANKET FOR SLOPE
PROTECTION SHALL BE USED AS DIRECTED
BY THE DISTRICT AND/OR ENGINEER.

THIS SLOPE PROTECTION DETAIL REPRESENTS
MINIMUM REQUIREMENTS FOR MATERIALS AND
INSTALLATIONS.

FILE NAME: \\K-FS1\LIBRARY\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\TBR-6.DWG

CROSS VALLEY WATER DISTRICT TRENCH BACKFILL AND RESTORATION

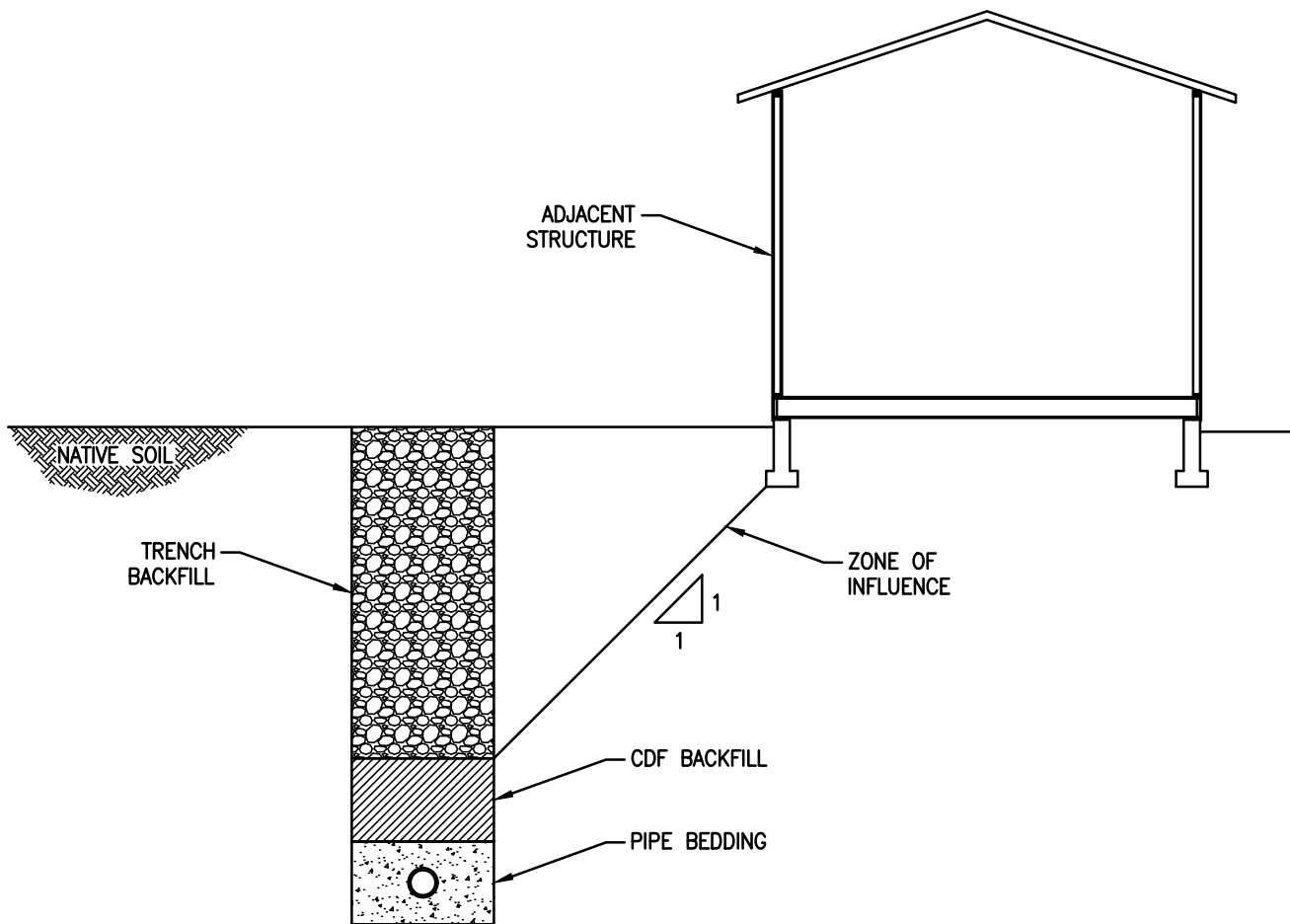
EROSION CONTROL BLANKET

TBR-6

NOT TO SCALE

FEB 2022

FILE NAME: \\K-FS1\LIBRARY\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\TBR-7.DWG



