LAKE WHATCOM WATER & SEWER DISTRICT

1220 Lakeway Drive
Bellingham, WA, 98229

(360) 734-9224
Fax 738-8250

MEMORANDUM

Date: March 19, 2020

From: Lake Whatcom Water & Sewer District

RE: Meeting Procedures During the Covid-19 Emergency

Lake Whatcom Water & Sewer District continues to operate under largely normal procedures in order to provide continuous service to our customers. That said, we are taking precautions in an effort to protect the health and safety of our staff, commissioners, and customers. Our lobby is currently closed to the public, and we are practicing social distancing guidelines as suggested by Governor Inslee and the CDC.

To that end, the District has researched alternatives to conducting upcoming regular board meetings in person. For the foreseeable future, Commissioners will be attending regular meetings by phone. Though we are required by the Open Public Meetings Act to permit public to attend these meetings, we are asking interested parties to consider instead attending the meeting remotely by phone or computer. This will allow us to provide the greatest level of protection to all participants.

If you would like to attend the March 25 regular meeting, details can be found below. In this evolving climate, we are committed to doing everything possible to provide opportunity for public comment as well as promote health and safety. As such, the District requests that if possible, public submit comments in written form by noon the day before a scheduled meeting for inclusion in the meeting discussion.

We appreciate your understanding and patience during these uncertain times. If you have any questions, please contact Administrative Assistant Rachael Hope at rachael.hope@lwwsd.org or 360-734-9224.

LWWSD Board Meeting 3.25.20
Wed, Mar 25, 2020 8:00 AM - End

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LAKE WHATCOM WATER AND SEWER DISTRICT
1220 Lakeway Drive
Bellingham, WA 98229

REGULAR MEETING OF THE BOARD OF COMMISSIONERS
AGENDA
March 25, 2020
8:00 a.m. – Regular Session

1. CALL TO ORDER

2. PUBLIC COMMENT OPPORTUNITY
   At this time, members of the public may address the Board of Commissioners. Please state your name prior to making comments.

3. ADDITIONS, DELETIONS, OR CHANGES TO THE AGENDA

4. CONSENT AGENDA

5. SPECIFIC ITEMS OF BUSINESS
   A. Resolution No. 863—Declaration of a Local Emergency related to the COVID-19 Pandemic
   B. Resolution No. 864—Design and Construction Standards
   C. Lakeview Street Reservoir Demolition Contract Award
   D. Discussion—Temporary Customer Relief Measures due to COVID-19 Impacts

6. OTHER BUSINESS

7. STAFF REPORTS
   A. General Manager
   B. Engineering Department
   C. Finance Department
   D. Operations Department

8. PUBLIC COMMENT OPPORTUNITY

9. ADJOURNMENT

AGENDA BILL Item 4	**Consent Agenda**		
DATE SUBMITTED:	March 19, 2020	MEETING DATE:	March 25, 2020
TO: BOARD OF COMMISSIONERS		FROM: Rachael Hope	
GENERAL MANAGER APPROVAL			
ATTACHED DOCUMENTS		1. See below	
		2.	
		3.	
TYPE OF ACTION REQUESTED		RESOLUTION ☐	FORMAL ACTION/ MOTION ☒ / INFORMATIONAL /OTHER ☐

****TO BE UPDATED 3.24.2020****

BACKGROUND / EXPLANATION OF IMPACT

- Minutes for the March 11, 2020 Board Meeting
- Payroll for Pay Period #06 (03/06/2020 through 03/19/2020) total to be added
- Payroll Benefits for Pay Period #06 total to be added
- Accounts Payable Vouchers total to be added

FISCAL IMPACT

Fiscal impact is as indicated in the payroll/benefits/accounts payable quantities defined above. All costs are within the Board-approved 2020 Budget.

RECOMMENDED BOARD ACTION

Staff recommends the Board approve the Consent Agenda.

PROPOSED MOTION

A recommended motion is:

"I move to approve the Consent Agenda as presented."

LAKE WHATCOM WATER AND SEWER DISTRICT
1220 Lakeway Drive
Bellingham, WA 98229

REGULAR SESSION OF THE BOARD OF COMMISSIONERS

Minutes

March 11, 2020

Board President Laura Abele called the Regular Session to order at 6:28 p.m.

Attendees:	Commissioner Laura Abele	General Manager Justin Clary
	Commissioner Todd Citron	Finance Manager/Treasurer Debi Denton
	Commissioner John Carter	Operations & Maintenance Manager Brent Winters
	Commissioner Bruce Ford	District Legal Counsel Bob Carmichael
	Commissioner Leslie McRoberts	Recording Secretary Rachael Hope

No public were in attendance.

Consent Agenda

Action Taken

Citron moved, Ford seconded, approval of:

- **Minutes for the February 26, 2020 Board Meeting**
- **Purchase of Truck per 2020 Budget totaling $85,789.93**
- **Payroll for Pay Period #05 (02/22/2020 through 03/06/2020) totaling $43,085.95**
- **Payroll Benefits for Pay Period #05 totaling $49,201.67**
- **Accounts Payable Vouchers totaling $74,847.77**

Motion passed.

Customer Appeal – Water/Sewer Bill Relief – 27 Deer Run Lane

Denton explained that the District received a letter from Ford Martin dated February 6, 2020, requesting an appeal to the Board for relief from water consumption charges at 27 Deer Run Lane. Mr. Martin's appeal was associated with water utility charges incurred as a result of a leaking toilet that occurred between November 20 and December 6, 2019. District Administrative Code allows for leak adjustments (Section 2.10.8) only for "…water bills resulting from in-ground water service line breaks between the water meter and the outermost exterior walls of the structure."

Historically, staff have completed administrative adjustment of rates to the Tier 1 (less than 2,500 cubic feet consumed) rate in instances where the excess consumption has been specifically attributed to a leak that has resulted in fees assessed at the Tier 2 (greater than 2,500 cubic feet) rate. District staff

completed this adjustment on February 3, 2020, which resulted in a reduction of Mr. Martin's utility bill by $109.45. Mr. Martin requested an additional reduction of $313.27. Discussion followed.

Action Taken

Citron moved, McRoberts seconded, to uphold the District Administrative Code as written and implemented by the General Manager, and decline Mr. Martin's appeal for leak adjustment. Motion passed.

General Manager's Report

Clary highlighted several items, including providing an update on the progression of District response to the COVID-19 epidemic and the bid opening for the Lakeview Street Reservoir demolition. He also provided the Board with examples of the workflow of a maintenance request in the District's Cartegraph software. Discussion followed.

Executive Session Per RCW 42.30.110(1)(i)(ii) To Discuss Potential Litigation – 15 Minutes

Abele recessed the Regular Session to Executive Session at 7:04 p.m. It was estimated that the Executive Session would take 15 minutes. The purpose of the Executive Session was to discuss potential litigation with legal counsel. Abele recessed the Executive Session and reconvened the Regular Session at 7:25 p.m.

With no further business, Abele adjourned the Regular Session 7:25 p.m.

_____ _____

Recording Secretary, Rachael Hope Date Minutes Approved

_____ _____

Laura Abele Todd Citron

_____ _____

Bruce R. Ford Leslie McRoberts

_____

John Carter

AGENDA BILL Item 5.A	**Resolution No. 863 Declaration of a Local Emergency related to the COVID-19 Pandemic**			
DATE SUBMITTED:	March 17, 2020	MEETING DATE:	March 25, 2020	
TO: BOARD OF COMMISSIONERS		FROM: Justin Clary, General Manager		
GENERAL MANAGER APPROVAL				
ATTACHED DOCUMENTS		1. Resolution No. 863		
TYPE OF ACTION REQUESTED		RESOLUTION ☒	FORMAL ACTION/ MOTION ☐	INFORMATIONAL /OTHER ☐

BACKGROUND / EXPLANATION OF IMPACT

Federal, state, and county emergencies have been declared in relation to the COVID-19 coronavirus pandemic. The Lake Whatcom Water and Sewer District has already implemented operational changes to mitigate the potential for impacts from the pandemic on operation of our water and sewer systems; however, additional measures may be taken through formal declaration of local emergency. Revised Code of Washington 38.52.070 provides statutory authority to the Board of Commissioners to declare an emergency, and District Administrative Code Section 2.16.3(1) indicates that "if a state or federal emergency has been declared, the Board of Commissioners should pass a resolution acknowledging the declaration." Such a declaration will provide District staff with more flexibility in responding to changing conditions that are likely to continue as we grapple with the impacts of the pandemic.

FISCAL IMPACT

No fiscal impacts are anticipated specifically related to adoption of Resolution No. 863. Fiscal impacts related to the District's response to the COVID-19 pandemic are unknown at this time.

RECOMMENDED BOARD ACTION

Staff recommends the Board adopt Resolution No. 863.

PROPOSED MOTION

A recommended motion is:

"I move to adopt Resolution No. 863 as presented."

LAKE WHATCOM WATER AND SEWER DISTRICT
RESOLUTION NO. 863

A Resolution of the Board of Commissioners
Declaring a Local Emergency related to the COVID-19 Coronavirus Pandemic

WHEREAS, the Whatcom County Health Department, the lead local agency, and the Whatcom County Sheriff's Office Division of Emergency Management reported to the Whatcom County Executive, beginning January 21, 2020, that operations and planning for the expanding outbreak of the novel coronavirus ("COVID-19") have been occurring in Whatcom County; and

WHEREAS, on January 31, 2020, the United States Department of Public Health and Human Services declared a public emergency for COVID-19 beginning on January 27, 2020; and

WHEREAS, on February 29, 2020, the Governor of the State of Washington proclaimed that a State of Emergency exists in all counties in the State of Washington due to the outbreak of COVID-19; and

WHEREAS, on March 10, 2020, the Whatcom County Executive, in coordination with the Whatcom County Health Board, declared a Whatcom County public health emergency to reduce the spread of COVID-19 in our community; and

WHEREAS, on March 13, 2020, the President of the United States of America proclaimed that National Emergency exists due to the outbreak of COVID-19; and

WHEREAS, in response to the rapidly evolving situation in Whatcom County, the Whatcom County Health Officer issued recommendations to slow the spread of COVID-19; and

WHEREAS, the Lake Whatcom Water and Sewer District ("District") has implemented measures within District operations, services, and facilities to follow the recommendations of the Whatcom County Health Department; and

WHEREAS, this incident is a threat to life and public health, constitutes an emergency, and necessitates the utilization of emergency powers granted under RCW 38.52.070, District Administrative Code Section 2.16.3, and other applicable law; and

WHEREAS, public health, safety, and welfare are at risk such that further effort is needed to continue and expand operations to reduce the threat; and

WHEREAS, while all available resources are committed to this event, the severity thereof may exceed the capacity of local and District resources, and require supplemental assistance; and

WHEREAS, the existing conditions warrant the declaration of the existence of a local emergency; and

WHEREAS, the foregoing recitals are a material part of this declaration;

NOW, THEREFORE, the Board of Commissioners of the Lake Whatcom Water and Sewer District ("Board"), do hereby declare:

Section 1. Civil Emergency. A local civil emergency exists within the District due to the COVID-19 pandemic.

Section 2. Authority of General Manager. The District General Manager or designee is authorized to exercise all emergency powers available under law, including without limitation RCW 38.52.070 and District Administrative Code Section 2.16.3, to preserve the public health, safety, and welfare.

Section 3. Scope. Emergency operations are ongoing and in effect, and the General Manager or designee is authorized to exercise the powers vested under this declaration in light of exigencies of an emergency situation, without regard to time requirements and formalities prescribed by District policy or law (except mandatory constitutional requirements). This authority shall include the right to waive competitive bidding requirements pursuant to RCW 39.04.280.

Section 4. Ratification. It is further ordered that all acts taken prior to the effective date and time of this declaration that are consistent with the intent and purpose hereof are hereby ratified and confirmed retroactive to the time of the onset of the outbreak.

Section 5. Timing and Effect. This declaration shall remain in full force and effect until terminated by issuance of a subsequent written order of the Board.

ADOPTED by the Board of Commissioners of Lake Whatcom Water and Sewer District, Whatcom County, Washington, at a regular meeting thereof, on the 25th day of March, 2020.

_____	_____
Laura Abele, Commissioner	Todd Citron, Commissioner
_____	_____
Bruce Ford, Commissioner	Leslie McRoberts, Commissioner
_____	_____
John Carter, Commissioner	Approved as to form District legal counsel

AGENDA BILL Item 5.B	**Resolution No. 864 Adoption of District Design & Construction Standards**			
DATE SUBMITTED:	March 18, 2020	MEETING DATE:	March 25, 2020	
TO: BOARD OF COMMISSIONERS		FROM: Bill Hunter, Assist. GM/District Engineer		
GENERAL MANAGER APPROVAL				
ATTACHED DOCUMENTS		1. Resolution 864 Lake Whatcom Water and Sewer District Design & Construction Standards		
TYPE OF ACTION REQUESTED		RESOLUTION ☒	FORMAL ACTION/ MOTION ☐	INFORMATIONAL /OTHER ☐

BACKGROUND / EXPLANATION OF IMPACT

The District participates in many private and public projects that range from simple single family residence water/sewer connections to large complex public works projects such as pump stations, pipelines, and reservoirs. The District's Design and Construction Standards are applied to all projects in the District. Standardization of design, materials, parts, and construction benefits the District and its customers by increasing efficiency of operations, maintenance, and asset life spans.

The District's Design and Construction Standards have been periodically refined and updated. Updates occur to comply with state agency standards and construction methods, as well as to define configuration, layout, and installation requirements set by the District.

The proposed 2020 edition is the columniation of a significant effort from all levels of District staff and engineering consultants. The new edition builds upon previous editions through refinements and addition of new details. In many cases, standards and details were scrutinized and debated at length by District staff while considering outside expertise of engineering consultants.

Staff presents the 2020 edition of the District's Design and Construction Standards for consideration of adoption by the Board of Commissioners.

FISCAL IMPACT

The cost for engineering consultants to assist with the update was set at not-to-exceed $7,500. The bulk of work was performed by District staff. No further fiscal impacts are anticipated.

RECOMMENDED BOARD ACTION

Staff recommends the Board adopt Resolution No. 864.

PROPOSED MOTION

A recommended motion is:

"I move to adopt Resolution No. 864 as presented."

LAKE WHATCOM WATER AND SEWER DISTRICT
RESOLUTION NO. 864

A Resolution of the Board of Commissioners
Adopting the Lake Whatcom Water and Sewer District Design & Construction Standards

WHEREAS, the Lake Whatcom Water and Sewer District ("District") is a special purpose district authorized under Title 57 Revised Code of Washington; and

WHEREAS, the District owns and operates water treatment, storage, and distribution systems located within its service boundaries; and

WHEREAS, the District owns and operates a sewer collection and conveyance system located within its service boundaries; and

WHEREAS, the District Board of Commissioners wishes to require that any repairs to or construction of current or future District-owned infrastructure are completed in accordance with current industry standards to ensure the maximum life of its infrastructure; and

WHEREAS, design and construction standards of the District are defined in the Lake Whatcom Water and Sewer District Design & Construction Standards; and

WHEREAS, industry standards for water and sewer infrastructure design and construction have evolved since the last revision to the Lake Whatcom Water and Sewer District Design & Construction Standards; and

WHEREAS, the District wishes to complete a comprehensive update to its design and construction standards; and

WHEREAS, the District sought, received, and incorporated comments from its consultant engineer, Wilson Engineering, LLC, who has vast experience in working with numerous public water and sewer utilities; and

WHEREAS, the District Board of Commissioners finds that it is in the public interest and will benefit the public safety, health, and welfare to have updated design and construction standards; and

WHEREAS, the foregoing recitals are a material part of this Resolution;

NOW, THEREFORE, BE IT RESOLVED by the Board of Commissioners of the Lake Whatcom Water and Sewer District, Whatcom County, Washington as follows:

Section 1. The Lake Whatcom Water and Sewer District Design and Construction Standards are hereby adopted and shall be deemed the District's technical standards for all facets of its water and sewer infrastructure within existing and future service boundaries of the Lake Whatcom Water and Sewer District, Whatcom County, Washington. The updated design and construction standards, dated March 25, 2020, are attached as Exhibit "A."

Section 2. Any resolutions or parts of resolutions in conflict herewith are hereby repealed insofar as they conflict with the provisions of this Resolution.

Section 3. If any section, subsection, sentence, clause or phrase of this Resolution is for any reason held to be invalid or unconstitutional, such decision shall not affect the validity of the remaining portions of this Resolution. The Board of Commissioners hereby declare that it would have passed this Resolution and each section, subsection, sentence, clause and phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases has been declared invalid or unconstitutional, and if, for any reason, this Resolution should be declared invalid or unconstitutional, then the original resolution or resolutions shall be in full force and effect.

Section 4: This Resolution shall be effective immediately.

ADOPTED by the Board of Commissioners of Lake Whatcom Water and Sewer District, Whatcom County, Washington, at a regular meeting thereof, on the 25th day of March, 2020.

_____	_____
Laura Abele, Commissioner	Todd Citron, Commissioner
_____	_____
Bruce Ford, Commissioner	Leslie McRoberts, Commissioner
_____	_____
John Carter, Commissioner	Approved as to form District legal counsel

EXHIBIT "A"
LAKE WHATCOM WATER AND SEWER DISTRICT
DESIGN & CONSTRUCTION STANDARDS
MARCH 25, 2020

DESIGN & CONSTRUCTION STANDARDS

March 25, 2020

Lake Whatcom Water and Sewer District
1220 Lakeway Drive
Bellingham, WA 98229

(360) 734-9224

Available on the web at http://www.lwwsd.org

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CHAPTER 1 DRAWING STANDARDS

1.1 Construction Drawings

1.1.1 Format and Content

Construction drawings for proposed public water and/or sewer facilities shall be prepared in accordance with the following drawing standards and under the direction of a currently-licensed Washington State professional engineer (the Engineer of Record).

Format

- Drawings submitted for review: 50% reduced scale 11-inch x 17-inch sheets
- Final drawings submitted for approval: full scale 24-inch x 36-inch sheets
- Minimum text size 0.08-inch when plotted at full-scale size

Basic Drawing Elements

- North Arrow
- Scale Bar
- Legend (clearly differentiate between existing and proposed features)
- Vicinity Map
- Overall Project Map
- Vertical Datum and Project Benchmark Information
  All projects must be on NAVD88.
- Horizontal Survey Reference Point Information
  All projects must be based on NAD83 (1998) City of Bellingham monument-derived coordinates. Show bearing and distance information between survey reference points.
- Lake Whatcom Water and Sewer District General Notes. General Notes (all Projects) and Water System Notes, Sewer System Notes and/or Electrical, Telecommunication and Automatic Control Notes as appropriate.
- Lake Whatcom Water and Sewer District Standard Details as applicable for type of improvements

Scale for Plan and Profile Drawings

- 1-inch = 20-feet horizontal in areas with existing utilities or improvements
- 1-inch = 50-feet horizontal in areas with little or no existing utilities or improvements
- 1-inch = 2-, 5-, or 10-feet for vertical as appropriate

Topographic and Survey Information

- Right-of-Way (ROW)
- Easements (with Whatcom County Auditor parcel numbers)
- Contour intervals of 1 or 2 feet as appropriate for site and design
- Existing features and improvements such as pavement, concrete, gravel, sidewalks, curbs, utility poles, transformers, telephone pedestals, overhead and underground utilities.

Plans

- Proposed improvements clearly shown and noted
- Design alignment and stake out information (stationing, bearings, distances, and offsets)
- For water mains, lineal footage from water main fitting to fitting
- For sewer mains, lineal footage between exterior faces of manhole structures
- Pipe size and material type called out on each segment

Profiles

- All utility crossings with clearances noted
- Distances from centerline of manhole to manhole
- Distances from exterior face of manhole structure to manhole structure
- Calculated slope between exterior face of manhole structure to manhole structure (actual pipe slope)
- Rim and invert elevations for existing and proposed manhole structures
- Trench dams shown

1.1.2 Plan Review Sets

Submit to the Lake Whatcom Water and Sewer District (District) two (2) sets of 50% reduced-scale 11-inch x 17-inch drawings. If there are review comments, the District will return one redlined original set. For subsequent re-submittals, submit two (2) sets of 50% reduced-scale drawings.

1.1.3 Final Approval Sets

Once all District review comments have been addressed, the District will request three (3) full-scale sets to stamp "Approved for Construction." The District will retain two (2) sets and return one (1) approved set.

1.2 Record Drawings

1.2.1 Content

Record drawings shall include the exact, as-built, location of all water and sewer mains and services and the approximate location of all other underground and above ground utilities, and shall include information defined below.

Basic Information

- Each drawing shall include "Record Drawing" boldly noted on each sheet.
- Line-out design text that has changed and note record information.
- Circle plan design elements that changed and show record information.

Water Mains and Services

- Location of all vertical and horizontal bends in the water system. Stationing shall be along the length of the extension.
- Location of all water valves, hydrants, hydrant valves, and blow-offs with distance along centerline and distance from the centerline.
- Location of all utilities within easements. This includes distances to the utilities from the easement lines.

- Stationing of service taps on the main. Stationing shall be cumulative along the length of the extension.
- Distance from main to meter.
- Distance from tap to a point opposite (at 90 degrees) the meter along main, and station this point.
- Distance from this point on the main to the meter (distance at 90 degrees).
- Depth of all services.

Sewer Mains and Service Laterals

- Location of all sanitary sewer manhole structures, inverts, valves and cleanouts on the sewer main.
- Location of all vertical and horizontal bends in the force main system.
- Location of all service lateral saddles on the sewer main from the back-station manhole.
- Stationing of all sewer wyes into the main, located from the back station manhole.
- Length of service lateral/side sewer stub in lineal feet, and diameter of pipe.
- Distance along mainline from service lateral wye to where end equals 90 degrees from mainline.
- Distance from this point on the main to the end of stub (distance at 90 degrees).
- Depth of services at end of stub.
- Location of cleanouts on the sewer stub.

1.2.2 Construction Record Keeping

All District projects must have full time inspection. A District Inspector will document and maintain construction as-built information. It is the contractor's responsibility to ensure that the Inspector has all as-built information and measurements recorded prior to backfill of facilities. Contractor shall maintain a hard copy of project plans, with revisions accurately shown as constructed, on site throughout construction, and shall submit to the Engineer of Record at completion of the project.

1.2.3 Preparation

A copy of the District Inspector's notes and sketches will be given to the Engineer of Record for preparing the record drawings. For developer-constructed facilities, the developer's engineer shall prepare and stamp (current Washington State professional civil engineers license) the record drawings. For District-constructed facilities, the District's consulting engineer shall prepare and stamp the record drawings.

1.2.4 Review and Submittal Format

Submit one 50% reduced-scale 11-inch x 17-inch set to the District for review. Upon acceptance, the District will request final record drawings. Final record drawings shall include one full-scale set on Mylar, one full-scale set on paper, AutoCAD (.dwg) files, an electronic Adobe Acrobat (.pdf) file and Group 4 TIFF file.

1.2.5 Condition of Final Acceptance

Final record drawings must be received and accepted by the District before final acceptance of the project by the District Board of Commissioners.

CHAPTER 2 DESIGN STANDARDS

2.1 Water Projects

2.1.1 Minimum Design Requirements

Minimum design criteria, unless the District criteria are more stringent, shall be in accordance with the current edition of the "Water System Design Manual" published by the Washington State Department of Health (DOH) and Washington Administrative Code Chapter 246-290, Group A Public Water Supplies.

2.1.2 Minimum Pipe Size

Minimum pipe size for new or replaced water lines is eight (8) inches in diameter. Dead-end lines are not permitted unless allowed under conditions identified in the DOH Water System Design Manual. Blow-offs or fire hydrants shall be installed at low points and dead-ends in the distribution system.

2.1.3 Pipeline Velocity

The maximum velocity for water mains shall be 8 feet per second for all conditions. All mains, branches and dead ends shall be equipped with blowoffs and/or hydrants of adequate size and number to develop a flushing velocity in the main of at least 2.5 feet per second. The Engineer of Record shall consider minimum velocities in pipe sizing to avoid water quality concerns.

2.1.4 Comprehensive Plan Requirements

Water system construction and reconstruction shall be done pursuant to a design that, when fully implemented, will provide the flow requirements of the District's Water System Comprehensive Plan. Minimum pipe size shall be as identified by the District's Water System Comprehensive Plan. A latecomer's agreement may be created if the sizing is in excess of that required to serve the proposed development or that required by an associated utility local improvement district (ULID).

2.1.5 Minimum Allowable Pressure

The minimum pressures allowed by the District at any time are 30 pounds per square inch (psi) under peak hourly demand, or 20 psi under maximum day demand and fire flow combined.

2.1.6 Increases in Flow Requirements

When any new development increases the flow requirements, the developer shall be responsible for completion of all upgrades the existing water system to maintain system compliance with the above standards.

2.1.7 Providing for Future Extensions

Upon development, utilities shall be extended and/or replaced past or through their property to allow for future extension, expansion and continuation of the District's distribution system or for conformance with the District's Water System Comprehensive Plan.

2.1.8 Easements

A minimum ten (10) feet of recorded easement must be provided on each side of the pipe, for a total width of twenty (20) feet.

2.1.9 Valves

Valves shall be installed along the water main at intervals not to exceed 500 feet per National Fire Protection Association Standard 1142, Standard on Water Supplies for Suburban and Rural Fire Fighting, Annex G.7, Municipal-Type Water System. Gate valves shall be placed at all junction points, such that there are valves on each leg of a tee (3 valves), or cross (4 valves).

2.1.10 Fire Hydrants

Fire hydrants shall be installed at a minimum of every 600 feet of water main.

2.1.11 Sampling Stations

A minimum of one sample station per zone is required for each new pressure zone. The District, at its sole discretion, may require sample stations for new developments in existing pressure zones.

2.1.12 Separation from Sanitary Sewer Lines

Minimum separation of water lines and sanitary sewer lines shall be ten (10) feet horizontally for parallel pipe, and eighteen (18) inches vertically with the water line on top for perpendicular or oblique crossings, measured from the bottom of the water pipe to the crown of the sewer pipe. Situations occurring with less than the minimum separation as required shall be in accordance with Section C1-9.1, Required Separation Between Water Lines and Sanitary Sewers, of the current edition of the "Criteria For Sewage Works Design" published by the Washington State Department of Ecology.

2.1.13 Pipe Slope and Air/Vacuum Release Valves

Water mains shall be installed at an upward slope to a high point where a combination air/vacuum release valve shall be installed.

2.1.14 Water Booster Stations

All public/District-owned water booster stations shall have at least two pumps and a standby generator.

2.2 Sewer Projects

2.2.1 Minimum Design Requirements

Minimum design criteria, unless the District criteria are more stringent, shall be in accordance with the current edition of the "Criteria for Sewage Works Design" published by the Washington State Department of Ecology.

2.2.2 Minimum Pipe Size

Minimum pipe size for sewer gravity mains is eight (8) inches in diameter except that, in special cases, 6-inch diameter sewer lines may be approved by the District if they meet the Department of Ecology Guidelines for 6-inch diameter sewer lines. The minimum size for sewer laterals/side

sewers shall be six (6) inches in diameter from the sewer main to the property line. Minimum size pipe for District force mains shall be four (4) inches in diameter unless determined by the Engineer of Record, and approved by the District Engineer, that a smaller diameter must be used.

2.2.3 Providing for Future Extensions

Upon development, utilities shall be extended and/or replaced past or through their property to allow for future extension, expansion and continuation of the District's collection system or for conformance with District's Comprehensive Sewer Plan.

2.2.4 Easements

A minimum ten (10) feet of recorded easement must be provided on each side of the pipe, for a total width of twenty (20) feet.

2.2.5 Separation from Water Lines

Minimum separation of water lines and sanitary sewer lines shall be ten (10) feet horizontally for parallel pipe, and eighteen (18) inches vertically with the water line on top for perpendicular or oblique crossings, measured from the bottom of the water pipe to the crown of the sewer pipe. Situations occurring with less than the minimum separation as required shall be in accordance with Section C1-9.1, Required Separation between Water Lines and Sanitary Sewers, of the current edition of the "Criteria for Sewage Works Design" published by the Washington State Department of Ecology.

2.2.6 Manholes

Manholes shall be installed in accordance with the District's Standard Details and Section C1-1.6, Manholes Design and Construction, of the current edition of the "Criteria for Sewage Works Design" published by the Washington State Department of Ecology. Manholes shall be placed at each grade and direction change. Distances between manholes shall not exceed 350 feet. Manholes shall be a minimum of five (5) feet deep to the invert of the pipe. Manholes shall be installed at the end of each line of 8-inch diameter or greater. Cleanouts shall only be used on 6-inch diameter or smaller lines, and shall be located not more than 150 feet from a manhole.

2.2.7 Manhole Drop Connections

An outside drop connection shall be provided for a sewer line entering a manhole at an elevation of 24 inches or more above the manhole invert. Inside drops may be used only at the discretion of the District and only on existing manholes.

2.2.8 Corrosion Resistant Manholes

Corrosion resistant manholes shall be constructed at force main terminations, as well as two manholes downstream and one manhole upstream of force main terminations. Corrosion resistant manholes shall also be constructed in areas with steep slopes downstream of any force main discharges, where directed by the District Engineer. All coatings shall be applied in accordance with manufacturer's instructions.

Base sections, risers, eccentric reducers, and flat slab tops of new manholes shall be shop-coated. A minimum of two coats of System A Epoxy shall be field-applied to the invert, the finished grade rings, any metallic pipe extending into the manhole, and any damaged shop-coated

sections. All grout and cement mortar shall be allowed to cure a minimum of 28 days prior to applying the coating system. Surfaces shall be prepared and epoxy applied in accordance with the coating manufacturer's instructions. Coatings shall be pinhole free with a minimum dry film thickness of 60 mils. The required temperature and humidity shall be maintained for the duration of the curing period.

Existing manholes to be coated:

1. Water blast or sand blast (per manufacturer's recommendations) existing manhole surfaces to be coated. Remove all grease, laitance, and deleterious materials from the concrete surfaces. Seal off the flow line, as required, to maintain flows while keeping debris out of the sewer. Dry the manhole surfaces to meet manufacturer's requirements. Apply coating in accordance with the coating manufacturer's requirements.
2. If, in the opinion of the District, the existing manhole surfaces are unsuitable for service as corrosion resistant manholes, replace the manhole with new corrosion resistant manholes at no cost to the District.

2.2.9 Grinder Pump Systems

Grinder pump systems, where approved for use by the District Engineer (Section 5.2.2), shall use a minimum of one grinder pump system for each lot served. Each system shall serve no more than once (1) single-family home with an accessory dwelling unit located on the same lot. No more than one residential duplex shall be served by a single grinder pump system. A residential triplex shall be served by a, minimum, duplex grinder pump system or two simplex systems. The grinder pump system shall comply with Washington State Department of Labor & Industries requirements regarding intrinsically safe electrical equipment.

2.2.10 Pretreatment Systems

Pretreatment system may be required to reduce, eliminate or alter the nature of a pollutant's properties prior to discharging to the public sewer collection system. Pretreatment systems include grease interceptors, oil/water separators, and other units to treat metals, solvents, excessive BOD or total suspended solids, and other constituents.

The District reserves the right to evaluate a waste stream prior to connection and require pretreatment to comply with waste discharge criteria and limits established by District resolution.

Grease Interceptors

Any business involved in the process, preparation, sale, or packaging of human or animal food requires that an exterior (outside) grease interceptor be installed on a separate side sewer main. This separate side sewer shall be connected directly, and only, to the food handling areas in the building, with no sanitary connections permitted upstream of the grease interceptor.

Grease interceptors shall comply with the current version of the Uniform Plumbing Code and the Uniform Building Code. The design capacity of the grease interceptor shall be determined by the formula(s) provided in the Uniform Plumbing Code (Appendix H of the Uniform Plumbing Code).

Precast concrete grease interceptors shall be designed for a soil dead load of 150 lbs/cu. ft. and an AASHTO H-20 live load as manufactured by Utility Vault or equivalent.

Oil/Water Separators

Oil/water separator design and sizing shall conform to the Washington State Department of Ecology's Best Management Practices (BMP) for Stormwater Treatment. The separator shall be an American Petroleum Institute (API) or Coalescing Plate Interceptor (CPI).

Oil/water separators shall be designed for a soil dead load of 150 lbs/cu. ft. and an AASHTO HS-20 live load.

Oil/water separators shall include a forebay to collect floatables and large settleable solids with a surface area not less than 20 sq. ft. per 10,000 sq. ft. of area draining into the separator.

2.3 Electrical, Telecommunication and Automatic Control

2.3.1 Section Application

The requirements in this section apply to District capital projects and Developer Extension Agreement (DEA) projects as defined in the District Administrative Code Section 3.1.17, that modify or install new electrical, telecommunication and/or automatic control components as may be required by either, District Standards, the current edition of the "Water System Design Manual" published by the Washington State Department of Health and Washington Administrative Code Chapter 246-290, Group A Public Water Supplies, the current edition of the "Criteria for Sewage Works Design" published by the Washington State Department of Ecology, or other regulating agency.

2.3.2 Minimum Electrical Design Requirements

Provide all electrical work and materials in accordance with the latest edition of the National Electric Code (NEC), National Electric Safety Code, Washington State Electrical Code and local regulations and ordinances.

2.3.3 Minimum Electrical Service Requirements

The project electrical service shall be configured, or reconfigured, for minimum 277/480 Volt, three-phase, underground power service, in conduit, meeting the requirements of the Electrical Power Provider. All electrical service costs, including all costs associated with reconfiguration and additions to existing facilities, shall be part of the Project cost.

2.3.4 Minimum Telecommunication Service Requirements

The project shall provide underground telecommunication service, in conduit, to the project telecommunication service box. All telecommunication service costs, including all costs associated with reconfiguration and additions to existing facilities, shall be part of the Project cost.

2.3.5 Minimum Automatic Control Requirements

The project shall provide automatic controls using programmable logic controllers at the Project site and additions to a stand-alone computer-based telemetry, control and data logging system owned, operated and maintained by the District. Programmable logic controller (PLC) shall provide local, automatic control of pumps and other equipment at the project site. A computer-based telemetry system shall provide remote control, alarm presentation and data logging activities at the District's headquarters location.

Contractor shall use a District-approved 'panel shop' to design, program, furnish and integrate the system, including but not limited to; provide the instruments panels, provide the PLC(s), control panels and all other instrument system components and integration.

District-approved Panel Shops:

- Quality Controls Corporation – Lynnwood, Washington
- Systems Interface, Inc. – Bothell, Washington
- Technical Systems, Inc. – Lynnwood, Washington

2.3.3 Permits and Testing

The Project developer/contractor shall obtain all permits, licenses, approvals and inspections by the Authority Having Jurisdiction and provide all other arrangements for the work on the Project. Test all circuits for continuity, freedom from ground and proper operation during progress of work. Test Reports on all equipment shall be submitted to the Engineer prior to acceptance. Conduct final testing in the presence of the engineer. All fees shall be part of the Project cost.

2.3.4 Products

All electrical products shall bear a label from a certified testing laboratory recognized by the State of Washington. Recognized labels in the State of Washington are UL, ETL and CSA-US.

PLC components shall be Allen-Bradley, ControlLogix, no substitutions.

Automatic system components, programming and integration are not fully detailed. The District's construction documents (plans and specifications) for the District's most recent capital projects will be used to establish minimum standards for DEA project requirements.

2.3.5 Conduits and Fittings

Galvanized rigid steel (GRS) conduit shall be used in and below all building, structures, in concrete, in corrosive areas, and all other locations, except as noted below. GRS conduit shall be steel, hot dipped galvanized inside and out. The GRS must meet USA Standards Institute C80-1 Underwriters Laboratories Standard UL6, and carry a UL label. Use cast threaded hub fittings and junction boxes for all rigid conduit except in locations not permitted by the NEC.

> *Exception: PVC Schedule 80 conduit, in contact with the earth, may be used with power circuits only, when further than 10-feet from the closest point, measured horizontally, from any structure, including but not limited to manholes, wetwells, concrete pads, etc. The only exception shall be concrete electrical vaults or hand-holes. Conduit shall be gray in color. Fitting shall be of the same material as the raceway and installed with solvent per the Manufacturer's instructions. Conduits, fittings and solvent shall all be manufactured by the same manufacturer.*

GRS conduit shall be used for all instrumentation (signal) circuits.

All underground elbows 90-degrees and greater, including elbows connecting to PVC Schedule 80 conduit, shall be GRS.

Flexible metal conduit shall be used for all final connections to motors and vibrating equipment. Flexible conduit shall be interlocking single strip, hot dipped galvanized and shall have a polyvinyl chloride jacket extruded over the outside to form a flexible watertight raceway. Flexible conduit shall be American Brass Company Sealtite Type VA, General Electric Type UA or equal.

Electrical and power conduit number and size vary per Project requirements. Maintain 12-inch minimum spacing between telemetry and other conduits.

CHAPTER 3 CONSTRUCTION STANDARDS—GENERAL

3.1 Construction Plan Notes

The General Notes apply for all new public facility construction within the District and shall be included in every construction plan set. Water System Notes, Sewer System Notes and Electrical Project Notes shall be included in the plan set as relevant for the type of construction project.

3.1.1 General Notes

See District Standard Detail G1 for General Notes to be included in construction plans.

3.1.2 Water System Notes

See District Standard Detail W1 for Water System Notes to be included in construction plans.

3.1.3 Sewer System Notes

See District Standard Detail S1 for Sewer System Notes to be included in construction plans.

3.1.4 Electrical Project Notes

See District Standard Detail E1 for Electrical Project Notes to be included in construction plans.

3.2 Inspection Requirements

Unless previously authorized by the District, work on water and/or sewer mains/lines shall not proceed without a District Inspector being present. The District may refuse acceptance of any water and/or sewer mains/lines installed without District inspection. To schedule an inspection, the District must receive a hard copy of the construction schedule and a request for inspection at least two (2) full working days before construction activities covered by the schedule begins. The District must be kept advised of changes to the construction schedule. When significant breaks in construction occur, the contractor must provide two (2) full working days' notice before resuming work. The District Inspector shall have the authority to reject defective material and to suspend any work that is not conducted in accordance with these Construction Standards.

Authority of the Engineer, its appointees, assistants and inspectors, shall be per WSDOT 1-05.1. All references to the Engineer or District Engineer shall also mean its appointees, assistants or inspectors as per WSDOT 1-05.2.

All mains shall be inspected by the District Engineer before closure of any excavation. Inspectors will be provided access to work sites, as necessary, to keep the District informed of the progress of work and the manner in which it is being done, to keep records, to act as liaison between the contractor(s) and the District, and to report any deviations from District-approved plans or specifications. Failure of the Inspector to call the attention of a contractor to faulty work or deviations from the plans, specifications, or these Construction Standards shall not constitute acceptance of work.

Any personal assistance which a District Inspector may provide a contractor will not be construed as the basis of any assumption of responsibility in any manner, financial or otherwise, by the Inspector, the Engineer, or the District.

The presence or absence of a District Inspector on any job will be at the sole discretion of the District. Such presence or absence of an Inspector will not relieve a contractor of responsibility to deliver the construction results specified in the District-approved plans or specifications, or these Construction Standards.

District Inspectors will not be authorized to issue instructions or to approve or accept any portion of the work that is contrary to the District-approved plans or specifications, or these Construction Standards. Approvals, acceptances, or instructions, when given, must be in writing and signed by the District Engineer or their designated representative. Inspectors have authority to reject defective material. The failure of an Inspector to reject defective material or any work that deviates from the District-approved plans or specifications, or these Construction Standards, will not constitute acceptance of such work

3.3 Surveying and Staking

Lots and/or property lines shall be surveyed and staked to ensure water and sewer services are installed within the property, recorded easements, and/or right-of-ways. Surveying and staking are the responsibility of the property owner and contractor.

3.4 Excavation Safety

Where shoring, sheet piling, sheeting, bracing, lagging, or other supports are necessary to prevent cave-ins or damage to existing structures, it shall be the responsibility of the contractor to design, furnish, place, maintain, and remove supports in accordance with applicable laws, codes, and safety requirements, including Chapter 296-155 of the Washington Administrative Code, A Safety Standards for Construction Work, Part N, Excavation, Trenching, and Shoring. Design, planning, installation, and removal of sheeting, shoring, piling, lagging, and bracing shall be accomplished in such a manner as to maintain the undisturbed state of soil below and adjacent to excavation. Failure to maintain shoring in accordance with the submitted shoring plan will result in shut down of the job by the District until required shoring is in place.

CHAPTER 4 CONSTRUCTION STANDARDS—WATER PROJECTS AND WATER SERVICES

4.1 General Requirements

4.1.1 District Water Permit

A District water permit is required prior to installation of a water service.

4.1.2 Construction Standards and Uniform Plumbing Code

All water project improvements shall be installed per the District Construction Standards. Water service lines shall be installed per the Uniform Plumbing Code (UPC), to the edition, amendments, standards and exemptions adopted by Whatcom County, as detailed in the most current edition of the Whatcom County Code, Chapter 15.04, Building Codes.

4.1.3 Easements

Water services shall be installed solely on the property being served and/or within appropriate recorded easements and rights-of-ways.

4.1.4 Developer Extension Agreement Projects

The developer is responsible for installing the water service from the water main to property line for new main construction. The property owner is responsible for installing water service from property line to building. The developer will provide the District with the meter assemblies specified by the District. The District will install meter assemblies following property owner request for service and after all permits and connection fees are paid in full.

4.1.5 Installation, Maintenance, & Repair

The property owner is responsible for service line installation, maintenance and repair from the meter to the building. For new services, the District will tap the water main, install a service saddle, corp stop, service line, meter assembly and meter box.

4.1.6 Separation from Side Sewer Services

Per the UPC Section 720.1, water pipes shall not be located within the same trench as a side sewer pipe unless: 1) the bottom of the water pipe shall be not less than 12-inches above the top of the side sewer pipe, 2) the water pipe shall be placed on a solid shelf excavated at one side of the common trench with a clear horizontal distance of not less than 12-inches from the sewer pipe, and 3) water pipes crossing a sewer pipe must be placed not less than twelve (12) inches above the sewer pipe.