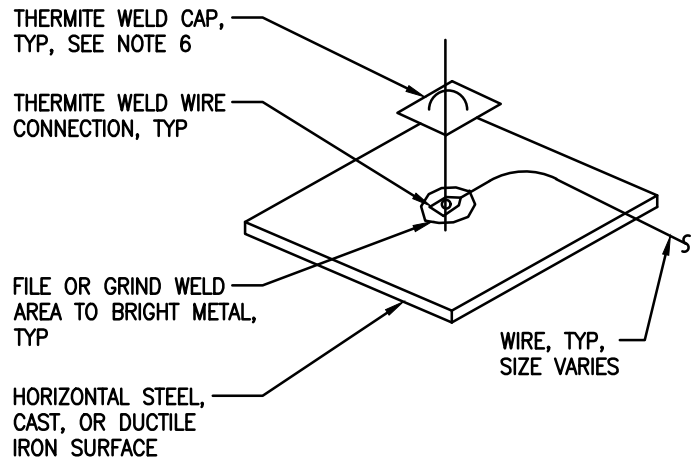
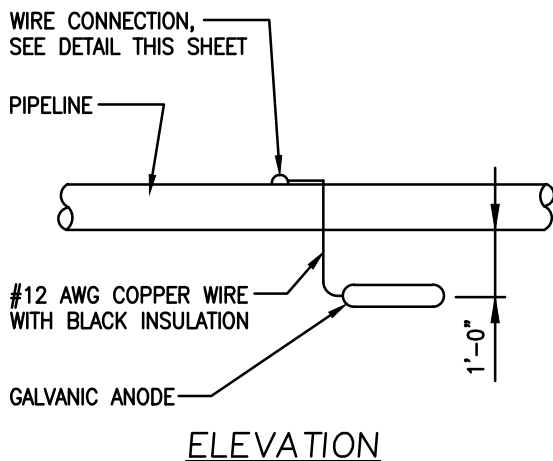
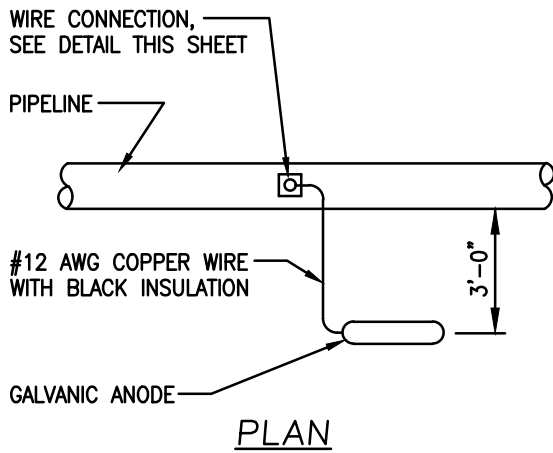
**CROSS VALLEY WATER DISTRICT
TRENCH BACKFILL AND RESTORATION**

ZONE OF INFLUENCE

TBR-7

NOT TO SCALE

FEB 2022



WIRE CONNECTION FOR
HORIZONTAL SURFACES
NTS

GALVANIC ANODE INSTALLATION
FOR METALLIC PIPE
NTS

NOTES:

1. COPPER SLEEVE REQUIRED FOR THERMITE WELDING OF #10 AWG AND SMALLER WIRE.
2. USE COPPER SLEEVE FOR THERMITE WELDING OF #4 AND #2 AWG JOINT BONDING WIRES.
3. WELDER AND CARTRIDGE SIZE VARIES ACCORDING TO SURFACE SHAPE, MATERIAL, AND HORIZONTAL OR VERTICAL SURFACE. CONSULT WELDER MANUFACTURER FOR RECOMMENDED WELDER AND CARTRIDGE.
4. FOR MULTIPLE WIRE CONNECTIONS TO PIPE SEPARATE THERMITE WELD WIRE CONNECTIONS BY ONE PIPE DIAMETER MINIMUM, 2'-0" MAXIMUM.
5. USE 15 GRAM MAXIMUM SIZE WELD CARTRIDGES FOR CONNECTIONS TO PETROLEUM AND NATURAL GAS PIPELINES OR STRUCTURES. WIRE CONNECTIONS SHALL BE AS SPECIFIED AND APPROVED BY THE OWNER.
6. COAT COMPLETED THERMITE WELD CONNECTIONS WITH ROYSTON HANDY CAP AND 747 PRIMER OR HEAT SHRINK AS SPECIFIED.

CERTIFICATE OF COST FOR WATER DISTRIBUTION SYSTEM

Cross Valley



WATER DISTRICT

**APPLICATION FOR REIMBURSEMENT
AGREEMENT FOR WATER FACILITIES**

Cross Valley



WATER DISTRICT

APPLICATION FOR REIMBURSEMENT

AGREEMENT FOR WATER FACILITIES

The undersigned, _____ ("Applicant") hereby applies to Cross Valley Water District ("District") for a Reimbursement Agreement pursuant to Resolution No. _____, or as hereinafter amended, and pursuant to the Developer Extension Agreement executed by Applicant and District on _____, 20____ ("Agreement").

THIS APPLICATION MUST BE SUBMITTED TO THE DISTRICT PRIOR TO DISTRICT'S ACCEPTANCE OF THE EXTENSION FACILITIES CONSTRUCTED PURSUANT TO THE ABOVE-REFERENCED AGREEMENT.

Name of Applicant: _____

Name of Project: _____

Description of Project or Project Portion for which reimbursement is requested:

Tax Identification Numbers for properties which reimbursement is requested:

APPLICANT:

Date: _____ Signature: _____

Name: _____

Address: _____

Email: _____

Telephone: _____

BILL OF SALE

Cross Valley



WATER DISTRICT

WATER BILL OF SALE

(Project Name and Number)

_____, the undersigned ("Vendor"), for value received and other consideration, receipt of which is hereby acknowledged, hereby sells, conveys, transfers, and assigns, to **CROSS VALLEY WATER DISTRICT OF SNOHOMISH COUNTY, WASHINGTON**, a municipal corporation ("Vendee"), the personal property described on Exhibit A, attached hereto and incorporated herein by this reference (the "Water Facilities"), situated in Snohomish County, Washington.

In making the conveyance, Vendor warrants to Vendee that the Water Facilities as installed are fit for the intended purpose; i.e., for use as a water distribution system including distribution and supply lines adequate for the service intended, and that they have been constructed in accordance with the conditions and standards of the District, and in compliance with all laws, regulations, resolutions or policies regarding construction of the Water Facilities. Vendor further warrants that all claims for labor, material, taxes, or other indebtedness, which might be a lien against said Water Facilities, have been paid.

Vendor guarantees for a period of two (2) years from the date of this instrument that the Water Facilities will be free of defects in labor and materials, and Vendor covenants and agrees to repair, replace, or correct, any defect in work or materials which is discovered during said two (2) year period, without cost to District. In addition, if any corrections of defects occurring within the two year guarantee period are made, the Vendor shall further warrant the corrected work or materials for two years after the District's acceptance of the corrected work or materials.

The condition of this conveyance is the adoption of a resolution by District accepting the Water Facilities and the agreement of District to operate and maintain the Water Facilities and provide water service from and after the date of said acceptance.

The Vendor warrants to the District that said Vendor owns said Water Facilities free and clear of all encumbrances and has full right and title to dispose of the same, and will defend the title of the Vendee against the claims of all third parties claiming to own, or claiming any interest in or encumbrance on, the Water Facilities.

DATED at _____, Washington, this ____ day of _____, 20____.

STATE OF WASHINGTON)
) ss
COUNTY OF SNOHOMISH)

I certify that I know or have satisfactory evidence that _____ is the person who appeared before me, and said person acknowledged that he/she signed this instrument and acknowledged it to be his/her free and voluntary act for the uses and purposes mentioned in the instrument.

Dated _____

Notary Public in and of the State
of Washington, residing at _____
My Appointment Expires _____

STATE OF WASHINGTON)
) ss
COUNTY OF SNOHOMISH)

I certify that I know or have satisfactory evidence that _____ is the person who appeared before me, and said person acknowledged that he/she signed this instrument, on oath stated that he/she was authorized to execute the instrument and acknowledged it as the _____ of _____ to be the free and voluntary act of such corporation for the uses and purposes mentioned in the instrument.

Dated _____

Notary Public in and for the State
of Washington, residing at _____
My Appointment Expires _____

**PERFORMANCE BOND
MAINTENANCE BOND**

Cross Valley



WATER DISTRICT

PERFORMANCE BOND

PROJECT NAME & PROJECT NUMBER: _____

KNOW ALL MEN BY THESE PRESENTS THAT: _____ (the "Principal") has entered into a developer extension agreement with Cross Valley Water District, Snohomish County, Washington (the "District") for the installation of water and/or sanitary sewer improvements necessary for the provision of water and/or sanitary sewer service to the Principal's _____ development project by extension agreement dated _____, 20____, (the "Agreement") as is more fully described in the Agreement on file with the District; and

WHEREAS, said extension improvements shall be completed within twenty-four (24) months from the date of the signing of the Agreement, unless the Agreement is extended as provided in the Agreement; and

WHEREAS, the Principal is required by the terms of the Agreement to furnish a bond for the faithful performance of said Agreement in accordance with the conditions stated below;

NOW, THEREFORE, we, _____, as Principal, and _____ (the "Surety"), authorized to transact business in the State of Washington, as Surety, having its principal office and place of business at _____, are held and firmly bound unto the District in the sum of _____ Dollars (\$_____), lawful money of the United States of America, for which payment we and each of us bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITIONS OF THE ABOVE OBLIGATION ARE SUCH THAT: If the Principal, or the Principal's representatives, heirs, successors or assigns, shall well and truly, and in a good, sufficient and workmanlike manner, keep and observe all of the covenants, conditions and agreements in the Agreement, and faithfully perform all the provisions of the Agreement, and pay all laborers, mechanics, subcontractors, and all persons who supply such persons or subcontractors with provisions and supplies for carrying on the work under the Agreement, and for all materials, equipment or other supplies, used in connection with the performance of the Agreement, and shall indemnify and save harmless the District, its officers, employees and agents, from any pecuniary loss resulting from the breach of any of said covenants, conditions and agreements to be performed by the Principal;

AND, if the Principal corrects or replaces any defective work or materials discovered by the District within a period of two years from the date of acceptance of such work by the District, then this obligation shall be void and shall be promptly released by the District; otherwise, this obligation shall be and remain in full force and effect;

AND FURTHER, no change, extension of time, alteration or addition to the work to be performed under the Agreement shall in any way affect the Principal's or Surety's obligation on this Bond and Surety does hereby waive notice of any change, extension of time, alteration or addition under the Agreement;

AND FURTHER, it is understood and agreed that this obligation shall continue in effect until released in writing by Cross Valley Water District, Snohomish County, Washington.

IN WITNESS WHEREOF, the above referenced parties have executed this instrument under their separate seals this ____ day of _____, 20____, the name and corporate seal of each corporate party hereto affixed, and these presents duly signed by its undersigned representatives pursuant to authority of its governing body.

PRINCIPAL

By _____
Title _____

Attest: (if corporation)

SURETY

TWO WITNESSES

By _____
Title _____

By _____
Title _____

Address

Corporate Seal:

Certificate as to Corporate Seal

I hereby certify that I am the (Assistant) Secretary of the Corporation named as Principal in the within Bond; that _____, who signed the said Bond on behalf of the Principal, was _____ of said Corporation; that I know his signature thereto is genuine and that said Bond was duly signed, sealed, and attested for and in behalf of said Corporation by authority of its governing body.