4.1.7 Pressure Reducing Valves

It is the responsibility of the property owner to supply and install a pressure reducing valve (PRV) for their service. Pressure reducing valves shall be installed downstream of the meter and dual check valve directly behind the meter box. Property owners that elect not to install a PRV must record a hold harmless agreement with the Whatcom County Auditor before the District will provide service. Hold harmless agreements are available at the District office.

4.1.8 Privately-owned Water Booster Systems

Privately-owned water booster systems are not allowed as a means of obtaining water service where the pressure at the service's meter is recorded below 30 psi. The only exceptions are certain existing Sudden Valley lots covered by District Resolution No. 410 and other specific areas approved by the District's Board of Commissioners. Each application is subject to cross-connection control analysis by the District. Booster pump installations will be required to install a reduced pressure backflow device.

4.1.9 Inspections

The District must inspect and approve the PRV prior to occupancy.

CHAPTER 5 CONSTRUCTION STANDARDS—SEWER PROJECTS AND SEWER SERVICES

5.1 General Requirements

5.1.1 Contractor Requirements

Contractors installing side sewer services shall have a current Sewer Services Contractor's Certification Agreement and surety bond on file at the District.

5.1.2 Construction Standards and Uniform Plumbing Code

All sewer project improvements shall be installed per the District Construction Standards. Sewer service lines shall be installed per the District Construction Standards and the Uniform Plumbing Code (UPC), to the edition, amendments, standards and exemptions adopted by Whatcom County, as detailed in the most current edition of the Whatcom County Code, Chapter 15.04, Building Codes.

5.1.3 District Sewer Permit

A District sewer permit is required prior to installation of any side sewer service. Main line sewer shall be in use and operational before the sewer permit will be issued.

5.1.4 Easements

Side sewer services shall be installed on only the property being served and/or within appropriate recorded easements and rights-of-ways.

5.1.5 Authorization to Connect to Sewer Main

The contractor shall connect the side sewer service to the sewer main at the location identified and authorized by the District. The contractor shall schedule and attend an onsite pre-construction meeting with the District to obtain authorization to connect prior to side sewer installation.

5.1.6 Other Permits

The contractor shall obtain and abide by encroachment permits or other permissions which may be required from Whatcom County, Sudden Valley Community Association, or other entity having jurisdiction over roads and streets, prior to commencing sewer service work. Restoration shall be done in a manner approved by the appropriate jurisdiction.

5.1.7 Ground and Surface Water Drain Connections Prohibited

No downspouts, footing drains, foundation/crawl space sump pumps, yard drains, or any other source of ground or surface waters are allowed to connect to a side sewer or other sewer main or appurtenance.

5.2 Side Sewer Services into Gravity Mains

5.2.1 Installation, Maintenance, & Repair

The property owner is responsible to contract with a contractor on the current District's Bonded Side Sewer Contractor list. The contractor shall install the side sewer service from the sewer main to the building, which includes connecting to an existing service tee, or installing a new service tee when approved by the District Engineer, on the District sewer main, installing a cleanout at the property line and additional cleanouts per the District Standard Drawings, the private service line to the building, and restoration per the District Standard Drawings.

The property owner is responsible for maintenance and repair of the side sewer service from the cleanout at the property line to the building, as well as any blockages of the sewer lateral between the sewer main and property line.

5.2.2 Grinder Pumps

Grinder pumps may be installed in such special circumstances where installation of a gravity system is not possible. The District must authorize the use of a grinder pump system prior to installation. Grinder pump design shall be in accordance with Sections C1-10.1 and C1-10.2 of the current edition of the "Criteria for Sewage Works Design" published by the Washington State Department of Ecology and District Standard Drawings.

The contractor shall be responsible for removing groundwater to provide a firm, dry subgrade for the structure, and shall guard against flotation or other damage resulting from ground water or flooding. The grinder pump station shall not be set into the excavation until the installation procedures and excavation have been inspected and approved by the District.

The grinder pump station shall include a standard, 4-inch diameter inlet grommet for inlet piping. The contractor shall not insert inlet piping beyond the factory-approved "stop." The basin may not be dropped, rolled, or laid on its side for any reason.

Installation shall be accomplished so that 1- to 3-inches of access way, below the bottom of the lid, extends above the finished grade line. The finished grade shall slope away from the unit. The diameter of the hole shall be large enough to allow for the concrete anchor.

A 6-inch minimum layer of naturally rounded aggregate, clean and free flowing, with particle size of not less than ⅛-inch or more than ¾-inch shall be used as bedding material under each unit. A concrete anti-flotation collar and sized according to manufacturer's instructions, shall be pre-cast to the grinder pump or poured in-place. The grinder pump station, with its anti-flotation collar, shall have a minimum of four lifting eyes for loading and unloading purposes. The unit shall be leveled and filled with water to the bottom of the inlet to prevent the unit from shifting while the concrete is poured. The concrete must be manually vibrated to ensure there are no voids. If it is necessary to pour the concrete to a higher level than the inlet piping, an 8-inch sleeve is required over the inlet prior to the concrete being poured.

Backfill of clean, native earth, free of rocks, roots, and foreign objects shall be thoroughly compacted in lifts not exceeding 12 inches to a final Proctor density of not less than 85%. Improper backfilling may result in damaged access ways.

The electrical control panel shall be installed and wired to the grinder pump station by the contractor using the factory supplied length of 6 conductor, 12 gauge TC-type cable, which shall be installed in Schedule 40 PVC continuous conduit and burial depth shall comply with local codes.

Polyethylene pressure pipe joints shall be flanged, thermal fusion butt welds or made using weld-on compression couplings. Joints in 1.25- to 2-inch diameter pipe shall be made only at pump basins, valves, fittings, and changes in pipe diameter. For pipes larger than 2-inches in diameter, joints between pipe sections shall be thermal fusion butt-welded. All flanges and fittings shall be thermal fusion butt-welded to the pipe. Operators of fusion welding equipment shall be trained and certified by the pipe manufacturer.

5.2.3 Pre-Construction Meeting

The contractor shall schedule a pre-construction meeting with the District prior to beginning construction. At the pre-construction meeting, the District will approve the contractor's side sewer alignment, and authorize the side sewer/sewer lateral alignment, the location of the grinder pump (if applicable), and the approximate location of either: connection to the sewer main, connection to a sewer stub that may have been previously extended to a property line, or connection to a lateral used by an adjacent property that was constructed to allow joint use of the lateral and future connection.

5.2.4 Inspections

The District must inspect all side sewer services prior to backfill. Services backfilled without an inspection shall be re-exposed and the full length tested at contractor's expense prior to District approval.

Bedding & Backfill Inspection. The entire sewer service pipe from the main to the cleanout adjacent to the building must be inspected and approved by the District prior to backfill. Pipe backfilled before inspection will be rejected.

Leak Test. The contractor shall fill the service line with water from a plug inserted in the cleanout at the property line up to the cleanout at the building. The line must hold water with no visible drop in elevation over a period of a minimum of five (5) minutes to pass. The test shall be observed by the District after all lines have been backfilled.

Grinder Pump Inspection (if applicable and allowed by the District). The private grinder pump station may be located inside or outside of the building. If located inside the building, the installation shall be subject to inspection by the Whatcom County Building Official (or his or her designee). If located outside of the building, the grinder pump station shall be subject to inspection by the District.

5.3 Pressure Side Sewer Services into Force Mains

5.3.1 Design

The property owner is responsible for the design of the pressure side sewer service installation, including the grinder pump station at the building, for systems connecting to District force mains. The property owner shall engage a civil engineer licensed in the State of Washington to prepare hydraulic calculations, determine pipe size, determine air release and air vacuum valve

requirements, and select the appropriate model of grinder pump for the specific installation. Grinder pump design shall be in accordance with Sections C1-10.1 and C1-10.2 of the current edition of the "Criteria for Sewage Works Design" published by the Washington State Department of Ecology.

The private grinder pump package shall consist of at least a grinder pump, basin, cover, check valve, controls, and interior and exterior visual and audible alarms (with battery backup for high level alarm), provided by Environment-One (E-One Model D Series Package Grinder Pump System).

Where required, air relief and combination air relief/vacuum relief valves shall be manufactured by Orenco, APCO, Crispin, or equivalent approved by the District, for sewer service, and installed per the manufacturer's directions. All valves shall be fully accessible to enable the property owner's operation, maintenance, and repair.

5.3.2 Developer Extension Agreement Projects

The developer is responsible for installing the customer service shutoff valve, check valve, check valve vault, and service line from the main to check valve for new sewer side service construction.

5.3.3 Installation, Maintenance and Repair

The property owner is responsible for installation, maintenance, and repair of the side sewer service from the property line to the building, including the grinder pump station, check valve, and check valve vault.

For individual permits, the District shall tap the force main and install the saddle, customer service shutoff valve, service line to the property line and check valve assembly at property line (note for developer extension agreements, the developer installs these items during construction of the new main). The developer shall be responsible for reimbursement of District labor, equipment, and material costs, as defined in the District's current Master Fees and Charges Schedule, for connection to the force main.

5.3.4 Pre-Construction Meeting

The contractor shall schedule a pre-construction meeting with the District prior to beginning construction. At the pre-construction meeting, the District will authorize the side sewer alignment and the location of connection to the main or sewer lateral near the property line.

5.3.5 Inspections

The District must inspect all side sewer services prior to backfill. Services backfilled without an inspection shall be re-exposed and the full length tested at contractor's expense prior to District approval.

Bedding & Backfill Inspection. Sewer service pipe from the main to the cleanout adjacent to building must be inspected and approved by the District prior to backfill.

Pressure Test. With all joints exposed, the District must witness a successful hydrostatic pressure test in accordance with Washington State Department of Transportation (WSDOT)

Section 7-09.3(23) at 150 psi for all pipe and fittings between the grinder pump and the customer service shut-off valve.

Grinder Pump Inspection. The private grinder pump station may be located inside or outside of the building. If located inside the building, the installation shall be subject to inspection by the Whatcom County Building Official (or his or her designee). If located outside of the building, the grinder pump station shall be subject to inspection by the District.

Start-up and Testing. The private grinder pump station shall be commissioned and tested for proper operation prior to submittal of a request for final inspection. At the final inspection the District will witness proper operation of the station as demonstrated by a trained professional.

Final Inspection. Startup/testing must be complete for final inspection.

5.4 Sewer System Appurtenances

5.4.1 Grease Interceptor and Oil/Water Separator Installation

The building sanitary side sewer shall be connected to the service lateral at least four (4) feet downstream from the interceptor providing the slope of the lateral is 2 percent or more. For laterals with a slope of less than 2 percent, the connection point shall be a minimum of eight (8) feet downstream of the separator, or directly connected to the District main.

Grease interceptors or oil/water separators may be installed in either planter or vehicle areas. In vehicular areas, the unit shall be constructed as to provide AASHTO H-20 live load capabilities. In all cases the installation site shall provide and ensure ease of access, maintenance, and visual inspection and will be provided with a hinged, locking hatch.

A manhole shall be installed where the grease interceptor or oil/water separator discharges into the District's sanitary sewer for monitoring purposes or at an upstream location approved by the District. If physical conditions preclude the installation of a monitoring manhole on the District main, the contractor shall install, with District approval, an Inspection Chamber as manufactured by Pacific North Marketing Ltd, Abbotsford, British Columbia, or equivalent.

CHAPTER 6 CONSTRUCTION STANDARDS—DETAILS

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GENERAL NOTES

1. All work and materials shall meet the requirements of the most current editions of the Lake Whatcom Water and Sewer District (District) Design and Construction Standards, Lake Whatcom Water and Sewer District Construction Contract Documents and Project Specifications (for Public Works Projects), the instructions and recommendations of the Manufacturer of the material concerned and select specifications within the Standard Specifications for Road, Bridge and Municipal Construction as prepared by Washington State Department of Transportation (WSDOT) and with all other regulatory agency requirements and permits including but not limited to work within Whatcom County right–of–way shall meet Whatcom County (County) design and construction requirements. In case of a conflict between the above standards, the more stringent shall apply. All work and materials shall be subject to the approval of the District Engineer.

2. Contractor shall obtain encroachment permits or other permissions which may be required from the County, Sudden Valley Community Association, or other entity having jurisdiction over roads and streets, prior to commencing work.

3. Contractor shall provide and maintain all Temporary Erosion Control and Sedimentation (TESC) in accordance with the most current edition of the Storm Water Management Manual for Western Washington (SWMMWW), Volume II, by the Washington State Department of Ecology, Publication Number 14–10–055. Contractor shall use required and necessary Best Management Practices (BMPS) described therein and as may be further described or detailed on the project drawings.

4. Contractor shall call 1–800–424–5555 48 hours before construction for utility locations. Contractor shall not begin excavation until utility notification period is complete.

5. A preconstruction meeting is required with the District and Contractor performing the work a minimum of 2–days before the start of construction.

6. Authority of Engineer, its appointees, assistants and inspectors, shall be per WSDOT 1–05.1. All references to the Engineer or District Engineer shall also mean its appointees, assistants and inspectors as per WSDOT 1–05.2.

7. The Contractor shall be responsible for the safety of all workers and shall comply with all appropriate state safety and health standards, codes, rules, and regulations, including, but not limited to, those promulgated under the Washington Industry Safety and Health Act RCW 49.17 (WISHA) and as set forth in Title 296 WAC (Department of Labor and Industries). In particular the Contractor's attention is drawn to the requirements of WAC 296.800 which requires employers to provide a safe and healthful workplace.

8. Inspection of work and materials shall be in accordance with WSDOT 1–05.6. Removal of unauthorized or defective work shall be in accordance with WSDOT 1–05.7.

9. The Contractor shall take all steps necessary to ensure that the existing facilities remain fully operational during all stages of construction, including but not limited to providing bypass pumping, standby storage, emergency generators and pump trucks, as necessary during service interruptions or outages.

10. No inspections or tie–ins to District's facilities shall be performed on a Friday, Weekend or District Holiday.

11. All pipe shall be bedded in bedding material meeting the requirements of WSDOT 9–03.12(3). The bedding cross–section shall be blocked with Control Density Fill (CDF) per WSDOT 2–09.3(1)E a minimum of every 800 feet and the trench drained to daylight or to a storm drain in accordance with District Standard Detail G11.

12. Backfill above the pipe zone bedding within County ROW, within the roadway section or at driveway crossings shall consist of crushed surfacing top course material meeting the requirements of WSDOT 9–03.9(3). Backfill within private roadways shall consist of material meeting the requirements of WSDOT 9–03.19. Backfill in other areas shall consist of material meeting the requirements of WSDOT 9–03.15, except as shown on the plans or details. Backfilling of trenches shall be in accordance with WSDOT 7.08.3(3).

13. Pea gravel shall not be used for pipe bedding or trench/excavation backfill material. The District may approve limited use of pea gravel where hazardous site conditions exist that pose an immediate threat to workers or public. Pea gravel, if approved for use by the Engineer, shall be a clean mixture free from organic matter meeting the following gradation (passing by weight a US standard sieve); 100% passing 1/2", 95–100% passing 3/8", 0–10% passing #8, and 0–3% passing #200.

14. Backfill shall be compacted to minimum 95% modified Proctor within traffic areas and minimum 90% modified Proctor in landscape and open areas.

15. Tracer wire installation is required on all District owned pipe, electrical conduits and communication lines/conduits. Tracer wire is also required on private side sewers. Install tracer wire per District Standard Detail E6. In addition to tracer wire, install 2–inch wide detectable marking tape 8 to 12 inches below the finish surface. Detectable marking tape shall meet the requirements of WSDOT 9–15.18 and be color coded blue for water, green for sewer, red for electrical and orange for telecommunication.

16. Public water lines and any sanitary sewer line or other non–potable conveyance system shall maintain a minimum of 10–feet horizontal separation (parallel alignment) and a minimum 18–inch vertical separation (parallel alignment and crossings at angles including perpendicular with the sewer line below the water line), measured as the closest distance between outside of pipes, in accordance with the most current editions of the Washington State Department of Health (DOH) Water System Design Manual Section 8.4.4 and the Department of Ecology (DOE) "Criteria for Sewage Works Design" Section C1–9.

When local conditions prevent these separations, with the approval of the District Engineer, installations shall follow the requirements outlined for unusual conditions in the referenced DOH and DOE manuals which includes details for specific pipe materials, pipe segment lengths, joint separation requirements, concrete encasement and/or pipe casings. If a pressure sewer cannot be installed with a minimum 18–inch separation from a water line at a crossing, then the pressure sewer shall be constructed only under the water line with ductile iron pipe or standard sewer pipe in a casing (casing material per the DOE manual) extending at least 10–feet on each side of the crossing.

17. Control Density Fill (CDF), if required, shall meet the requirements of WSDOT 2–09.3(1)E.

18. From the main to the property line, sewer pipes and water pipes shall maintain a minimum horizontal separation of 10–feet. When local conditions prevent the 10–feet separation, separation shall be per District Standard Detail G10, Water Line and Sewer Line Trench Detail, Unusual Conditions. Separation of water service lines and sewer pipes within private property shall be per District Standard Detail G9.

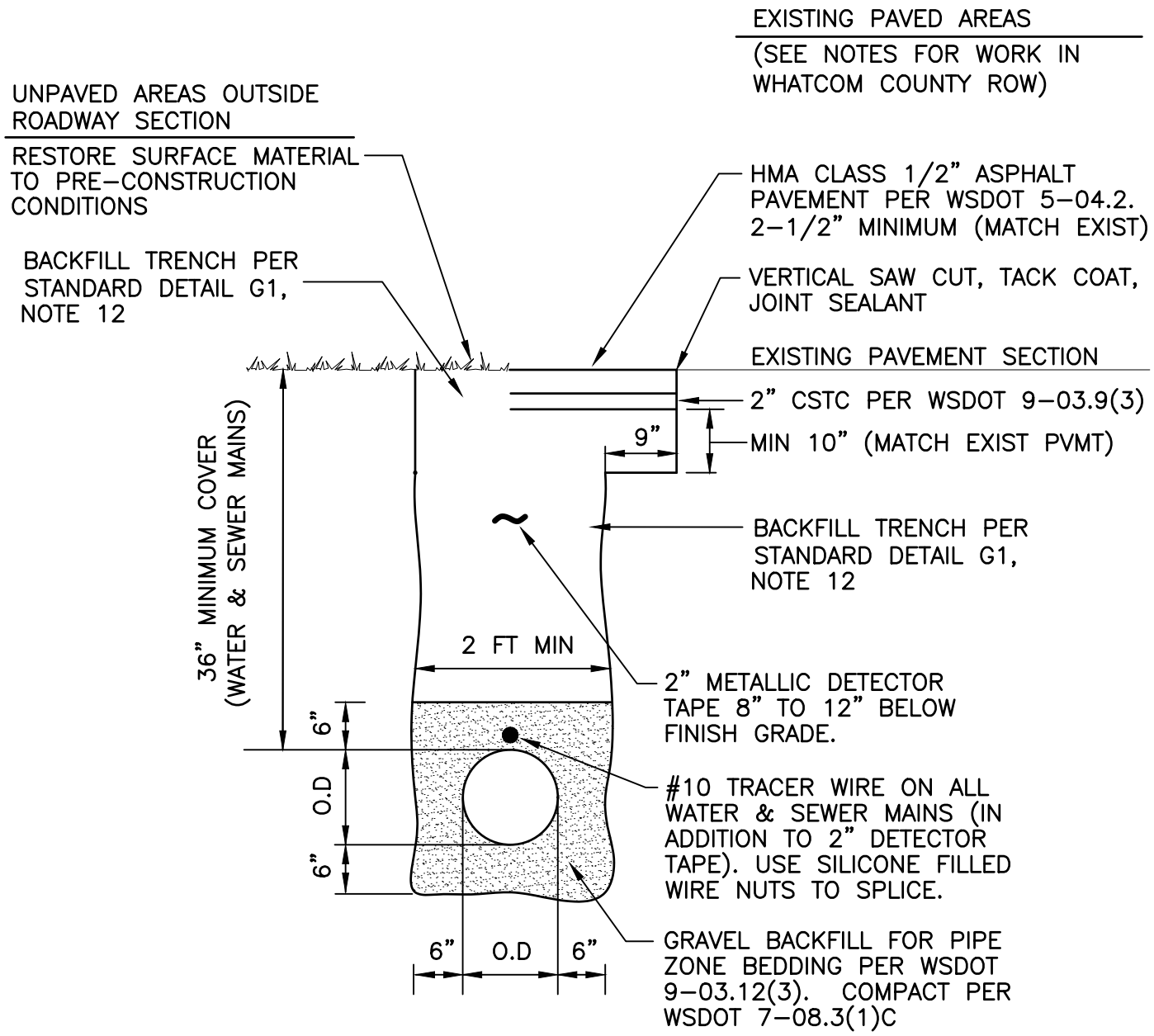
19. Contractor shall remove all debris and excess excavation; repair all damage, and restore the site, public or private, to pre–construction conditions.

20. Where mains or service lines are placed within a ditch area, the buried depth shall be at least 30–inches below the bottom of the ditch, measured from the crown of the pipe to the bottom of the ditch.

21. All work within Whatcom County Right Of Way (ROW) shall meet the requirements of the most current edition of the Whatcom County Development Standards, Section 512.