Secretary or Assistant Secretary

MAINTENANCE BOND

PROJECT NAME & PROJECT NUMBER: _____

KNOW ALL MEN BY THESE PRESENTS: That we, _____, as Principal, and _____, authorized to transact business in the State of Washington, as Surety, having its principal office and place of business at _____, are held and firmly bound unto Cross Valley Water District, Snohomish County, Washington (the "District"), as Obligee, in the sum of _____ Dollars (\$_____), lawful money of the United States of America, for which payment we and each of us bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT:

WHEREAS, the Principal entered into a developer extension agreement with the Obligee, dated _____, 20_____, for construction and installation of an extension to the water and/or sewer system of the District and connection to the District's water and/or sewer system, in Snohomish County, Washington (the "Agreement").

NOW, THEREFORE, the condition of this obligation is such that the Principal shall maintain and remedy said work under the Agreement free from defects in materials and faulty workmanship for a period of two years following the acceptance of the extension to the water and/or sewer system by the District. If the Principal shall maintain and remedy said work under the Agreement free from defects in materials and workmanship, for a period of two (2) years following completion and acceptance by the District, then this obligation shall be void; otherwise it shall remain in full force and effect.

IN WITNESS WHEREOF, the above referenced parties have executed this instrument under their separate seals this _____ day of _____ 20_____, the name and corporate seal of each corporate party hereto affixed, and these presents duly signed by its undersigned representatives pursuant to authority of its governing body.

PRINCIPAL

By _____
Title _____

Attest: (if corporation)

SURETY

TWO WITNESSES

By _____
Title _____

By _____
Title _____

Address

Corporate Seal:

Certificate as to Corporate Seal

I hereby certify that I am the (Assistant) Secretary of the Corporation named as Principal in the within Bond; that _____, who signed the said Bond on behalf of the Principal, was _____ of said Corporation; that I know his signature thereto is genuine and that said Bond was duly signed, sealed, and attested for and in behalf of said Corporation by authority of its governing body.

Secretary or Assistant Secretary

CASH PERFORMANCE AND PLEDGE AGREEMENT
CASH MAINTENANCE AND PLEDGE AGREEMENT

Cross Valley



CASH MAINTENANCE AND PLEDGE AGREEMENT

THIS AGREEMENT is made this _____ day of _____, 20____, between CROSS VALLEY
WATER DISTRICT, a municipal corporation ("District"), and
_____, ("Developer").

I. RECITALS

1.1 The District and Developer are parties to a _____ (Water/Sewer) Developer Extension Agreement dated _____, 20____, (the "Extension Agreement"), which requires the conveyance by the Developer of certain water or sewer facilities to the District (the "Project") following completion and acceptance by the District.

1.2 The Developer is required to furnish the District with a maintenance guarantee to guarantee maintenance of the Project for a period of two (2) years and pursuant to such provision, Developer desires to furnish the District with cash in lieu of a corporate surety maintenance bond as the required maintenance guarantee.

1.3 The District will accept, hold and disburse such cash as set forth below.

1.4 Therefore, the parties in consideration of the terms and conditions herein stated, now agree as follows:

II. CASH MAINTENANCE BOND

2.1 The Developer shall provide the District cash funds ("Funds") in the amount of _____ (\$ _____) to guarantee the Developer's maintenance of the Project installed pursuant to the Extension Agreement referenced in Paragraph 1.1 above.

2.2 The District shall hold and deposit such funds in an interest-bearing account in the _____ Bank ("Bank"), such account to be in the sole name of the District.

2.3 The conditions under which the District will disburse or utilize such Funds for the completion of Developer's obligation under the Extension Agreement are such that:

a. If the Developer shall maintain and remedy the Project free from defects in materials and workmanship for a period of two (2) years following completion and acceptance by the District, the District shall disburse the Funds together with interest thereon, less charges for the District's administrative and other costs referenced in this Agreement, to Developer within 780 days of such acceptance; or

b. If the Developer does not so maintain and remedy the Project free from defects in materials and workmanship for a period of two years following completion and acceptance by District, the District shall have the right to use the Funds, including any interest thereon, to maintain the system to the District's satisfaction and specifications referenced in the Extension Agreement; in such event, the District shall return any unused Funds and/or interest thereon to the Developer within 780 days of such acceptance.

III. PLEDGE AND SECURITY AGREEMENT

3.1 The Developer hereby grants to the District, its successors and assigns, a security interest in the Funds, which Funds will be delivered to the District and placed in the District's possession and control. The Developer further grants to the District a security interest in all proceeds of Funds, whether in the form of profits, dividends, accrued interest, or otherwise. The funds and proceeds therefrom shall secure all other of the Developer's obligations under the Extension Agreement, together with all addenda thereto, including this addendum.

3.2 For purposes of the security interest granted herein, the Bank shall be the agent of the District for possession of the Funds such that possession of the Funds by Bank shall be deemed to be possession of the Funds by the District.

3.3 The Developer warrants that, except as provided herein, the Developer has full title to the Funds and the Funds are free and clear of any other security interest, encumbrance, or claim of right, title, or ownership. The Developer will not create or permit the existence of any lien or security interest, other than that hereby created in the Funds, without the express written consent of the District, nor shall the Developer assign any interest in the Funds without said written consent, such consent to be in the District's sole discretion.

3.4 The Developer agrees to repay to the District all sums which the District may reasonably expend or incur in conserving or protecting the Funds, or in enforcing its security interest herein, including without limitation such sums as may be charged by the Bank or any governmental entity with respect to the Funds. The sums agreed to be paid herein shall be secured by this Agreement.