22. The Lake Whatcom Water and Sewer District is located within the Lake Whatcom Watershed where seasonal clearing activity limitations established by Whatcom County Code 20.51.410 are in force. Clearing activity, which includes trench excavation/backfill and other land disturbance, that will result in exposed soils exceeding 500 square feet are not permitted from October 1 through May 31.

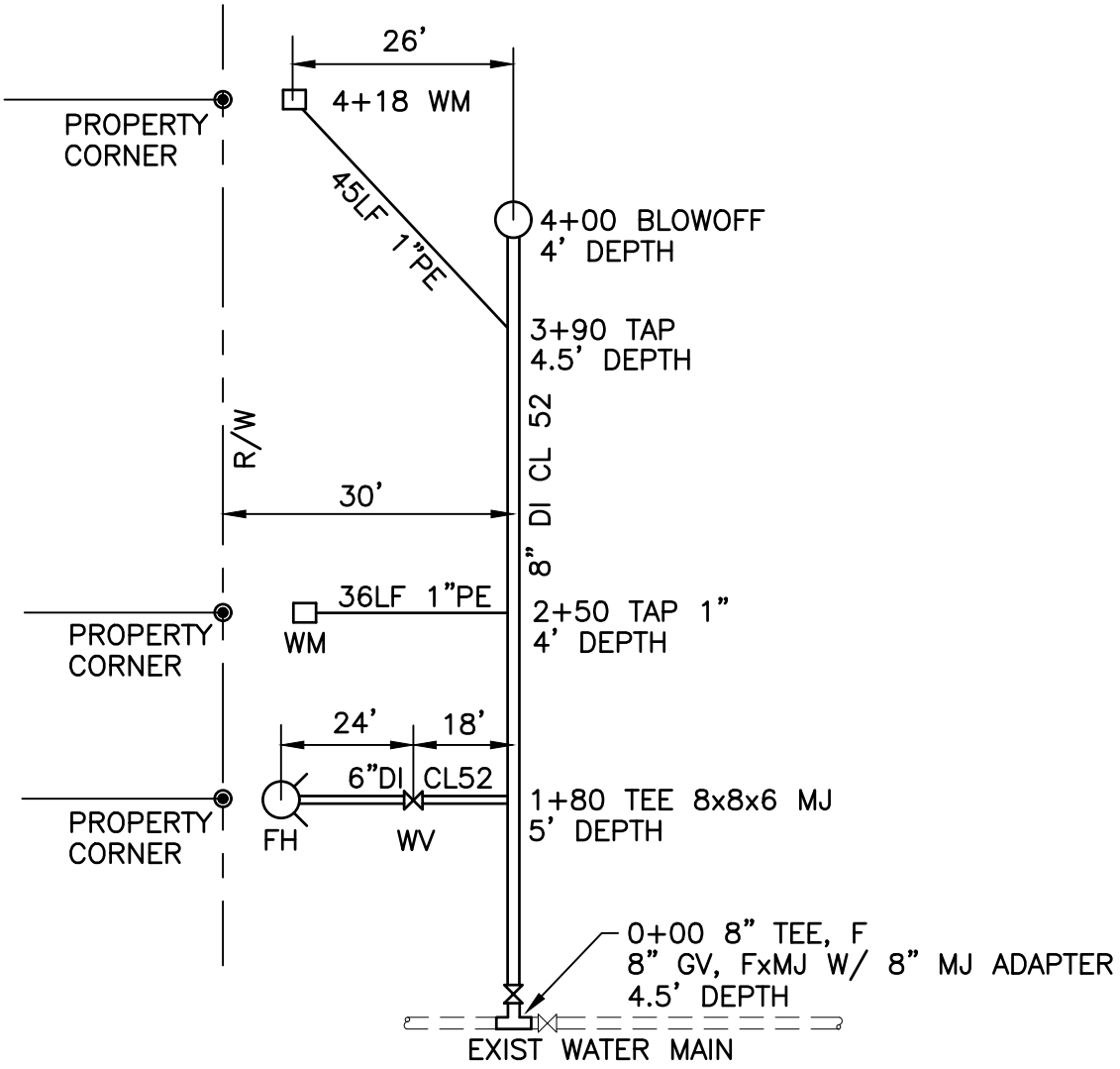
23. References to the Uniform Plumbing Code (UPC) shall be to the edition, amendments standards and exemptions adopted by Whatcom County, as detailed in the most current edition of the Whatcom County Code, Chapter 15.04, Building Codes.



NOTES:

1. With respect to trench repairs and pavement overlays, in the event of conflict between this detail and Whatcom County Standard Drawing Numbers 512.F-1 and 512.F-2, the more stringent standard shall apply.

2. Standard utility locations within county-maintained public road prisms as shown in the 2012.09.25 version of Whatcom County Standard Drawing No. 512.D-1 shall apply.



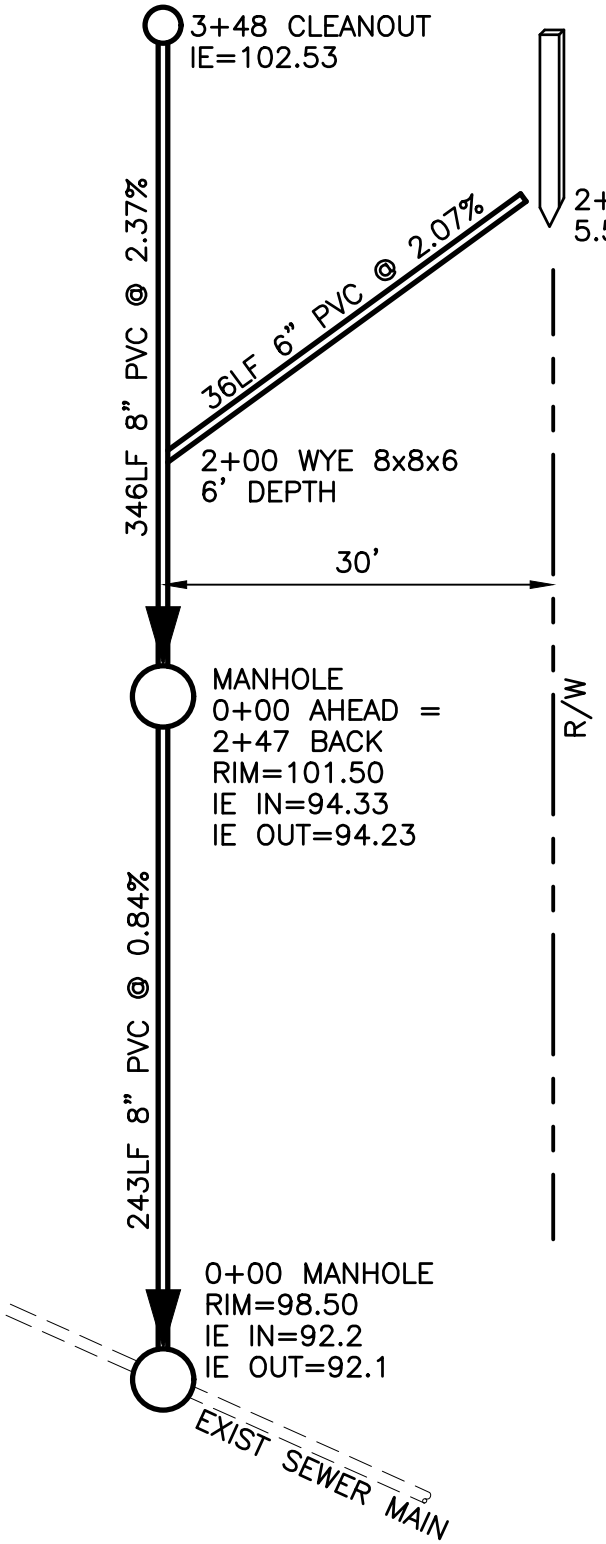
EXAMPLE RECORD DRAWING

NOTES:

1. Water Mains. Show alignment dimensions to right–of–way, easements, and road centerlines. Show stationing and depth of fittings, valves, and service taps along the main.

2. Fire Hydrants, Blowoffs, and other Appurtenances. Show length & material between tees, valves, hydrants, blowoffs, etc. Show station/offset of appurtenance if skewed from 90–degrees from main.

3. Water Services & Sampling Stations. Show tap station along main and size of tap. Show length & material of service line from main to meter box or sampling station.



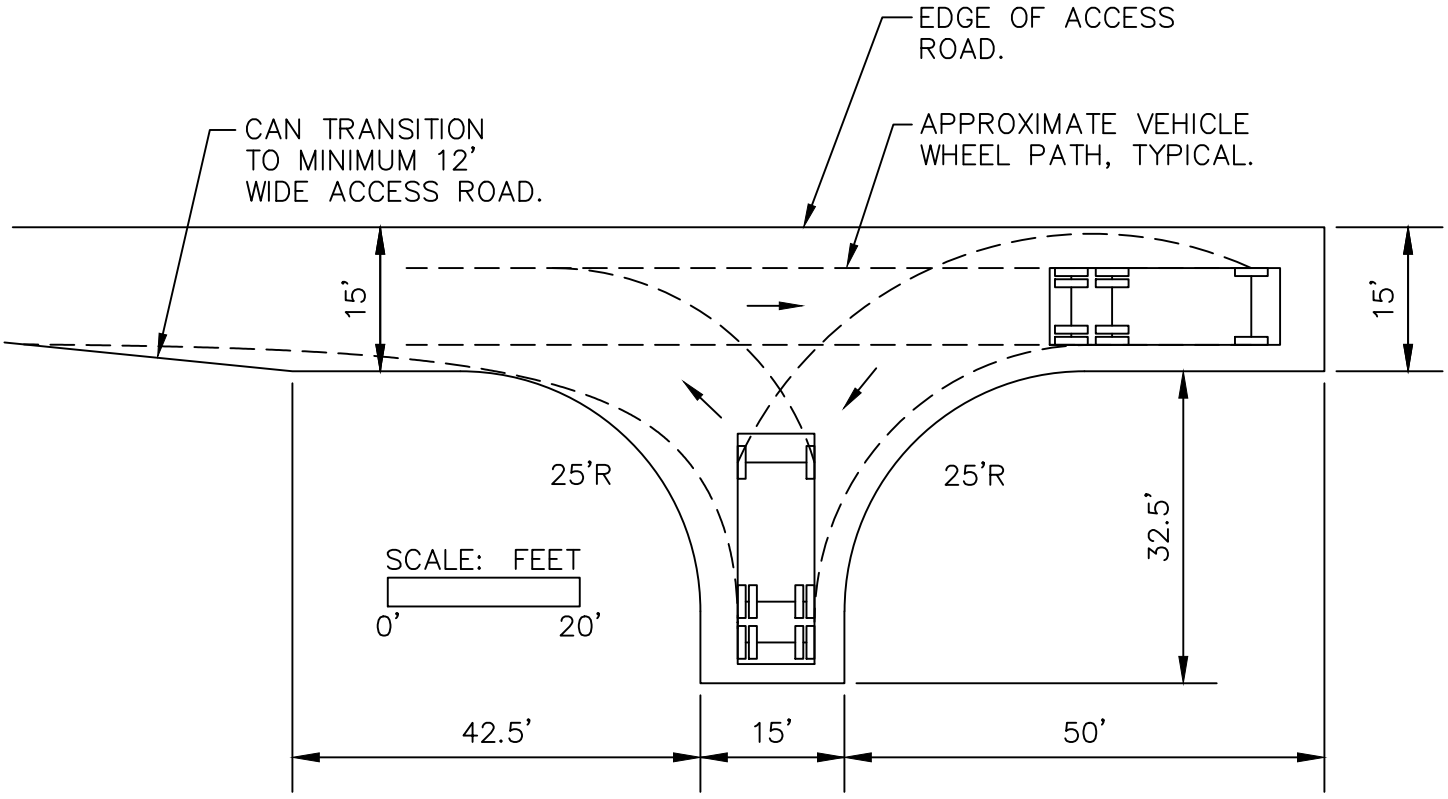
EXAMPLE RECORD DRAWING

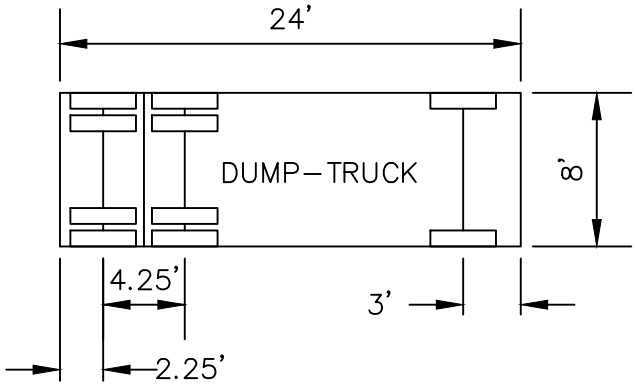
NOTES:

1. Manholes. Show stationing ahead (0+00) and stationing back, rim elevation, and invert elevations.

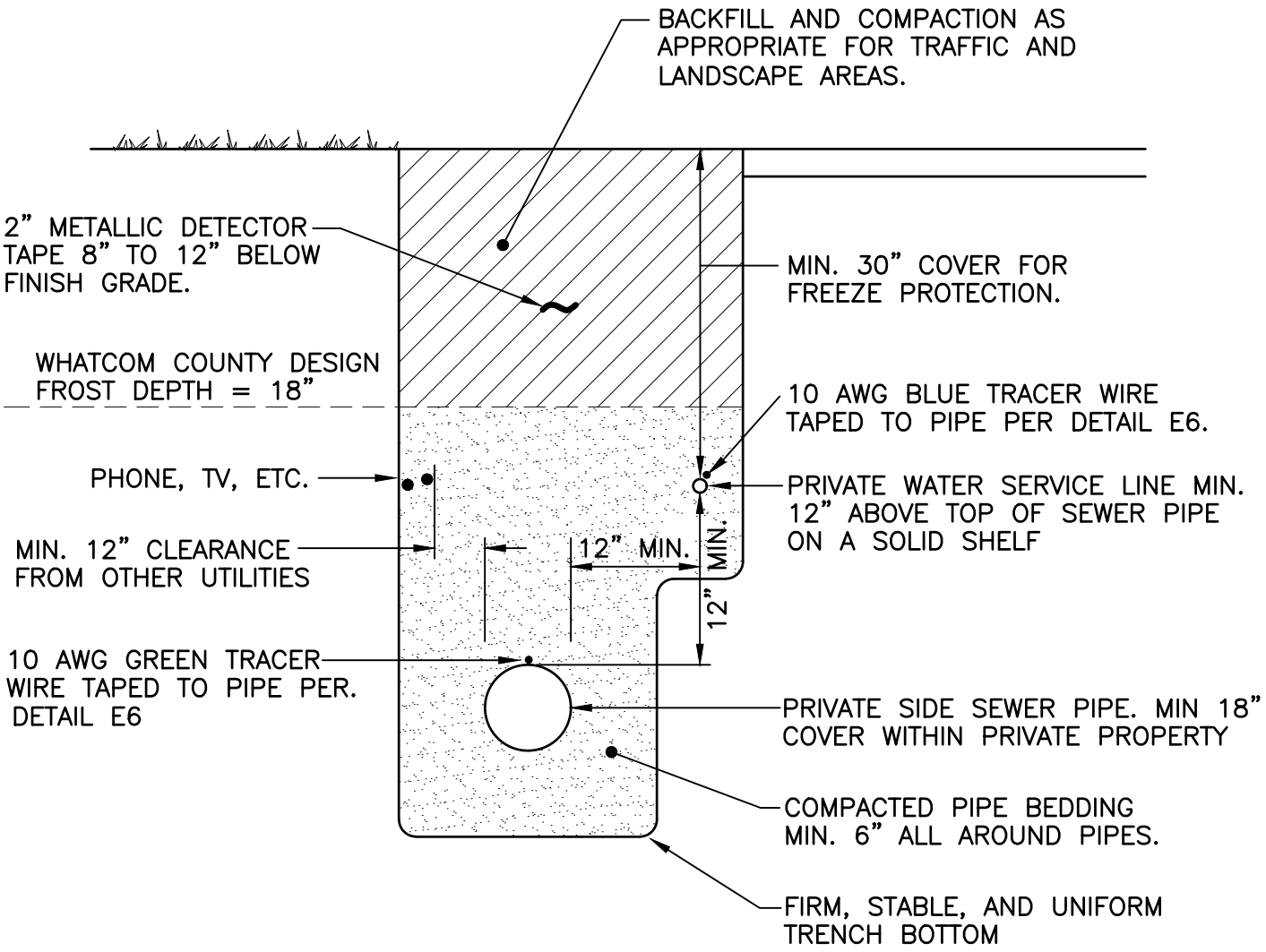
2. Sewer Mains. Show alignment dimensions to right–of–way, easements, and road centerlines. Show station and depth of service wyes and tees along the main. Show actual plan view length of pipe between manhole walls with material and slope.

3. Sewer Laterals. Show distances between bends, size, material, and length of pipe. Show station, offset, and depth at end of stub or cleanout.





DESIGN VEHICLE



NOTES:

1. Side sewer lines and water service lines shall not be installed in the same trench unless the above common trench detail is adhered to (UPC 720.1).

2. Water service lines crossing a sewer line shall be a minimum of 12–inches above the top of the sewer line (UPC 720.1(3)).

3. When a common trench is used for water service and side sewer lines, both pipes shall be bedded in material meeting WSDOT 9–03.12(3) Gravel Backfill for Pipe Zone Bedding as shown in following table:

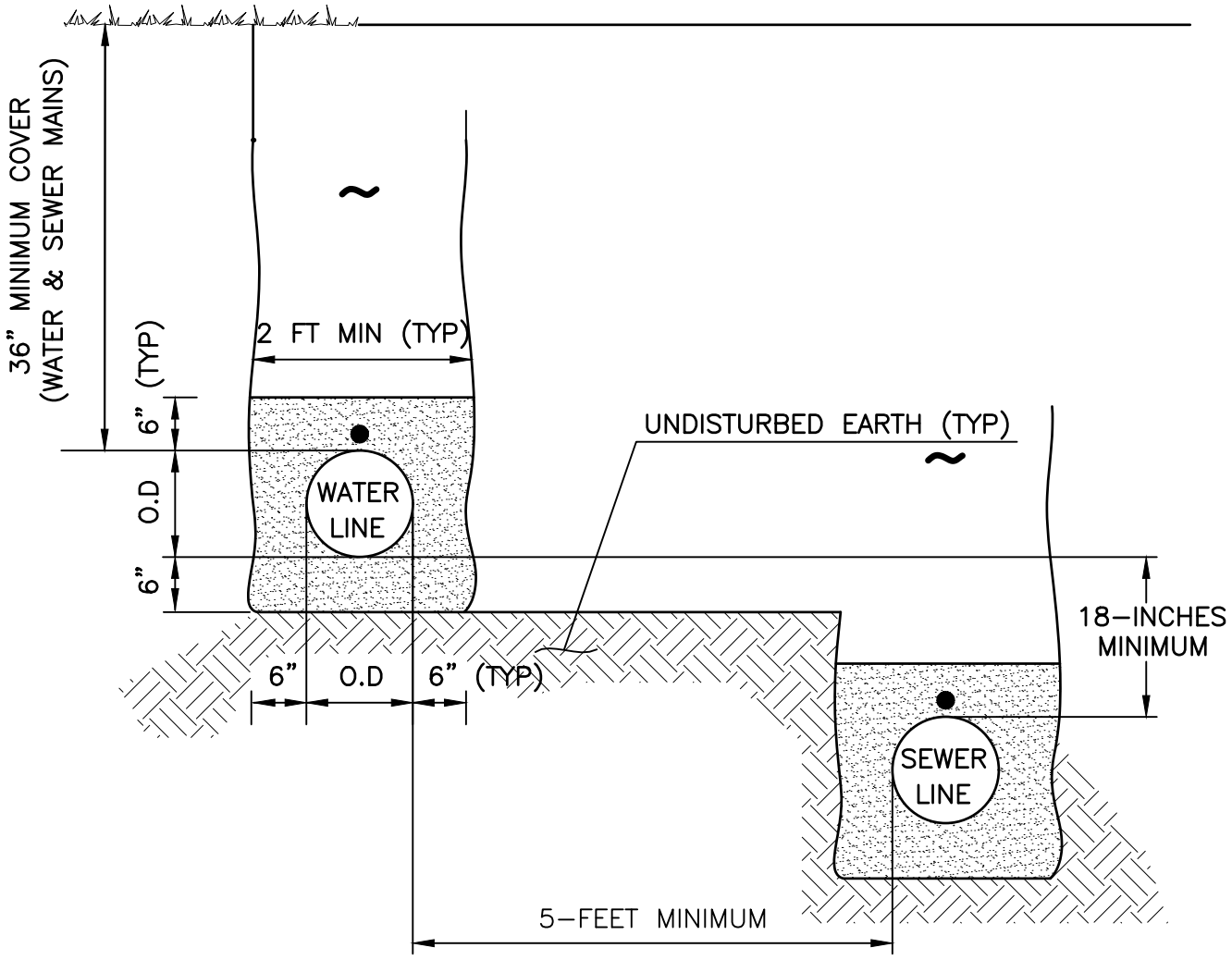
Sieve Size	Percent Passing by Weight
1.5"	99–100
1"	75–100
5/8"	50–100
U.S. No. 4	20–80
U.S. No. 40	3–24
U.S. No 200	10.0 max
Sand Equivalent	35 min.