3.5 The District shall have the right to enforce and collect on its security interest in the Funds in accordance with the terms and provisions contained in this Agreement. Enforcement and collection of the District's security interest in the Funds shall be in addition to all other rights and remedies granted by law, equity, or contract to the District to see reimbursement of additional damages incurred and/or to enforce the provision of the Extension Agreement and this Agreement, should the Funds be insufficient to discharge the Developer's obligations to the District.

IV. GENERAL PROVISIONS

4.1 This Agreement shall service as an addendum to the Extension Agreement and shall supersede and amend such Extension Agreement to the extent provided herein.

4.2 All time limits set forth herein are of the essence. All parties agree to perform all obligations under this Agreement with due diligence.

4.3 In the event that this Agreement or any obligation secured by it is referred to an attorney for protecting or defending the priority of the District's interest in the Funds or for collection or realization procedures, the Developer agrees to pay a reasonable attorneys' fee, including fees incurred in both trial and appellate courts or fees incurred without suit, and all court costs and costs of the public officials. The sums agreed to be paid herein shall be secured by this Agreement.

4.4 The District will cause to be performed certain services by its legal counsel, engineers, and District personnel to carry out the foregoing purposes, including but not limited to, the preparation and administration of this and any related agreements and documents. Developer agrees to pay the cost of such services as a condition of the District's agreement herein.

DISTRICT:

DEVELOPER:

CROSS VALLEY WATER DISTRICT

By _____

By _____

Its _____

Its _____

FIRST FINANCIAL NORTHWEST BANK, hereby consents and agrees that it is the agent of CROSS VALLEY WATER DISTRICT ("District") for purposes of possession by CROSS VALLEY WATER DISTRICT of cash funds in the amount of _____ (\$_____), which funds the District has a security interest in pursuant to this Agreement, and pursuant to RCW 62A.9-304.

DATED this ____ day of _____, 20____.

First Financial Northwest Bank

Clearview Branch

By _____

Its _____

STATE OF WASHINGTON)

)ss.

COUNTY OF SNOHOMISH)

I certify that I know or have satisfactory evidence that _____ is the person who appeared before me, and said person acknowledged that he/she signed this instrument, on oath stated that he/she was authorized to execute the instrument and acknowledged it as the _____ of _____ BANK to be the free and voluntary act of such corporation for the uses and purposes mentioned in the instrument.

DATED _____

Notary Public in and for the State of
Washington residing at _____

My Appointment Expires _____

CASH PERFORMANCE AND PLEDGE OF MONIES AGREEMENT

THIS AGREEMENT is made this ____ day of _____, 20____ between Cross Valley Water District, a municipal corporation ("District"), and _____, ("Developer").

I. RECITALS

1.1 The District and the Developer are parties to a _____ (Water/Sewer) Developer Extension Agreement dated _____, 20__ ("Extension Agreement"), regarding the construction, and acceptance by and conveyance to the District, of certain extension improvements for the project known as _____ ("Project") referenced therein.

1.2 Pursuant to paragraph 11, "Performance Bond/Maintenance Bond", of the Extension Agreement, the Developer is required to furnish the District with a performance guarantee to guarantee the completion and acceptance of the extension improvements within twenty-four (24) months of the date of the District's acceptance of the Developer's application for the Extension Agreement in accordance with the provisions of the Extension Agreement, and shall also secure payment by the Developer of all persons furnishing labor or materials. Pursuant to such provision, the Developer desires to furnish the District a cash bond in lieu of a corporate surety performance bond as the required performance guarantee.

1.3 The District will accept, hold, and disburse such cash bond as set forth below.

1.4 Therefore, the parties, in consideration of the terms and conditions herein stated, now agree as follows:

II. CASH PERFORMANCE BOND

2.1 The Developer shall provide the District cash funds ("Funds") in the amount of U.S. _____ Dollars (\$_____) to guarantee the Developer's performance of the Extension Agreement referenced in paragraph 1.1 above and to secure payment by the Developer of all persons furnishing labor or materials for said work.

2.2 The District shall hold and deposit such funds in an interest-bearing account in the _____ Bank ("Bank"), such account to be in the sole name of the District.

2.3 The conditions under which the District will disburse or utilize such Funds for the completion of the Developer's obligation under the Extension Agreement are such that:

a. If the extension improvements which are the subject to the Extension Agreement are completed and are given final acceptance by the District within twenty-four (24) months of the date of the Extension Agreement, and all persons furnishing labor or materials for said work have been paid, the District shall disburse the Funds together with interest thereon, less charges for District administrative and other costs referenced in this Agreement, to the Developer within thirty (30) days of such acceptance; or

b. If the extension improvements which are the subject of the Extension Agreement are not completed and accepted by the District within twenty-four (24) months of the date of the Extension Agreement, or all persons furnishing labor or materials for said work have not been paid, the District shall have the right to use the Funds, including any interest thereon, to complete such Extension improvement to the District's satisfaction and specifications referenced in the Extension Agreement or pay such persons furnishing labor or materials for the work; in such event,

the District shall return any unused Funds and/or interest thereon to the Developer within thirty (30) days of the completion and acceptance of the extension improvement by the District.

III. PLEDGE AND SECURITY AGREEMENT

3.1 Developer hereby grants to the District, its successors and assigns, a security interest in the Funds, which Funds will be delivered to the District and placed in the District's possession and control. The Developer further grants to the District a security interest in all proceeds of the Funds, whether in the form of profits, dividends, accrued interest, or otherwise.