LAKE WHATCOM WATER & SEWER DISTRICT

COMMON TRENCH DETAIL: PRIVATE WATER SERVICE LINE AND SIDE SEWER LINE

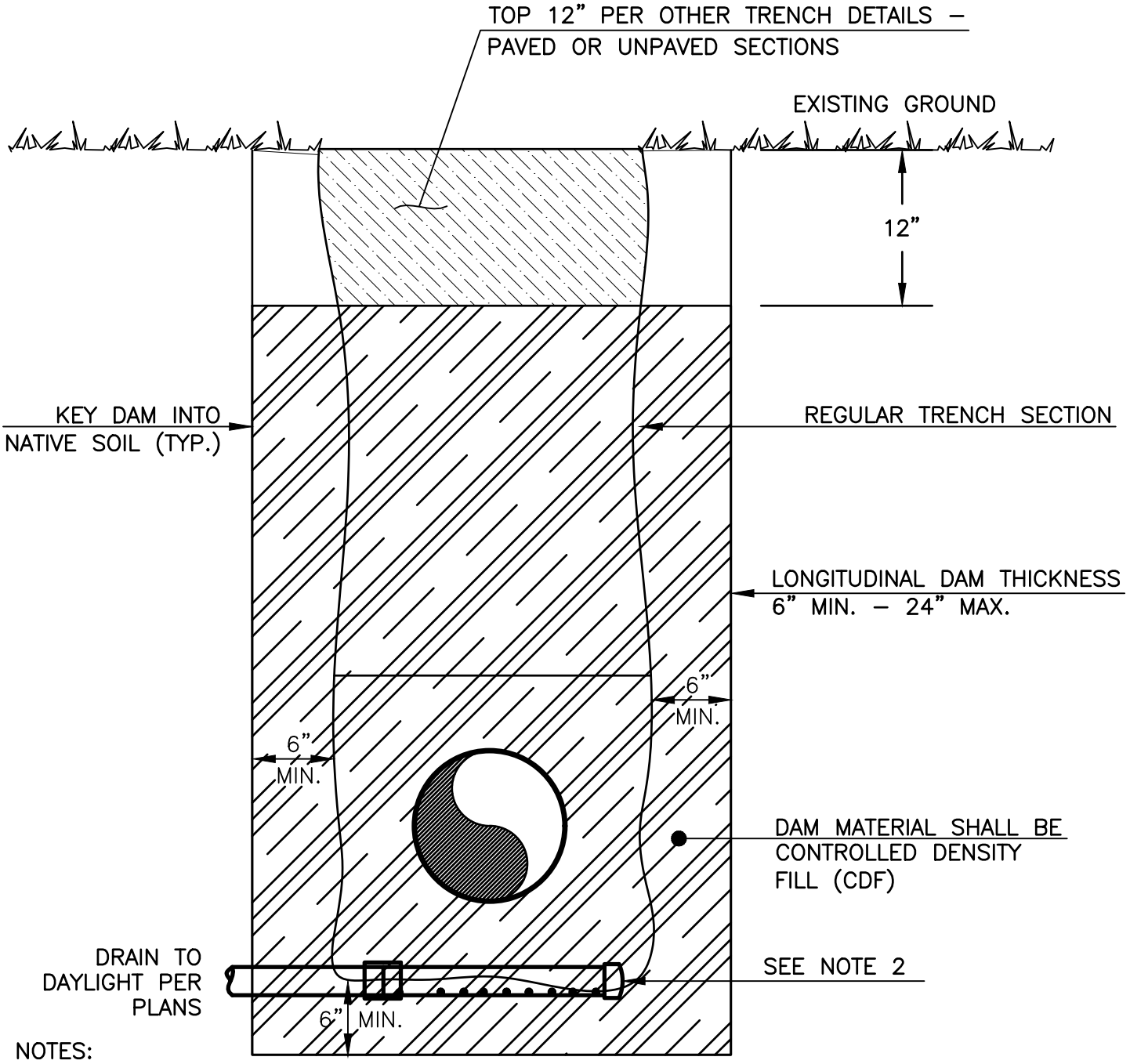
STANDARD DETAIL

G8



NOTES:

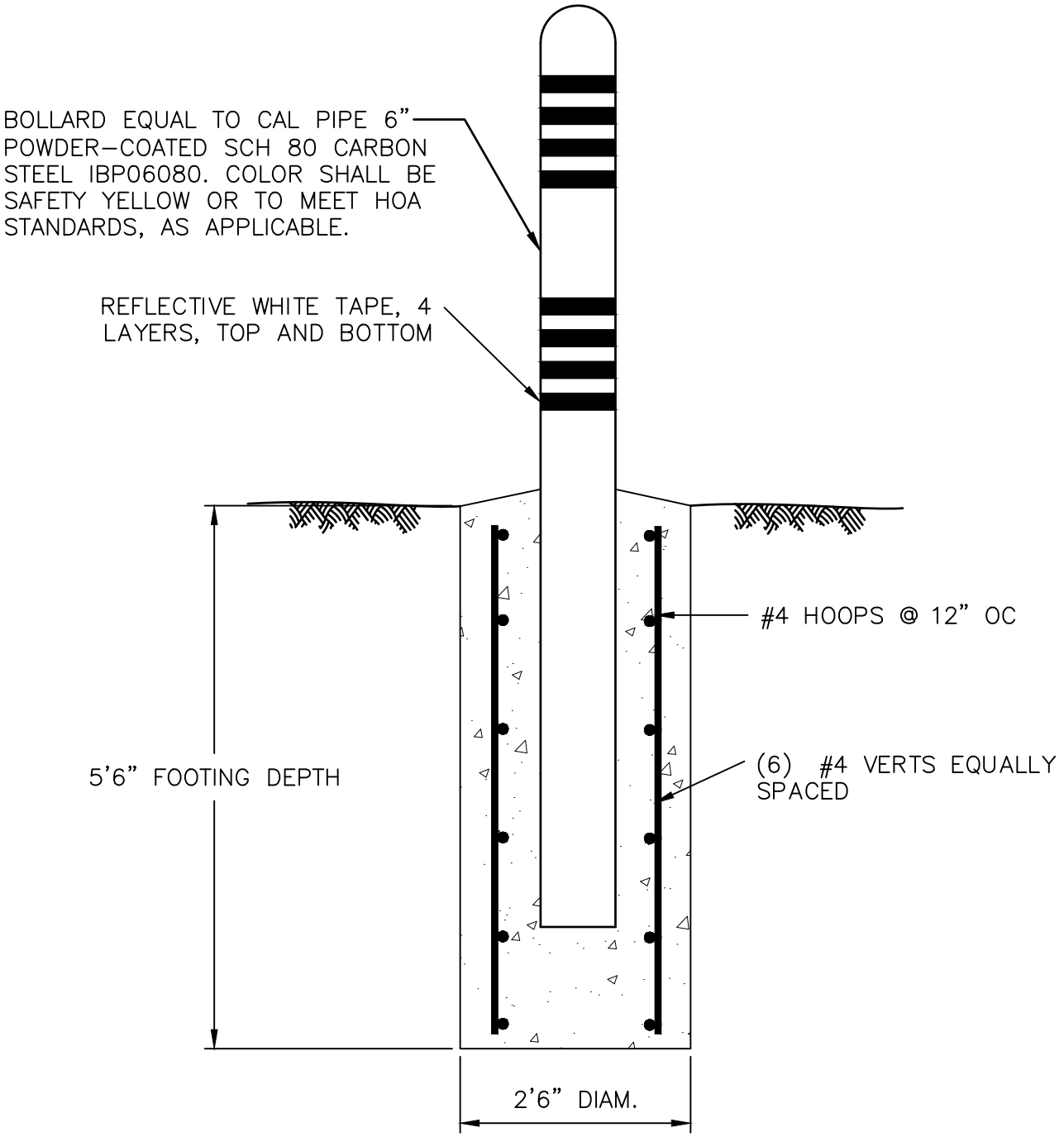
1. When local conditions prevent the required 10–feet horizontal separation (parallel alignment) and minimum 18–inch vertical separation between public water lines and any sanitary sewer line, with the approval of the District Engineer, details of DOE "Criteria for Sewage Works Design" Section C1–9.1.2 shall be followed.
2. The water line shall be laid on a bench of undisturbed earth with the bottom of the water line at least 18–inches above the crown of the sewer and shall have at least 5–feet of horizontal separation at all times. Additional mitigation efforts, such as impermeable barriers, may be required by the appropriate state and local agencies.
3. If the 18–inch vertical separation cannot be obtained, the sewer shall be constructed of materials and joints that are equivalent to water main standards of construction and shall be pressure tested to ensure water tightness prior to backfilling. Adequate restraint should be provided to allow testing to occur. See DOE "Criteria for Sewage Works Design Section C1–9.1.2.
4. Trench bedding, backfill, tracer wire, detector tape and restoration per Standard Detail G4.



NOTES:

1. TRENCH DAMS SHALL BE LOCATED AS PER GENERAL NOTES OR PER PROJECT PLAN AND PROFILE SHEETS.

2. INSTALL 4 INCH PVC CAP, PERFORATED DRAIN PIPE WITH HOLES FACING DOWN, COUPLER, AND SOLID PVC PIPE 1 TO 2 FEET OUTSIDE THE LIMITS OF THE CDF ON THE UPHILL SIDE OF THE TRENCH DAM. INSTALL DRAIN ROCK (WSDOT 9–03.12(4)) 6 INCHES ON ALL SIDES OF PERFORATED PIPE. SEPARATE DRAIN ROCK FROM OTHER MATERIAL USING GEOTEXTILE FOR UNDERGROUND DRAINAGE PER WSDOT 9–33.2, TABLES 1&2, MODERATE SURVIVABILITY, CLASS C.



BOLLARD DETAIL (NOT TO SCALE)

NOTES:

1. REINFORCING STEEL SHALL BE WITH ASTM A706, GRADE 60 WITH 16 GAUGE MINIMUM TIE WIRE. USE PRE-CAST CONCRETE BLOCKS TO SUPPORT BARS OFF GROUND WITH MINIMUM 2-INCH CONCRETE PROTECTION ALL SIDES.

2. CONCRETE FOR BOLLARD FOUNDATION SHALL BE MINIMUM 4,500 PSI 28-DAY COMPRESSIVE STRENGTH.

WATER SYSTEM NOTES

1. Water distribution system materials, trenching, bedding, installation, backfilling, disinfection, and testing shall meet the requirements of WSDOT 7–09.

2. All water piping and appurtenances in contact with potable water shall be certified under NSF–61 for potable water use in accordance with WAC 246–290–220.

3. Water main pipe shall be class 52 ductile iron per WSDOT 9–30.1(1) and encased in polyethylene encasement per WSDOT 9–30.1(2). Fittings for ductile iron pipe shall meet the requirements of WSDOT 9–30.2 (1).

4. Water Main Appurtenances. Valves shall have a minimum pressure rating of 200 psi. Gate valve installation shall conform to WSDOT 7–12. Gate valves shall be resilient–seated gate valves conforming to WSDOT 9–30.3(1) and AWWA C515 Standard for Resilient Seated Gate Valves. A cast iron valve box with a commercial concrete collar (18" x 18" x 6") shall be installed with each valve. An approved marking post shall be installed with each valve in accordance with WSDOT 7–12.3(1) for all valves not installed in pavement. Valves not in pavement shall have a 24" x 24" x 6" concrete collar cast around the valve box. Where a valve operating nut is more than 4–feet lower than grade, an American Flow Control Trench Adapter valve box and stem extension combination (or approved equal) must be installed.

5. Pressure reducing valves (2" and larger) shall be manufactured by Cla–Val, Watts, or approved alternate.

6. Service connections shall be installed per WSDOT 7–15. Lot corners shall be staked prior to service connection installations to assure services are installed in correct locations as shown on the approved plans.

7. The District Engineer shall witness pressure testing. Bacteriological sampling shall be conducted by a District certified operator (employee). Contractor shall provide the District Engineer 48–hours notice prior to conducting tests or sampling.

8. Water lines and appurtenances shall be pressure tested in accordance with WSDOT 7–09.3(23).

9. Before being placed into service, new water mains and repaired portions of, or extensions to, existing mains shall be flushed and disinfected by the Contractor in accordance with WSDOT 7–09.3(24) and the most current edition of the American Water Works Association (AWWA) Standard C651, Disinfecting Water Mains. As stated therein, the District requires two set of samples, either a) taken 16 hours apart or b) two samples are taken 15 minutes apart after a 16 hour rest period, satisfactorily passing bacteriological testing requirements (testing includes but is not limited to testing for total coliforms, fecal coliforms and E.coli found in the water sample) meeting current Washington State Department of Health (DOH) Standards, before connecting the new or repaired portion of main. Costs of bacteriological testing shall be borne by the Contractor. In addition, Contractor shall provide two chlorine concentration test reports to show the initial chlorine concentration is at least 50 mg/L, and to show the 24–hour residual chlorine concentration is at least 25 mg/L. All tests must be performed by a DOH–certified testing laboratory and sample–taking shall be performed by a District certified operator (employee). Bacteriological samples must be collected by the District. Chlorinated flush water must be dechlorinated and disposed of in accordance with WSDOT 7–09.3(24)A. If disposal is to the District's sanitary sewer system, Contractor shall coordinate with District staff to ensure

the rate of disposal does not overload the District's sewer system.

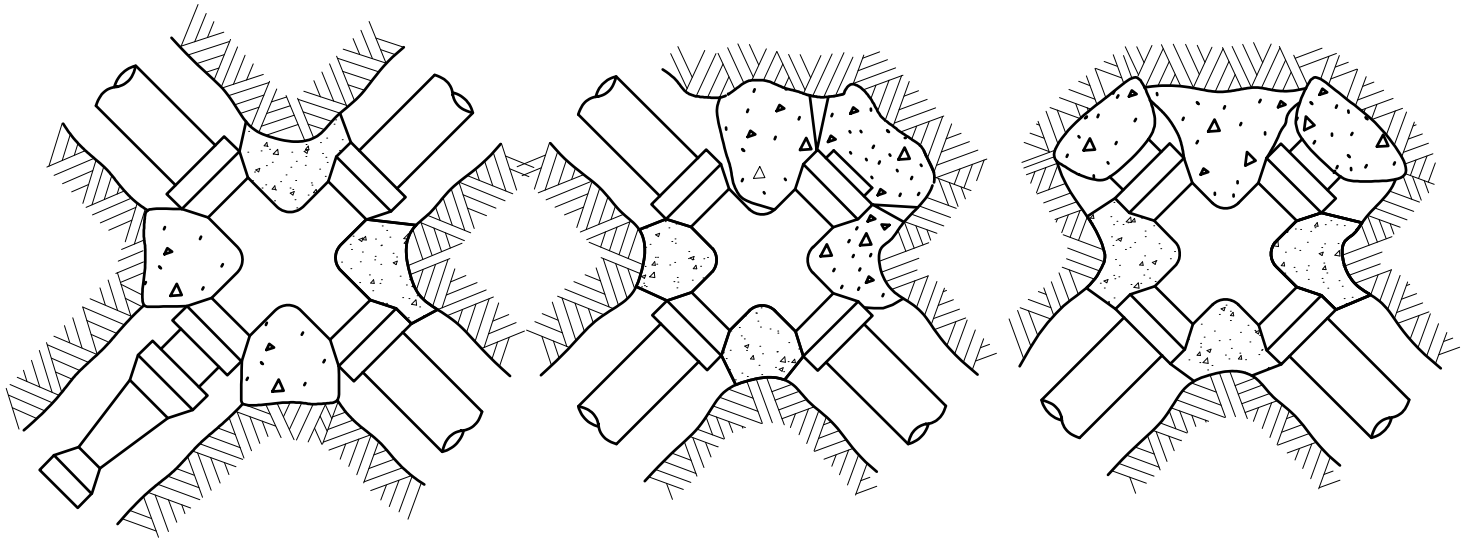
10. New services shall be pressure tested along with the new main. No use of water through a newly installed service shall be allowed until water main and service installation has been inspected, pressure tested, chlorinated and a satisfactory bacteria test received. After installation, the service connection shall be flushed prior to connecting the meter. No service is to be covered until the District's Inspector has inspected the initial installation. All corporations must be in an ON position and all angle valves must be in the OFF position.

11. Service flow testing shall be done after water main pressure testing. During the inspection, every service shall be turned on to its full capacity to check flow and guarantee that each service line has been flushed.

12. Water service lines on the customer side of the water meter shall meet the requirements of the Uniform Plumbing Code (UPC).

13. In accordance with District Administrative Code Section 4.3.6, all customers are required to install a Pressure Reducing Valve (PRV) downstream of the meter and dual check valve on the customer side of service to protect their plumbing systems from high pressure surges. A PRV inspection by District personnel is required prior to occupancy. See detail W11.

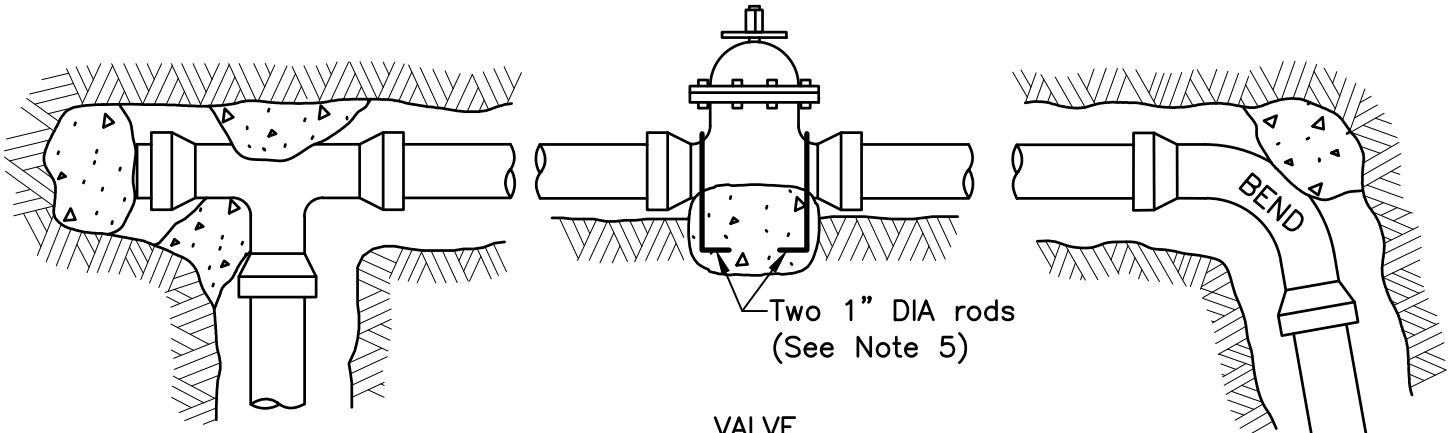
14. In accordance with WAC 246–290–490 and District Resolution No. 858, all cross–connections between the District's water distribution system and a consumer's water system shall be eliminated or controlled by the installation of a District approved backflow preventer commensurate with the degree of hazard. The District's Cross–Connection Control Program is available for review at the District office or on the District website (www.lwwsd.org).



UNBALANCED CROSS
(Use column A)

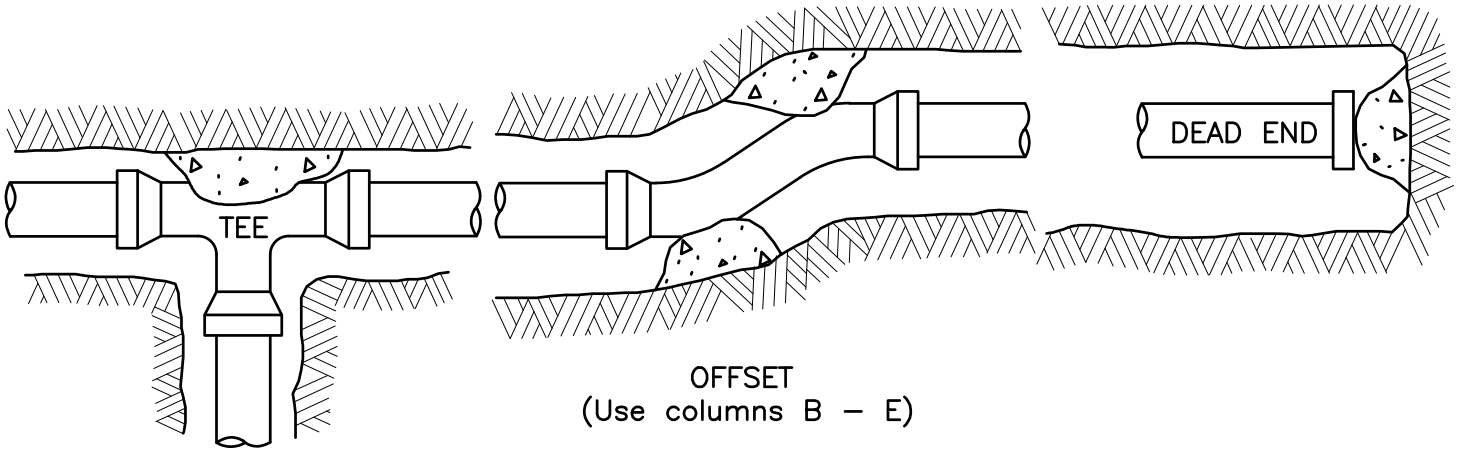
PLUGGED CROSS
(Use column A)

PLUGGED CROSS
(Use column B)



PLUGGED TEE
(Use column B)

VALVE
(Use column A)



OFFSET
(Use columns B – E)

BASED ON WSDOT STANDARD PLAN
B-90.40-00 DATED 6/8/06.

LAKE WHATCOM WATER & SEWER DISTRICT

CONCRETE THRUST BLOCK
Sheet 1 of 2

STANDARD DETAIL

W3

NOTES:

1. Contractor may substitute restrained joints & fittings with the approval of the district engineer. Calculation of the restrained pipe required length on each side of fittings for max pressure and soil type are required. Calculations shall be sealed by a professional engineer and submitted for review and approval.

2. Contractor to provide blocking adequate to withstand full test pressure.

3. Divide thrust by safe bearing load to determine required area (in square feet) of concrete to distribute load.

4. Areas to be adjusted for other pressure conditions.

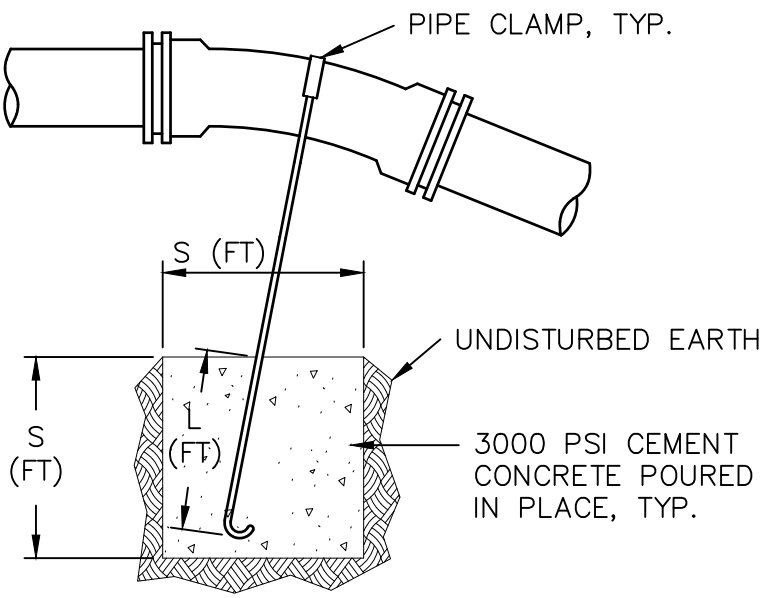
5. Provide two 1" minimum diameter rods on valves up through 10" diameter. Valves larger than 10" require special tie rod design.

Size	Test Pressure PSI	Thrust at Fittings in Pounds				
		A	B	C	D	E
		Tee and Dead Ends	90° Bend	45° Bend	22.5° Bend	11.25° Bend
4"	250	3,140	4,440	2,405	1,225	615
6"	250	7,070	9,995	5,410	2,760	1,385
8"	250	12,565	17,770	9,620	4,905	2,465
10"	250	19,635	27,770	15,030	7,660	3,850
12"	250	28,275	39,985	21,640	11,030	5,545
14"	250	38,485	54,425	29,455	15,015	7,545
16"	250	50,265	71,085	38,470	19,615	9,855

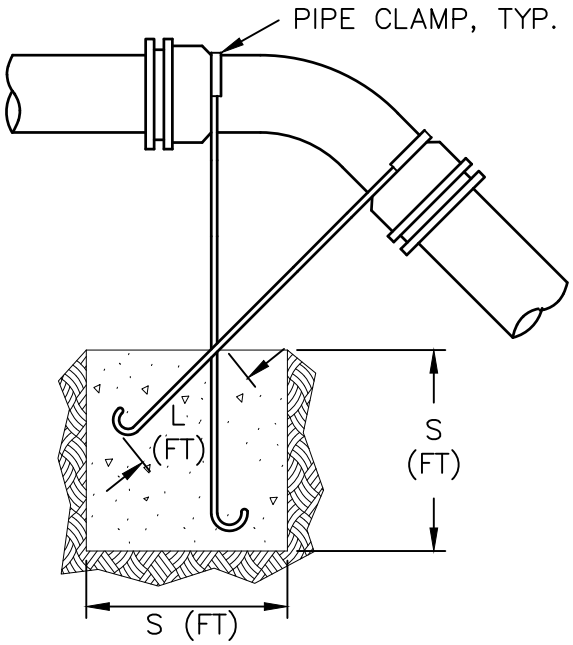
Soil Type	Safe Bearing Load PSF
Muck, peat, etc.*	0
Soft clay	1,000
Sand	2,000
Sand and gravel	3,000
Sand and gravel cemented with clay	4,000
Hard shale	10,000

*Restrained joints required in all cases.

BASED ON WSDOT STANDARD PLAN B-90.40-00 DATED 6/8/06.



BLOCKING FOR 11.25°, 22.5° OR 33.75° VERTICAL BENDS

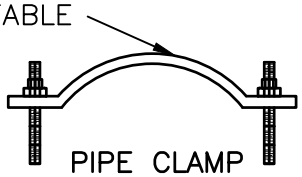


BLOCKING FOR 45° VERTICAL BENDS

DIMENSION TABLE							
PIPE DIAM.	TEST PRESSURE (PSI)	BEND ANGLE	CONCRETE VOLUME (Cubic–Ft)	CUBE SIZE "S" (FT)	TIE ROD DIAM. (IN)	DEPTH OF RODS IN CONCRETE "L" (IN)	PIPE CLAMP SIZE (DxW)
4"	300	11.25°	8	2.0	5/8"	18"	3/8" X 2"
		22.5°	11	2.2		24"	
		33.75°	17	2.6			
		45°	30	3.1			
6"	300	11.25°	11	2.2	5/8"	24"	1/2" X 2–1/2"
		22.5°	25	2.9			
		33.75°	41	3.5			
		45°	68	4.1			
8"	300	11.25°	16	2.5	5/8"	24"	1/2" X 2–1/2"
		22.5°	47	3.6			
		33.75°	70	4.1	3/4"		
		45°	123	5.0			
12"	250	11.25°	32	3.2	5/8"	24"	3/4" X 3"
		22.5°	88	4.5	7/8"		
		33.75°	132	5.1			
		45°	232	6.1		30"	

NOTE:

1. TIE RODS SHALL BE STAINLESS STEEL, DIAMETER AS SPECIFIED.
2. PIPE CLAMP SHALL BE GALVANIZED. BAR AND HARDWARE SHALL BE STAINLESS STEEL.
3. APPROVAL OF LOCATION FROM THE DISTRICT IS REQUIRED PRIOR TO INSTALLATION.



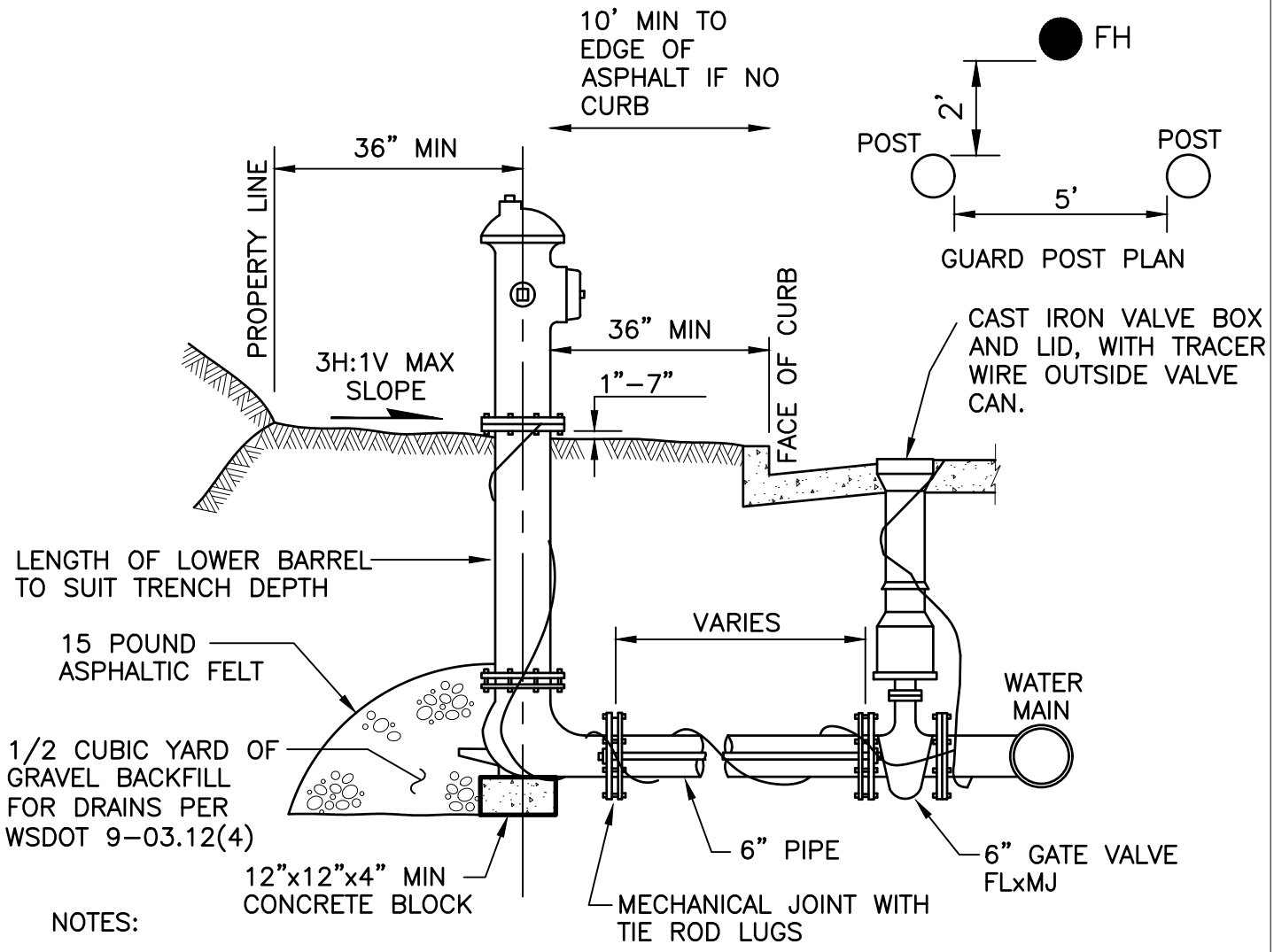
BASED ON ALDERWOOD WATER & WASTEWATER STANDARD WD–12 11–2015

LAKE WHATCOM WATER & SEWER DISTRICT

CONCRETE THRUST BLOCK
FOR CONVEX VERTICAL BENDS

STANDARD DETAIL

W5



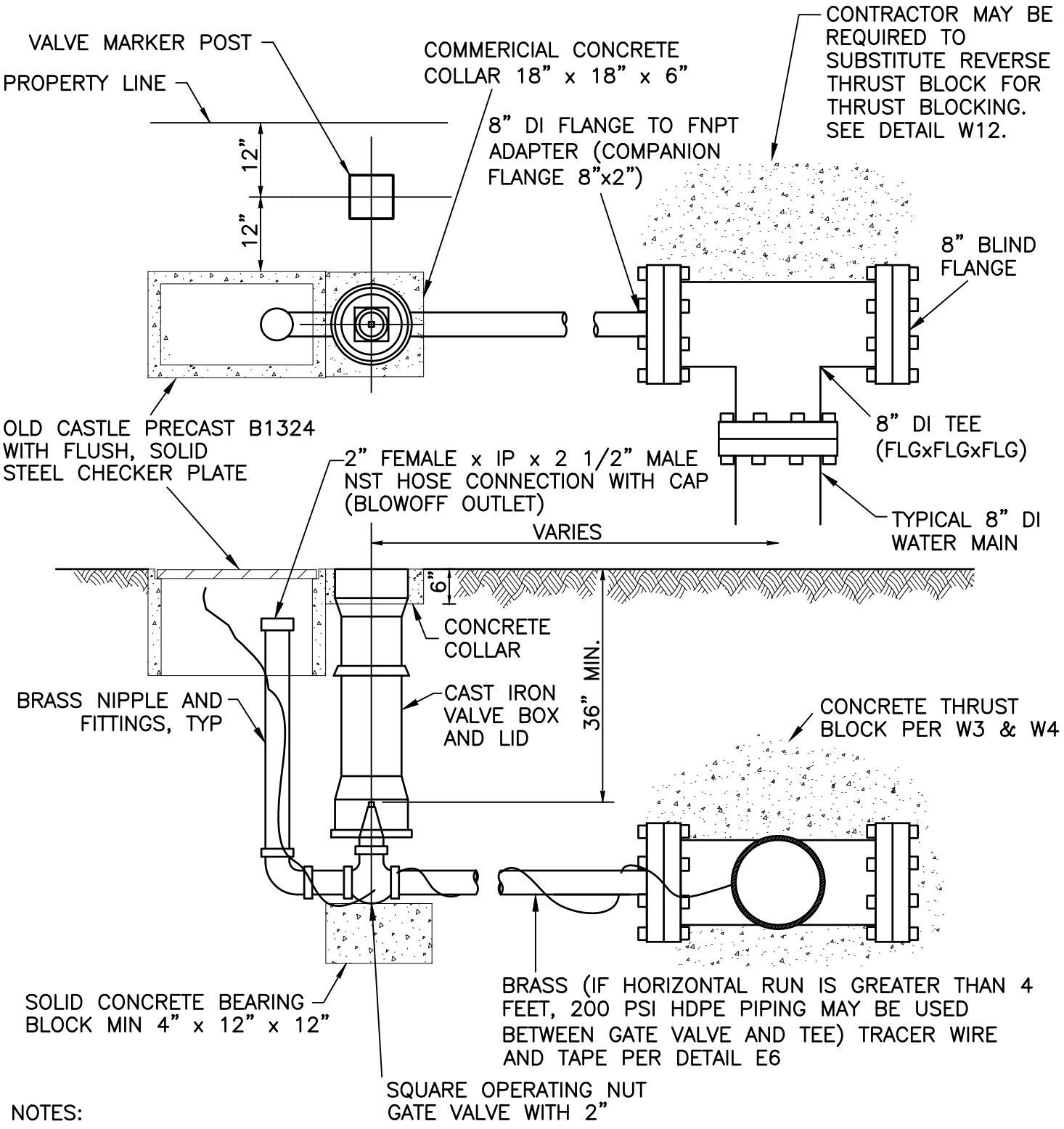
NOTES:

1. Fire hydrants shall be 5–1/4" compression type MJ foot with National Standard Thread on 2–1/2" side ports, and 5" Stortz connection fitting on the steamer port. District standard fire hydrant manufacturers/models are: American Flow Control – Waterous Pacer 250, M&H – Style 929 Reliant, Clow – Medallion, and EJ 5CD250 3 nozzle with standard operating nut. Hydrant caps & bells shall be painted bright industrial yellow in accordance with South Whatcom Fire Authority and Whatcom County Fire District #4 requirements. Hydrant barrel extensions shall be provided and installed as required.

2. Shackle rods shall be installed with Romac ductile lugs. Tie rods shall be $\frac{3}{4}$" diameter Type 316 stainless steel (for up to 12" diameter main) with Type 316 stainless steel hardware. Restrained joints may be substituted for tie rods with approval of District Engineer.

3. Ground surface within 36" of hydrant shall be smooth and clear of obstructions on all sides.

4. A minimum of two guard posts shall be provided. Guard posts per Bollard Detail S11). Bollard locations shall be per the District.

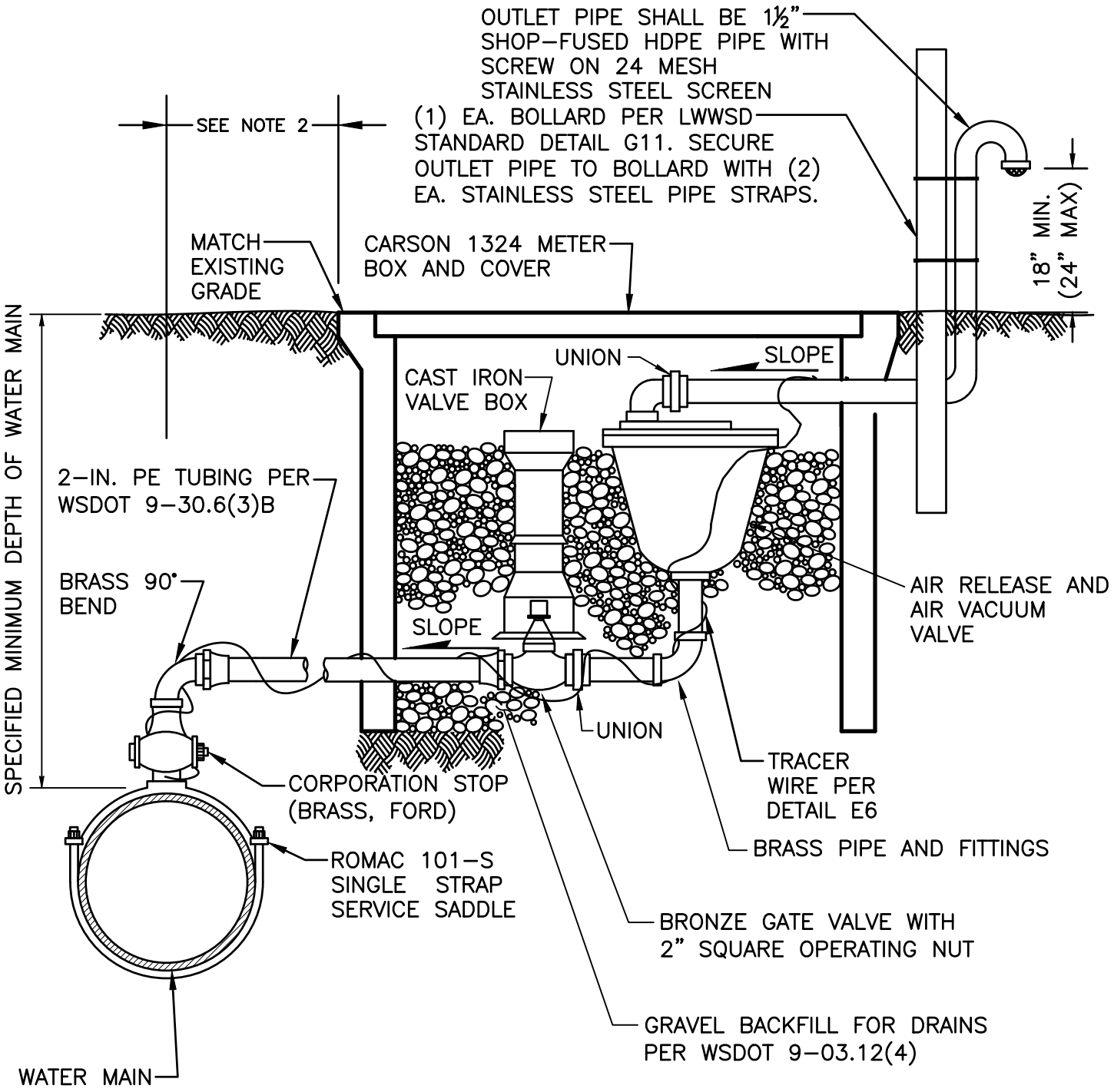


NOTES:

1. Valve and piping to valve shall be 2" unless otherwise noted on plans.

3. Locate blowoff outlet near property corner if possible.

4. An 8–inch gate valve (FLxMJ) is required on the tee if future water main extension is possible.



NOTES:

1. The Air/Vacuum Release Valves shall be 2-inch APCO Series 145C combination air-release/vacuum relief valve, single body, double orifice. Locate at the high point of the main, tap top of main.