3.2 For purposes of the security interest granted herein, the Bank shall be the agent of the District for possession of the Funds such that possession of the Funds by the Bank shall be deemed to be possession of the Funds by the District.

3.3 The Developer warrants that, except as provided for herein, the Developer has full title to the Funds and the Funds are free and clear of any other security interest, encumbrance, or claim of right, title, or ownership. "The Developer will not create or permit the existence of any lien or security interest other than that hereby created in the Funds without the express written consent of the District nor shall Developer assign any interest in the Funds without said written consent, such consent to be in the District's sole discretion.

3.4 The Developer agrees to repay to the District all sums which the District may expend or incur in conserving or protecting the Funds, or in enforcing its security interest herein, including without limitation such sums as may be charged by Bank or any governmental entity with respect to the Funds. The sums agreed to be paid herein shall be secured by this Agreement.

3.5 The District shall have the right to enforce and collect on its security interest in the Funds in accordance with the terms and provisions contained in this Agreement. Enforcement and collection of the District's security interest in the Funds shall be in addition to all other rights and remedies granted by law, equity, or contract to the District to seek reimbursement of additional damages incurred and/or to enforce the provisions of the Extension Agreement and this Agreement, should the Funds be insufficient to discharge the Developer's obligations to the District.

IV. GENERAL PROVISIONS

4.1 This Agreement shall serve as an addendum to the Extension Agreement and shall supersede and amend such Extension Agreement to the extent provided herein.

4.2 All time limits set forth herein are of the essence. All parties agree to perform all obligations under this Agreement with due diligence.

4.3 In the event that this Agreement or any obligation secured by it is referred to an attorney for protecting or defending the priority of the District's interest in the Funds, or for collection or realization procedures, Developer agrees to pay a reasonable attorneys' fee, including fees incurred in both trial and appellate courts or fees incurred without suit, and all court costs and costs of the public officials. The sums agreed to be paid herein shall be secured by this Agreement.

4.4 The District will cause to be performed certain services by its legal counsel, engineers, and District personnel to carry out the foregoing purposes, including but not limited to, the preparation and administration of this and any related agreements and documents. The Developer agrees to pay the cost of such services as a condition of the District's agreement herein.

CROSS VALLEY WATER DISTRICT
("District")

By _____

Its _____

("Developer")

By _____

Its _____

FIRST FINANCIAL NORTHWEST BANK hereby consents and agrees that it is the agent of CROSS VALLEY WATER DISTRICT ("District") for purposes of possession by CROSS VALLEY WATER DISTRICT of cash funds in the amount of (\$ _____), which funds the District has a security interest in pursuant to this Agreement and pursuant to RCW 62A.9-304.

DATED this _____ day of _____, 20_____.

FIRST FINANCIAL NORTHWEST BANK ("BANK")

Clearview Branch

By _____

Its _____

STATE OF WASHINGTON)

) ss

COUNTY OF SNOHOMISH)

I certify that I know or have satisfactory evidence that _____ is the person who appeared before me, and said person acknowledged that _____ signed this instrument, on oath stated that _____ was authorized to execute the instrument and acknowledged it as the _____ of the _____ **BANK** to be the free and voluntary act of such corporation for the uses and purposes mentioned in the instrument.

Dated _____

Notary Public in and for the State of
Washington, residing at _____

My appointment Expires: _____

STATE OF WASHINGTON)
) ss
COUNTY OF SNOHOMISH)

I certify that I know or have satisfactory evidence that _____ is the person who appeared before me, and said person acknowledged that he/she signed this instrument, on oath stated that he/she was authorized to execute the instrument and acknowledged it as the **Cross Valley Water DISTRICT**, a municipal corporation, to be the free and voluntary act of such corporation for the uses and purposes mentioned in the instrument.

Dated _____

Notary Public in and for the State
of Washington, residing at _____

My Appointment Expires: _____

STATE OF WASHINGTON)
) ss
COUNTY OF SNOHOMISH)

I certify that I know or have satisfactory evidence that _____ is the person who appeared before me, and said person acknowledged that he/she signed this instrument, on oath stated that he/she was authorized to execute the instrument and acknowledge it as the _____ to be the free and voluntary act of such corporation for the uses and purposes mentioned in the instrument.

Dated _____

Notary Public in and for the State of

Washington, residing at _____

My Appointment Expires: _____

Conditional Acceptance

CASH PERFORMANCE AND PLEDGE OF MONEYS AGREEMENT

Cross Valley



WATER DISTRICT

CASH PERFORMANCE AND PLEDGE AGREEMENT

THIS AGREEMENT is made this ____ day of _____, 20____, between CROSS VALLEY WATER DISTRICT, a municipal corporation ("District"), and _____ ("Developer").

I. RECITALS

1.1 The District and Developer are parties to a _____ (Water/Sewer) Developer Extension Agreement Dated the ____ day of _____, 20____, (the "Extension Agreement"), which requires the conveyance by the Developer of certain water or sewer facilities to the District (the "Project") following completion and acceptance by the District.

1.2 The Developer has requested that the District **conditionally** accept for use and operation of the water and/or sewer facilities constructed pursuant to the Extension Agreement, but before the final paving, facility raising and other related work has been completed. The District will agree to conditionally accept the water and/or sewer facilities for use and operation, on the condition that the Developer furnishes the District with a performance guarantee to guarantee installation and completion of all required work and improvements in accordance with the Extension Agreement and all District resolutions, policies and standards and the performance of all of the Developer's obligations under the Extension Agreement. Developer shall furnish the District with cash in lieu of a corporate surety maintenance bond as the required performance guarantee.

1.3 The District will accept, hold and disburse such cash as set forth below:

1.4 Therefore, the parties in consideration of the terms and conditions herein stated, now agree as follows:

II. CASH PERFORMANCE BOND

2.1 The Developer shall provide the District cash funds ("Funds") in the amount of U.S.

_____ Dollars(\$_____) to guarantee the Developer's installation and completion of all remaining work required by the Extension Agreement and all District resolutions, policies and standards, and the performance of all of the Developer's obligations under the Extension Agreement as referenced in Paragraph 1.2 above, including but not limited to final paving, raising facilities, punch list items, and related work.

2.2 The District shall hold and deposit such funds in an interest-bearing account in the First Financial NW Bank ("Bank"), such account to be in the sole name of the District.

2.3 The conditions under which the District will disburse or utilize such Funds for the completion of Developer's obligation under the Extension Agreement are such that:

a. If the Developer shall install and complete the remaining work required by the Extension Agreement and all District resolutions, policies and standards, and perform all of the Developer's obligations under the Extension Agreement to the District's satisfaction within one year of the date of the District's conditional acceptance of the water and/or sewer facilities for use and operation, the District shall disburse the Funds together with interest thereon, less charges for the District's administrative and other costs referenced in this Agreement, to Developer at the conclusion of said **two** year period; or

b. If the Developer does not so install and complete the remaining work required by the Extension Agreement and all District resolutions, policies and standards, and perform all of the Developer's obligations

under the Extension Agreement to the District's satisfaction within one year of the date of the District's conditional acceptance of the water and/or sewer facilities for use and operation, the District shall have the right to use the Funds, including any interest thereon, to install and complete said work to the District's satisfaction and specifications referenced in the Extension Agreement; in such event, the District shall return any unused Funds and/or interest thereon to the Developer at the conclusion of said **two** year period.

III. PLEDGE AND SECURITY AGREEMENT

3.1 The Developer hereby grants to the District, its successors and assigns, a security interest in the Funds, which Funds will be delivered to the District and placed in the District's possession and control. The Developer further grants to the District a security interest in all proceeds of Funds, whether in the form of profits, dividends, accrued interest, or otherwise. The funds and proceeds therefrom shall secure all other of the Developer's obligations under the Extension Agreement, together with all addenda thereto, including this addendum.

3.2 For purposes of the security interest granted herein, the Bank shall be the agent of the District for possession of the Funds such that possession of the Funds by Bank shall be deemed to be possession of the Funds by the District.

3.3 The Developer warrants that, except as provided herein, the Developer has full title to the Funds and the Funds are free and clear of any other security interest, encumbrance, or claim of right, title, or ownership. The Developer will not create or permit the existence of any lien or security interest, other than that hereby created in the Funds, without the express written consent of the District, nor shall the Developer assign any interest in the Funds without said written consent, such consent to be in the District's sole discretion.

3.4 The Developer agrees to repay to the District all sums which the District may reasonably expend or incur in conserving or protecting the Funds, or in enforcing its security interest herein, including without limitation such sums as may be charged by the Bank or any governmental entity with respect to the Funds. The sums agreed to be paid herein shall be secured by this Agreement.

3.5 The District shall have the right to enforce and collect on its security interest in the Funds in accordance with the terms and provisions contained in this Agreement. Enforcement and collection of the District's security interest in the Funds shall be in addition to all other rights and remedies granted by law, equity, or contract to the District to see reimbursement of additional damages incurred and/or to enforce the provision of the Extension Agreement and this Agreement, should the Funds be insufficient to discharge the Developer's obligations to the District.

IV. GENERAL PROVISIONS

4.1 This Agreement shall service as an addendum to the Extension Agreement and shall supersede and amend such Extension Agreement to the extent provided herein.

4.2 All time limits set forth herein are of the essence. All parties agree to perform all obligations under this Agreement with due diligence.

4.3 In the event that this Agreement or any obligation secured by it is referred to an attorney for protecting or defending the priority of the District's interest in the Funds or for collection or realization procedures, the Developer agrees to pay a reasonable attorneys' fee, including fees incurred in both trial and appellate courts or fees incurred without suit, and all court costs and costs of the public officials. The sums agreed to be paid herein shall be secured by this Agreement.

4.4 The District will cause to be performed certain services by its legal counsel, engineers, and District personnel to carry out the foregoing purposes, including but not limited to, the preparation and administration of this

and any related agreements and documents. Developer agrees to pay the cost of such services as a condition of the District's agreement herein.

DISTRICT:

DEVELOPER:

CROSS VALLEY WATER DISTRICT

By _____

By _____

Its _____

Its _____

FIRST FINANCIAL NORTHWEST BANK, hereby consents and agrees that it is the agent of CROSS VALLEY WATER DISTRICT ("District") for purposes of possession by CROSS VALLEY WATER DISTRICT of cash funds in the amount of _____ (\$ _____), which funds the District has a security interest in pursuant to this Agreement, and pursuant to RCW 62A.9-304.

DATED this ____ day of _____, 20 ____.

First Financial Northwest Bank

Clearview Branch

By _____

Its _____

STATE OF WASHINGTON)

)ss.