2. Air/Vacuum Release assembly shall be installed along the right-of-way at location staked by engineer.

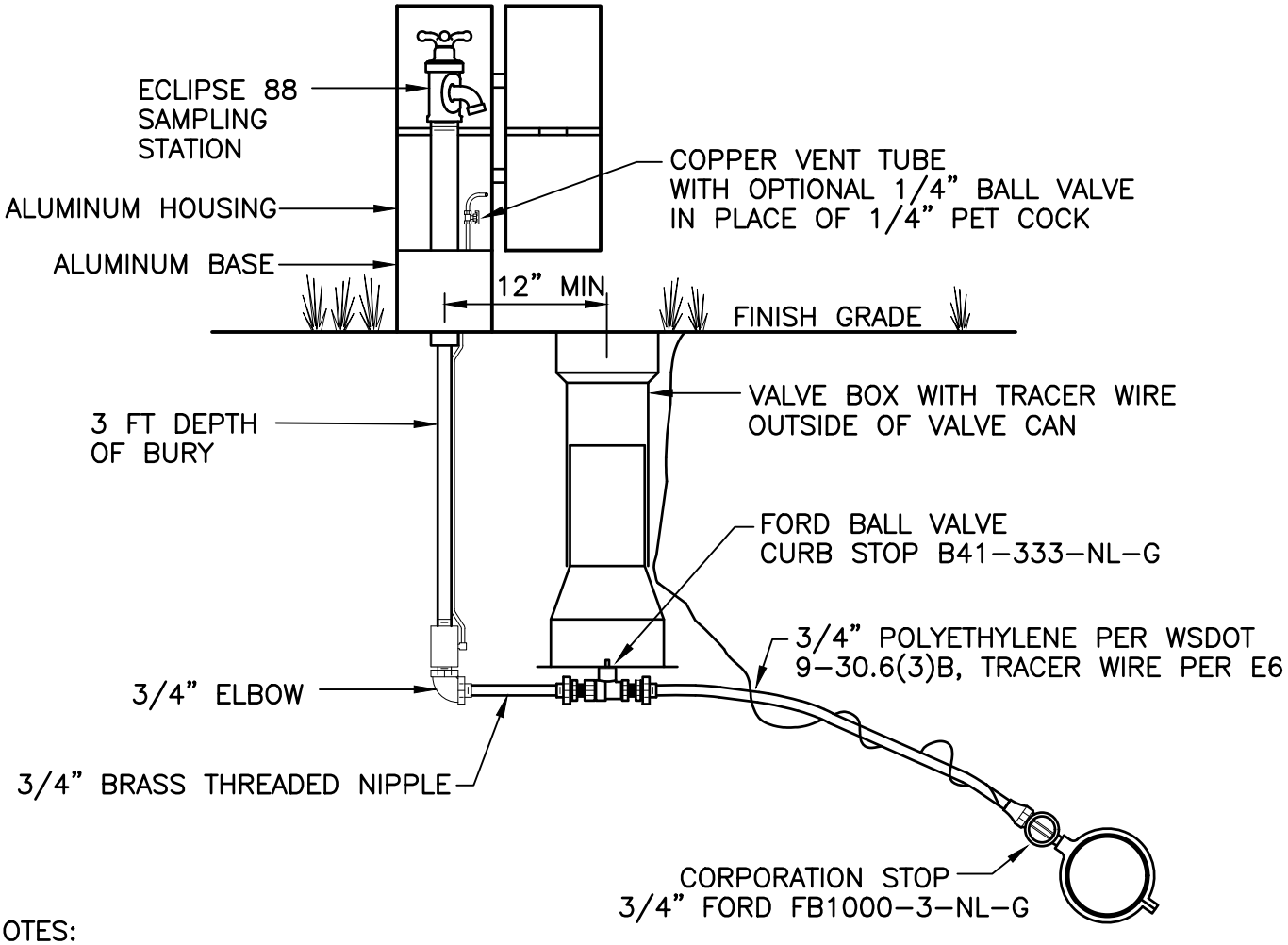
BASED ON WSDOT STANDARD PLAN B-90.30-00 DATED 6/8/06.

LAKE WHATCOM WATER & SEWER DISTRICT

COMBINATION
AIR RELEASE / AIR VACUUM
VALVE ASSEMBLY

STANDARD DETAIL

W8



NOTES:

1. Sampling stations shall be buried 3' bury, with a 3/4–inch FIP inlet, and a (3/4–inch hose or unthreaded) nozzle.

2. All stations shall be in a lockable, nonremovable, aluminum cast housing. Housing shall be painted green.

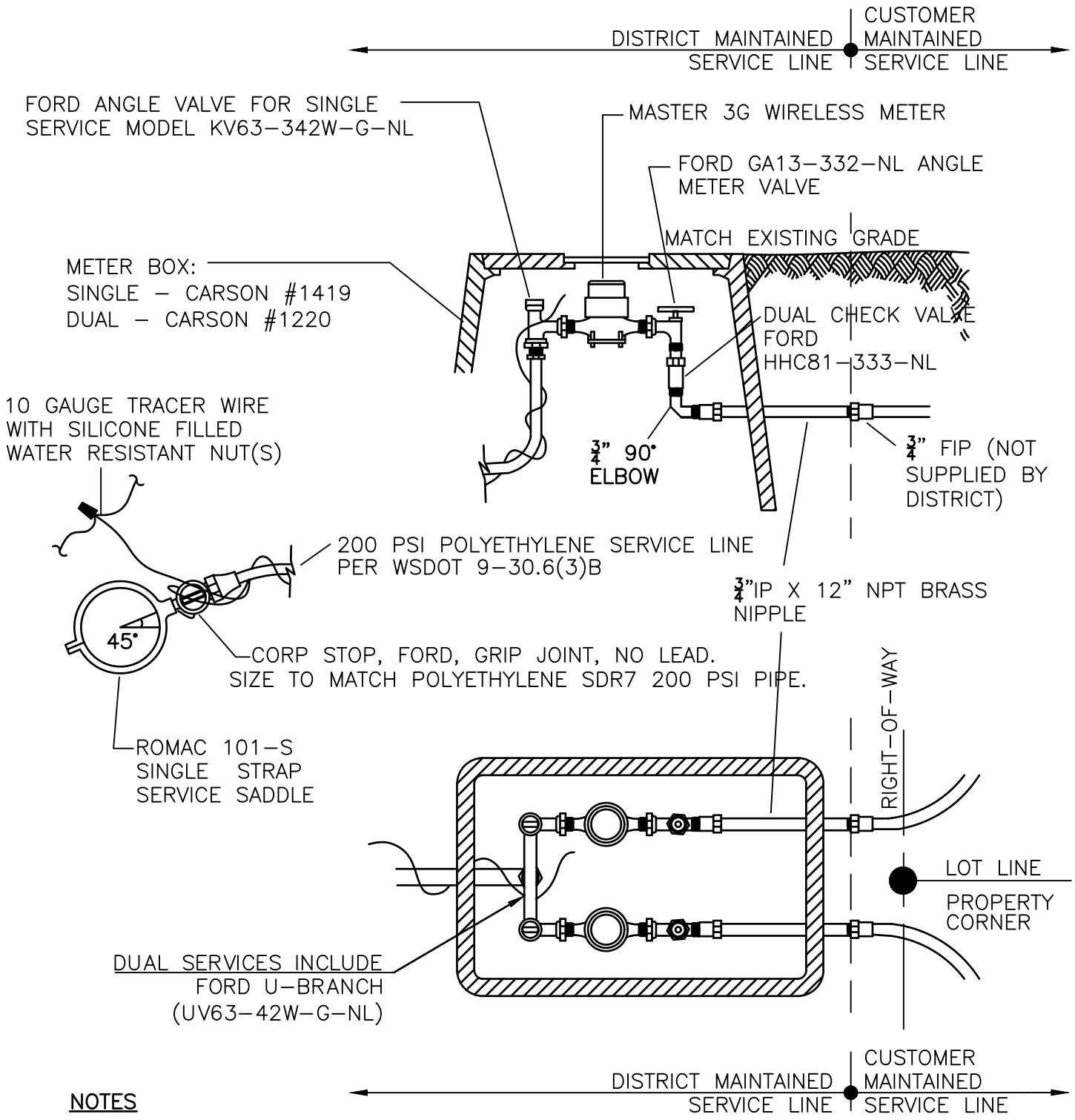
3. When opened, the station shall require no key for operation, and the water will flow in an all brass waterway.

4. All working parts will be of brass and be removable from above ground with no digging.

5. Exterior piping shall be brass pipe.

6. A copper vent tube will enable each station to be pumped free of standing water to prevent freezing and to minimize bacteria growth.

7. Sampling station shall be Eclipse No. 88, manufactured by Kupferle Foundry, St. Louis, MO 63102.



NOTES

1. Service fittings shall be in accordance with WSDOT 9-30.6 except that PEX-a-tubing is not allowed and only compression (grip joint) fittings on service lines are allowed. All fittings shall be brass.

2. The water service pipe shall have a minimum of 30 inches depth and a maximum of 36 inches depth, including under ditch sections.

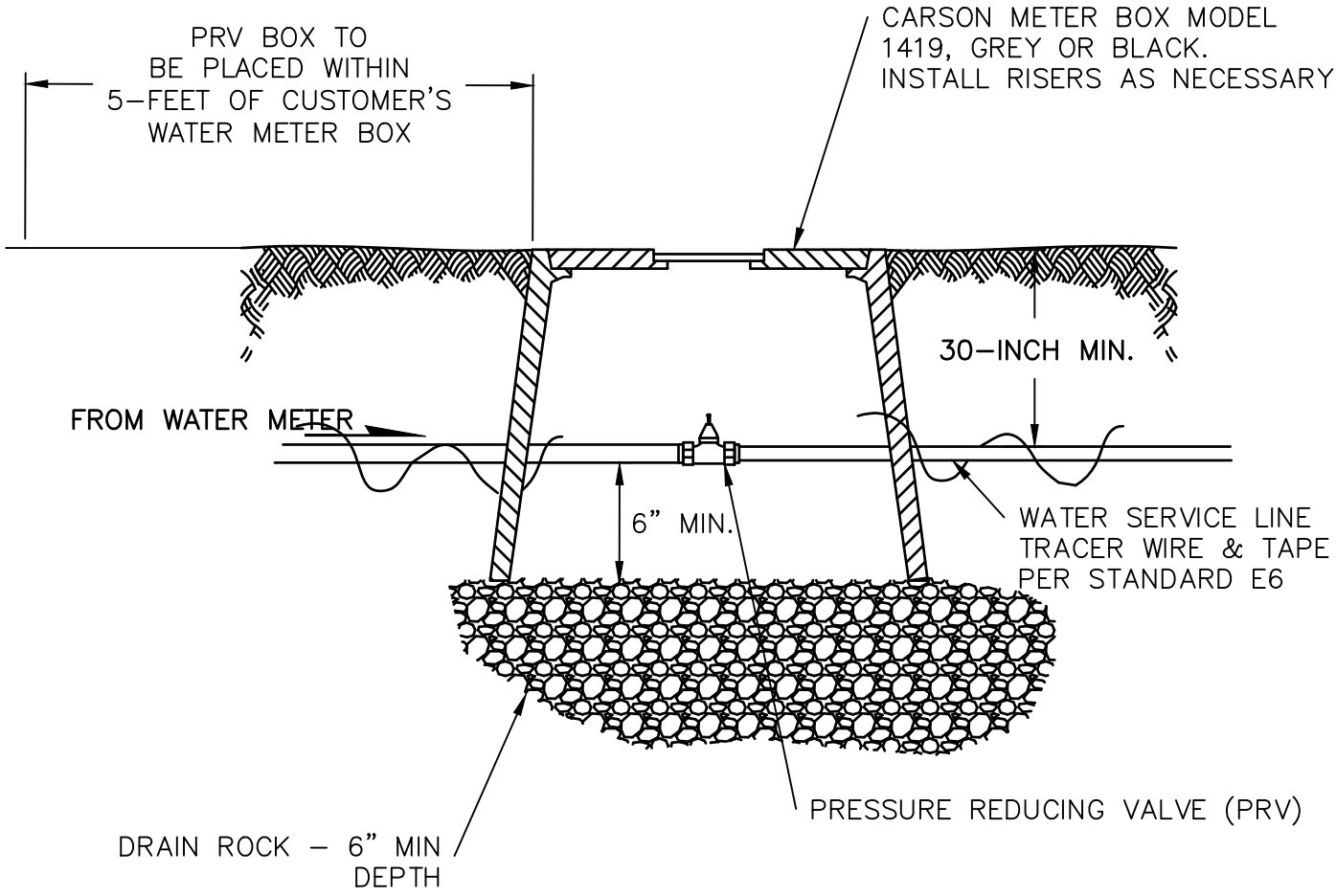
3. Meter boxes in traffic areas shall be rated for H-20 loading with a reader lid.

LAKE WHATCOM WATER & SEWER DISTRICT

WATER METER ASSEMBLY

STANDARD DETAIL

W10



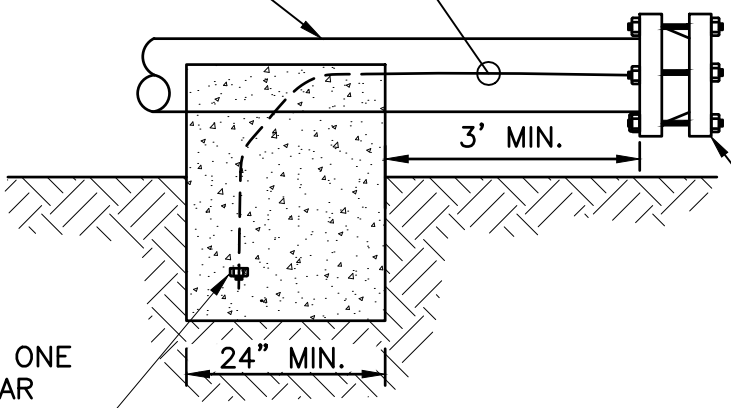
NOTES

1. The pressure reducing valve assembly shall be located on the customer's property downstream of the water meter box assembly.
2. A pressure reducing valve is required for all water service lines.
3. All fittings shall be brass.
4. Installation, maintenance and operation of the pressure reducing valve is the responsibility of the property owner.

¾" DIA. TYPE 316 STAINLESS STEEL SHACKLE RODS WITH STAINLESS STEEL HARDWARE. ROMAC DUCTILE LUGS OR EYE BOLTS TO CONNECT TO MJ CAP OR PLUG.

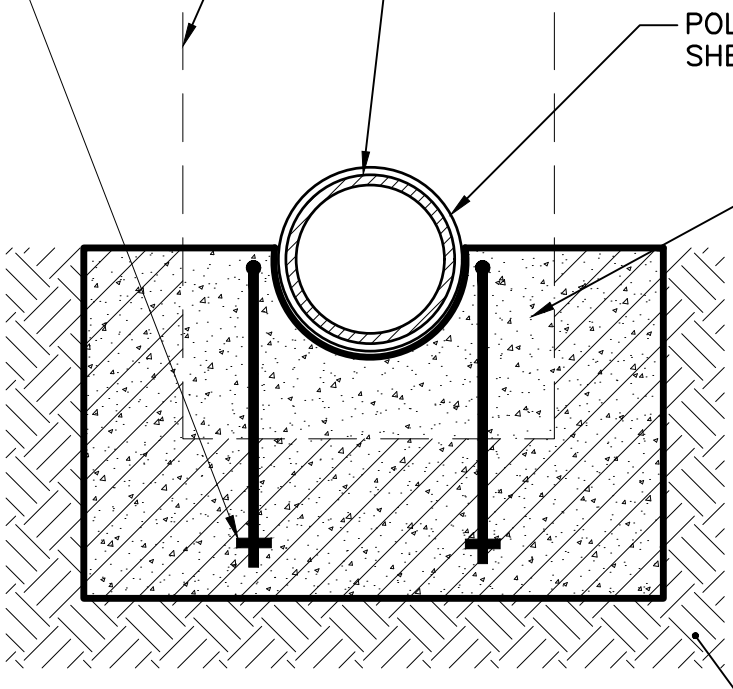
WATER MAIN DIAMETER (IN)	NUMBER OF SHACKLE RODS*
4	2
6	2
8	3
10	4
12	6

* BASED ON TEST PRESSURE OF 250 PSI



INSTALL ONE NUT NEAR THE END OF EACH ROD

TYPICAL TRENCH SECTION



CONCRETE THRUST BLOCK
MIN. 3,000 psi CONCRETE. BLOCK SIZE DEPENDS UPON SIZE OF MAIN AND EXISTING GROUND CONDITIONS. SIZE BASED ON STANDARD DETAIL W3 AND W4. PLACE INTO UNDISTURBED GROUND. REINFORCING STEEL SHALL HAVE MIN. 2–INCH COVER.

EXISTING UNDISTURBED GROUND

BEARING AREA AGAINST UNDISTURBED SOIL

LAKE WHATCOM WATER & SEWER DISTRICT

REVERSE THRUST BLOCK

NOT TO SCALE

STANDARD DETAIL

W12

SEWER SYSTEM NOTES:

1. Sewer system materials, trenching, bedding, installation, backfilling, and testing shall meet the requirements of WSDOT 7–05 and WSDOT 7–17 and District standards detailed herein.

2. Gravity sewer pipe shall be ASTM D3034–SDR 35 PVC per WSDOT 9–05.12(1). In certain applications, the District may require class 52 ductile iron pipe, per WSDOT 9–30.1(1), encased in polyethylene encasement per WSDOT 9–30.1(2).

3. Pressure sewer pipe shall be class 52 ductile iron pipe per WSDOT 9–30.1(1) encased in polyethylene encasement per WSDOT 9–30.1(2) or PVC C900 class 150 per WSDOT 9–30.1(5). HDPE may be substituted with the approval of the District Engineer (pipe rating, resins, physical properties, dimensions and tolerances must be as specified in the American Water Works Associations (AWWA) Manual C901 for the specific design conditions).

4. Sewer service lines from the public sewer main to the cleanout adjacent to the building must be installed by a contractor on the District's current Bonded Side Sewer Contractor list.

5. All sewer system installations shall be inspected prior to backfill.

6. All gate valves for sewer force mains shall have a cast iron valve box with a commercial concrete collar (18" x 18" x 6") with each valve. Valves not in pavement shall have a 24" x 24" x 6" concrete collar cast around the valve box.

7. Side sewers, from main to private property line, shall meet the requirements of WSDOT 7–18. Side sewers shall have a minimum slope of 2%. Side sewers shall maintain a minimum cover of 36–inches and 30 inches under ditches. Side sewers and cleanout/test tee at property line shall be minimum 6–inches in diameter.

8. Side sewers within private property shall meet the requirements of the District Standards detailed herein. Gravity side sewers shall have a minimum slope of 2%. Minimum size for gravity sewer lines will be 4–inches for a single family residence and 6–inches for a multi–family residence up to a 4–plex. See Standard Detail S10 for requirements regarding layout (bends) and cleanouts. Sewer cleanouts shall be installed per WSDOT 7–19.

9. Grout for manholes shall be a non–shrinking cementitious grout, containing no gypsum or calcium sulfate Di–hydrate (CaSO42H2O), conforming to WSDOT 9–20.3(2), such as Rapid Set Cement All or approved equivalent. Grout shall be installed according to manufacturer's instructions. JET SET, BLUELINE, AND QUICKCRETE ARE NOT ALLOWED.

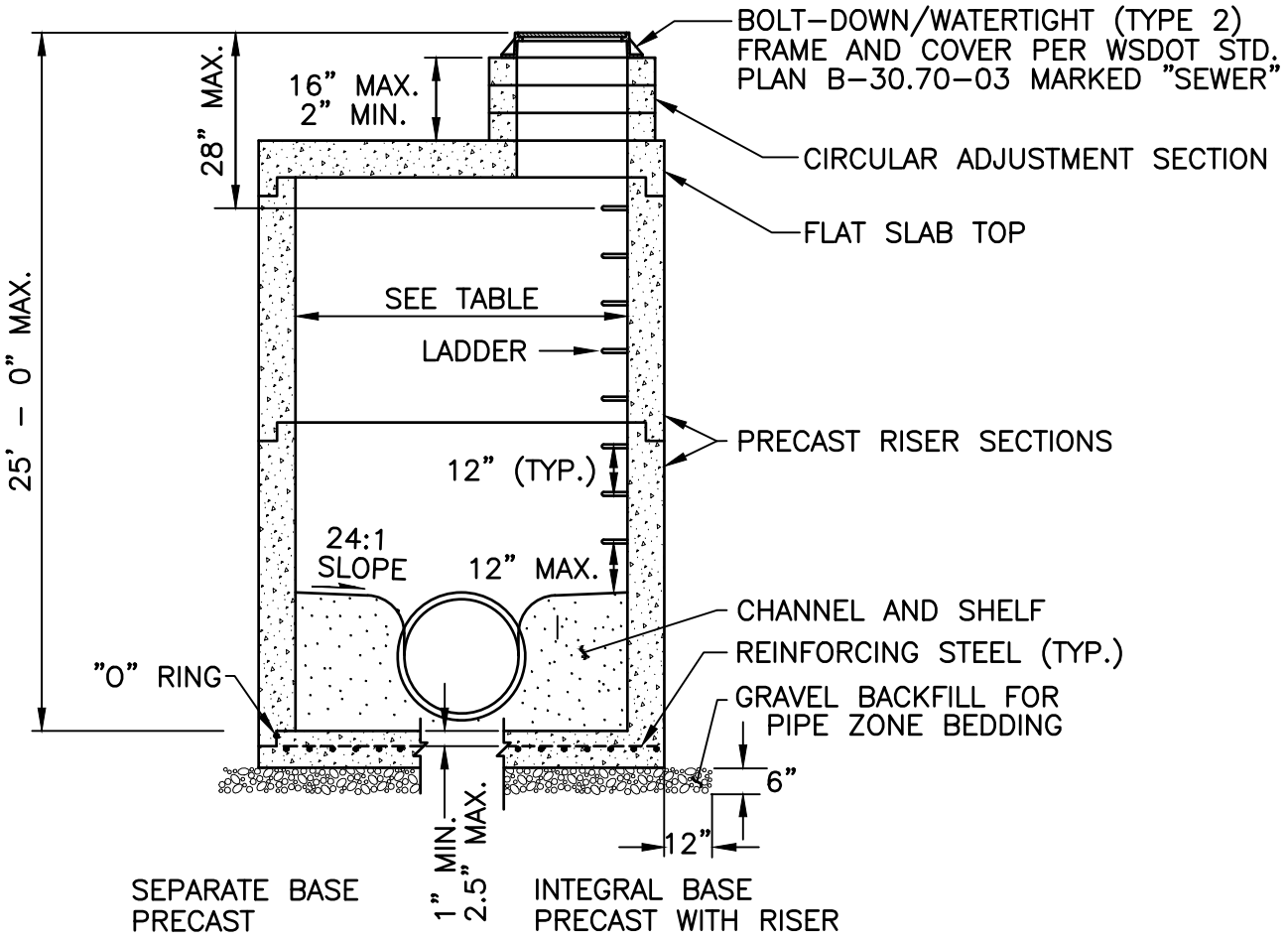
10. All sewer pipe and appurtenances shall be flushed and cleaned prior to being put into service. Debris shall not be allowed into the existing sewer system.