COUNTY OF SNOHOMISH)

I certify that I know or have satisfactory evidence that _____ is the person who appeared before me, and said person acknowledged that he/she signed this instrument, on oath stated that he/she was authorized to execute the instrument and acknowledged it as the _____ of _____ BANK to be the free and voluntary act of such corporation for the uses and purposes mentioned in the instrument.

DATED _____

Notary Public in and for the State of
Washington residing at _____

My Appointment Expires _____

EARLY WATER SYSTEM ACCESS AGREEMENT

Cross Valley



EARLY WATER SYSTEM ACCESS AGREEMENT

THIS Agreement is entered into this _____ day of _____, 2022, between _____ ("Developer") and the Cross Valley Water District, a Washington municipal corporation (the "District"), to allow water system access prior to final acceptance by the District.

RECITALS:

A. The District is a special purpose district organized under the laws of the State of Washington to provide water service to customers within the District boundaries.

B. The District is required by law and regulation to assure that its water distribution system is constructed in compliance with State standards and specifications and to assure that its system provides adequate water pressure and fire protection.

C. The Developer's project, _____ (the "Project"), will eventually be served by water facilities constructed pursuant to Developer Extension Agreement No. _____ (the "Development").

D. A portion of the water system of the Development (the "Water System") has been constructed, pressure tested, flushed and satisfactory purity samples have been taken, but may not have been completed and inspected for final acceptance, and ownership thereof has not been transferred to the District.

E. The District is not legally obligated to provide water service to the Project until the constructed water facilities have been accepted and ownership thereof has been transferred to the District; however, under Developer Extension Agreement No. _____, General Conditions for Jobs Constructed by Developers Section 5, the District may allow conditional use of the Water System prior to final acceptance by the District, when a governmental agency requires that fire hydrant(s) be installed and activated prior to building construction, but only after a successful pressure test and bacteriological test of the Water System.

F. The Developer desires to have the Water System made active for fire protection and construction purposes.

G. The District is willing to allow the Development limited early water system access solely to provide water for fire protection and construction uses for the Project in accordance with the terms and conditions of this Agreement.

NOW, THEREFORE, it is hereby agreed that:

1. The Developer may use the Water System prior to the District granting final acceptance of the Water System pursuant to Developer Extension Agreement No. _____, only if all the terms and conditions stated below are satisfied, as determined by the District in its sole discretion:

1.1 The Water System shall be constructed and installed in accordance with the approved plans in accordance with Developer Extension Agreement No. _____.

1.2 A successful water pressure test of the Water System has occurred, and the District has received an approved bacteriological test for the Water System; and

1.3 The Developer shall pay for all water obtained from the District under this Agreement, in accordance with all rates established by the District, and shall comply with all resolutions, regulations and policies of the District.

2. After the Water System installed for the Development meets the requirements stated in Section 1 above, the District will provide water to the Development by opening the valves on fire hydrants and Water System appurtenances to the Development. Until such time as the District grants final acceptance of the Water System in accordance with Developer Extension Agreement No. _____, the Developer shall use the Water System and District water only for fire flow, fire protection, and construction purposes. There shall be no domestic use of the water until the District has granted final acceptance of the Water System.

3. In consideration of the District's allowing early use of the Water System, the Developer releases the District from any and all damage incurred by the property or by buildings, fixtures or personal property on the property served by the Water System resulting from or related to the District allowing early use of the Water System for fire flow, fire protection, and construction use, or for any failure thereof.

4. The Developer agrees to hold harmless, indemnify and defend the District, and the District's officers, employees, agents and consultants, from and against any and all liabilities, claims, damages, injuries, judgments, losses, penalties, costs or expenses, including attorneys' fees, of every kind and nature arising out of or relating to the District's allowing early use of the Water System under this Agreement, or any failure thereof, or as a consequence of any damage incurred to the District's system during construction of the Project, or as a result of improper use of the extension. Section 3 and this Section 4 shall survive the termination or expiration of this Agreement.

5. The Developer's obligations pursuant to this Agreement shall terminate on the date the Water System is accepted by the District and ownership thereof is transferred to the District; provided, that whenever acceptance and transfer of ownership occur on different dates, Developer's obligations terminate on the later date.

6. The Developer agrees that it will not take or use any water from the Water System prior to acceptance, except as allowed under this Agreement. The Developer further agrees to require its successors or assigns to refrain from operating valves and hydrants, taking or using water from the system prior to

acceptance, except as allowed under this Agreement. The Developer is aware of District resolutions providing for fines for taking and using water prior to acceptance without permit or metered connection and in violation of District resolutions. Developer agrees to be responsible for and pay any fines assessed by the District against Developer or its successors or assigns. Developer further agrees to pay all costs of collection of said fine(s), including, but not limited to, administrative costs, litigation costs and attorney's fee.

7. The Developer's misuse of the Water System or failure to comply with any provision of this Agreement shall may be grounds for termination of this Agreement by the District, upon three days' written notice from the District to the Developer. Any termination of this Agreement may result in locking off any metered connection and notification of such action to the appropriate Fire Marshal, Department of Health, or other appropriate governmental agency.

8. Entire Agreement/Modifications. This Agreement is the final expression of, and contains the entire agreement between the parties with respect to the subject matter of the Agreement and supersedes all prior understandings with respect to the subject matter of the Agreement. This Agreement may only be modified, changed, supplemented, or amended by a written instrument signed by the District and the Developer.

DATED the day and year first above written.

Developer,

CROSS VALLEY WATER DISTRICT
a special purpose municipal corporation

By _____

By _____

Its _____

General Manager