11. The District Engineer shall witness testing. Contractor shall provide the District Engineer 48–hours notice prior to conducting tests or sampling.

12. Pipe shall be tested after backfill by the low–pressure air test method per WSDOT 7–17.3(2)F. PVC pipe shall have a mandrel passed through it to check for any deflections in the pipe per WSDOT 7–17.3(2)G. All sewers shall be television inspected and video delivered to the District, with all costs borne by Contractor, before acceptance. Connection to the existing system is not permitted until final acceptance.

13. Side sewers on private property shall be water tested per WSDOT 7–17.3(2)A and 7–17.3(2)B.

14. Downspouts, foundation/crawl space sump pumps, yard drains, or any outside drains shall not be connected to sanitary sewer mains or services.

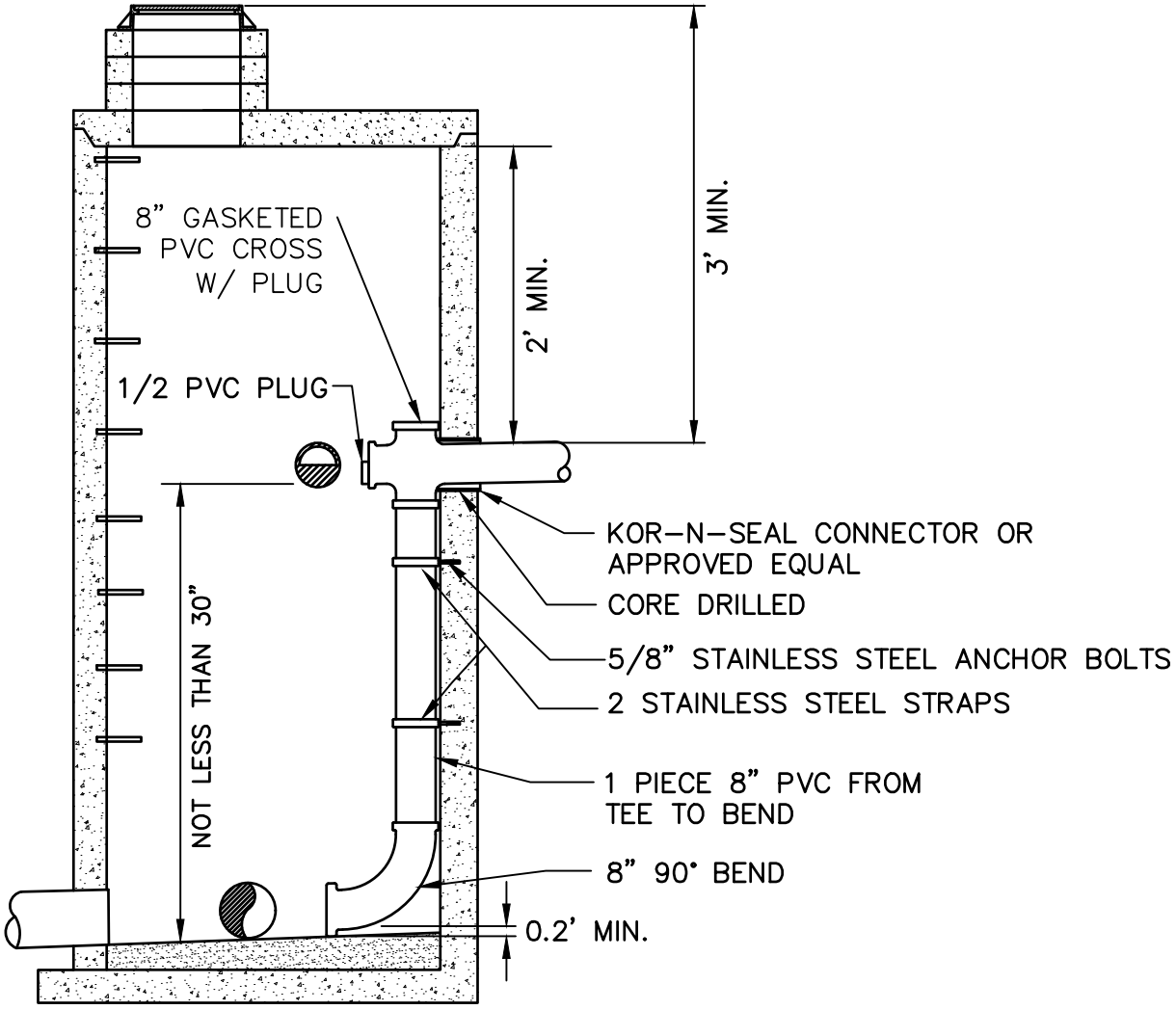


MANHOLE DIMENSION TABLE						
DIAM	MIN. WALL THICKNESS	MIN. BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS	PIPE ALLOWANCES PIPE MATERIAL WITH MAX. INSIDE DIAM.	
					ALL METAL	SOLID WALL PVC
48"	4"	6"	36"	8"	30"	30"
54"	4.5"	8"	42"	8"	36"	36"
60"	5"	8"	48"	8"	42"	42"
72"	6"	8"	60"	12"	54"	48"
84"	8"	12"	72"	12"	60"	48"
96"	8"	12"	84"	12"	72"	48"

NOTES:
1. Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum.

2. No steps are required when height is 4' or less.

BASED ON WSDOT STANDARD PLANS B–15.60–02 AND B–10.20–01.



NOTES:

1. Inside drop manhole shall be installed only where approved the District and when manhole width is minimum 60-inches, unless approved by the District.

2. Drop tee to be installed minimum of 2' below ceiling.

3. Size of manhole will increase with larger diameter pipe and shall be approved by the District Engineer.

4. Channel to outlet.

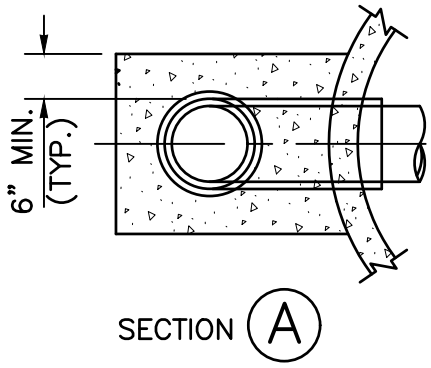
BASED ON CITY OF BELLINGHAM
DRAWING SS-715 DATED 11/29/04.

LAKE WHATCOM WATER & SEWER DISTRICT

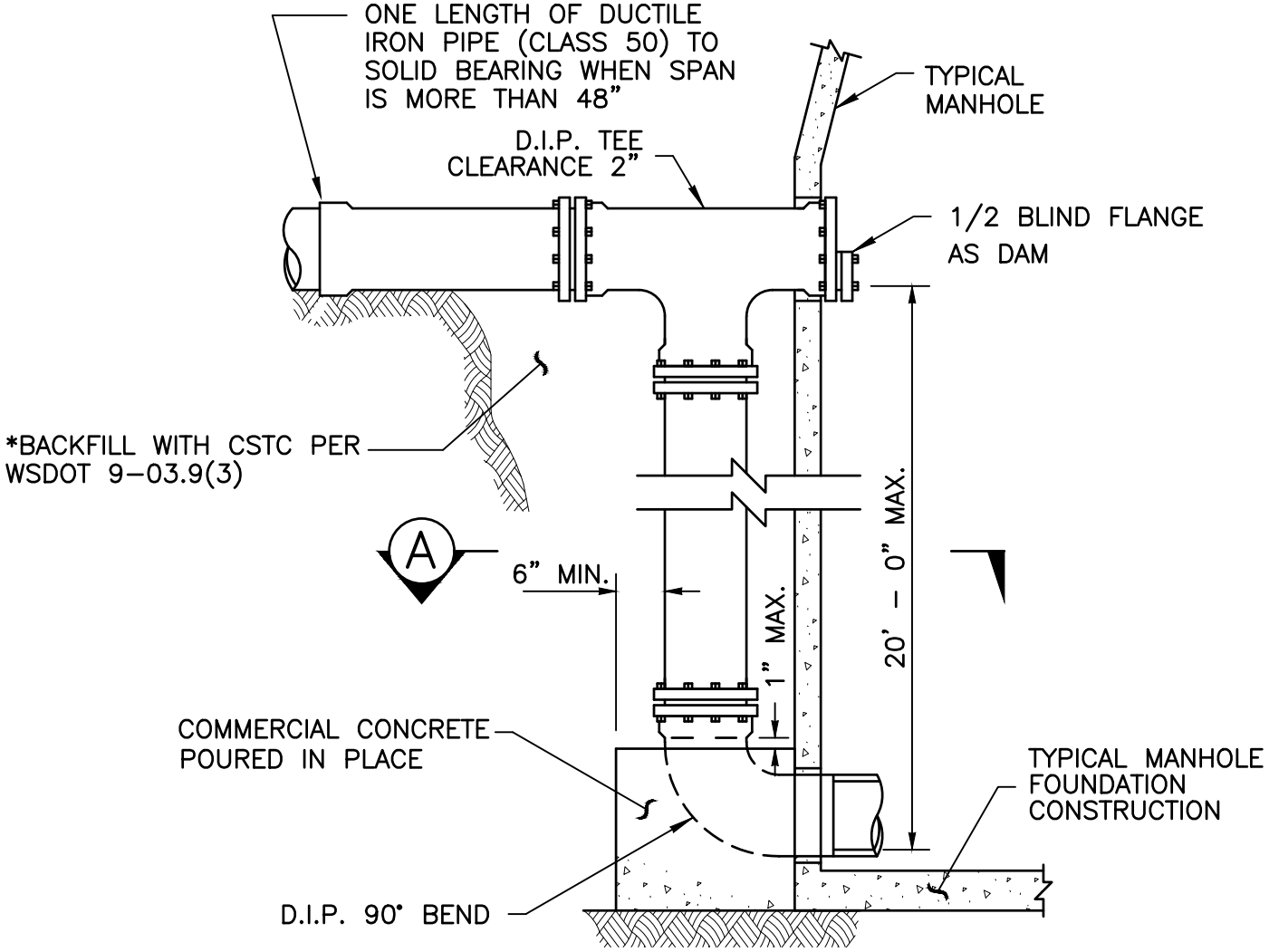
INSIDE DROP SEWER MANHOLE CONNECTION

STANDARD DETAIL

S4



SECTION (A)



NOTES:

1. Outside drop manholes shall be installed only where approved by the District.
2. All pipe shall be minimum Class 52 ductile iron pipe.
3. * Differs from WSDOT Std. Plan B-85.50-01

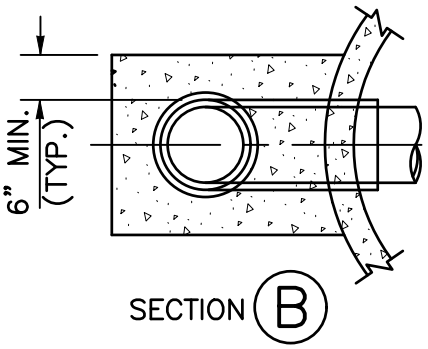
BASED ON WSDOT STANDARD PLAN B-85.50-01 DATED 6/10/08.

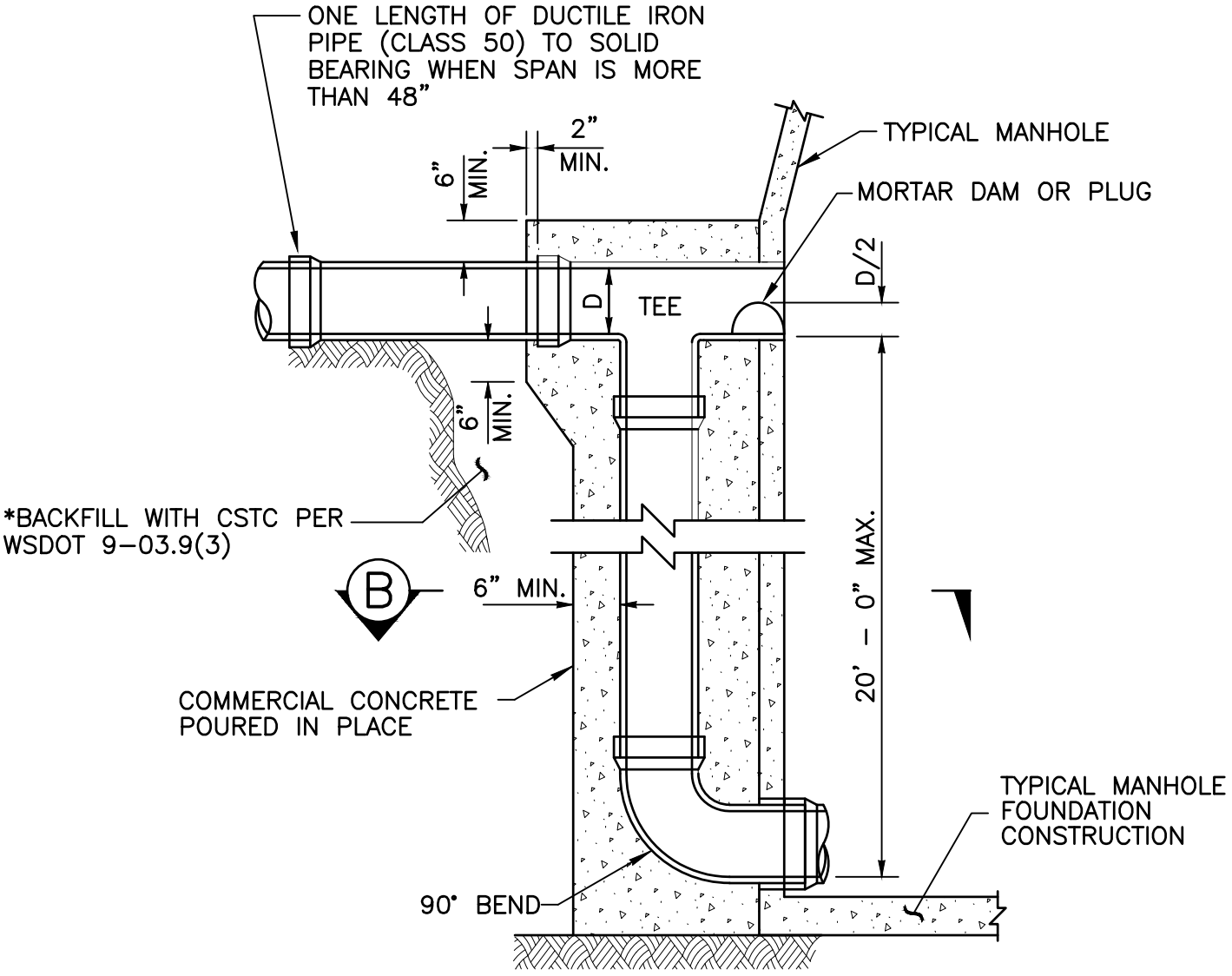
LAKE WHATCOM WATER & SEWER DISTRICT

OUTSIDE DROP SEWER MANHOLE CONNECTION
Sheet 1 of 2

STANDARD DETAIL

S5





NOTES:

1. All pipe, except ductile iron pipe, shall be concrete encased.

2. Outside drop manhole shall be installed only where approved by the district.

3. * Differs from WSDOT Std. Plan B-85.50-01.

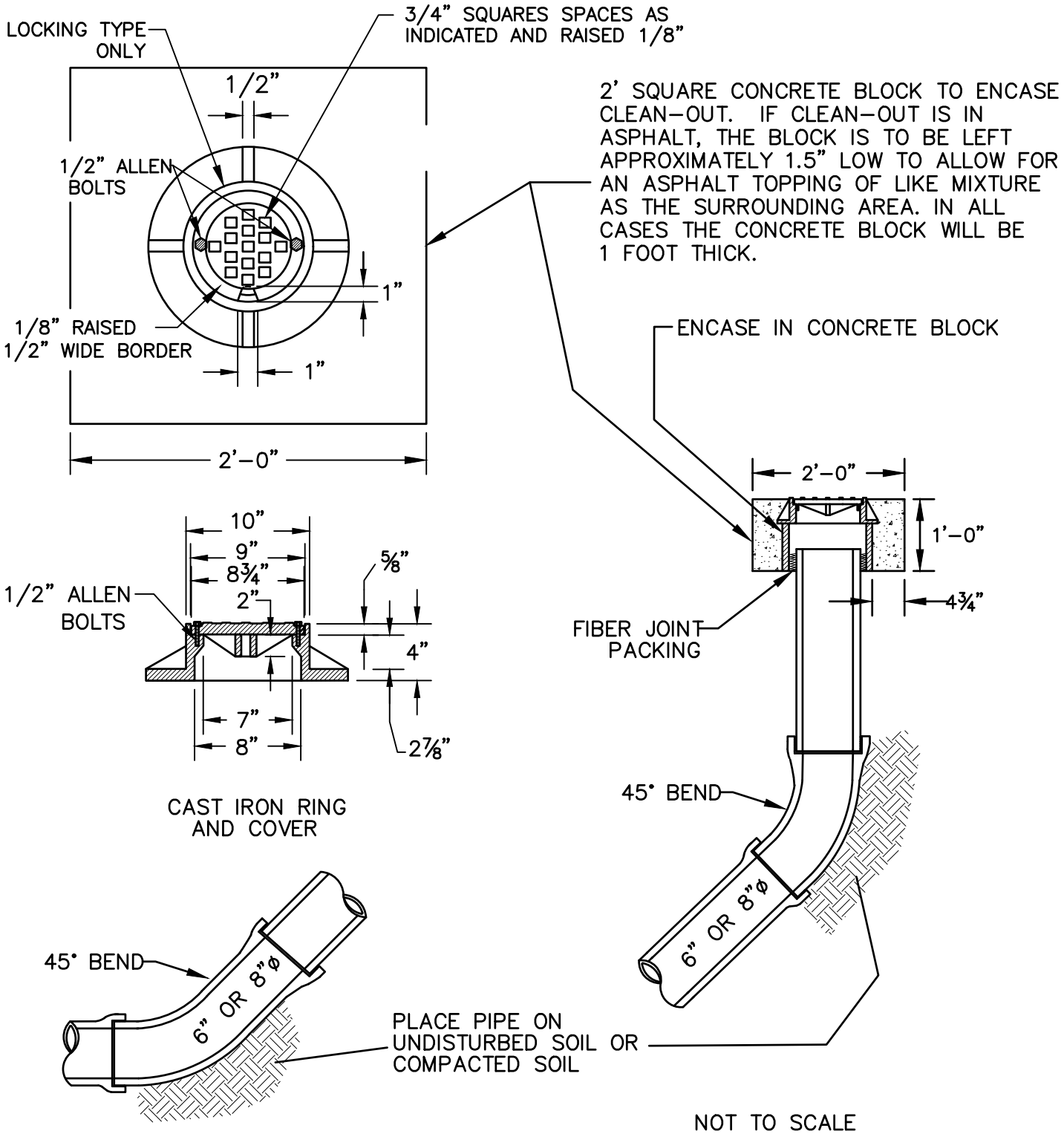
BASED ON WSDOT STANDARD PLAN B-85.50-01 DATED 6/10/08.

LAKE WHATCOM WATER & SEWER DISTRICT

OUTSIDE DROP SEWER MANHOLE CONNECTION
Sheet 2 of 2

STANDARD DETAIL

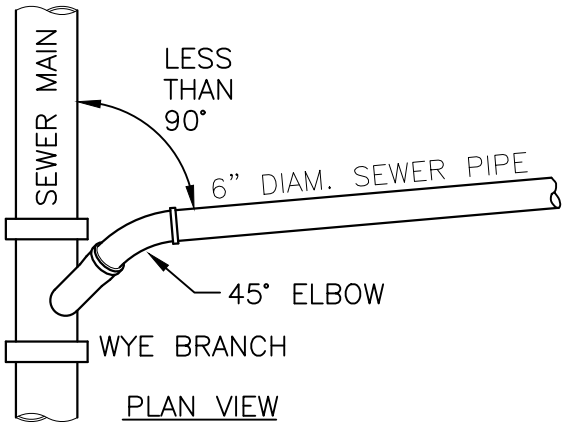
S6

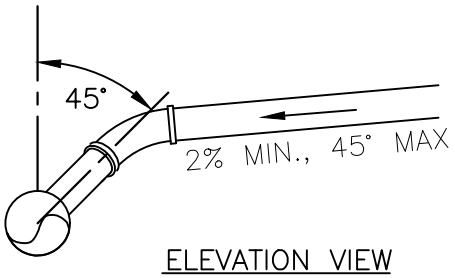


STANDARD DETAIL

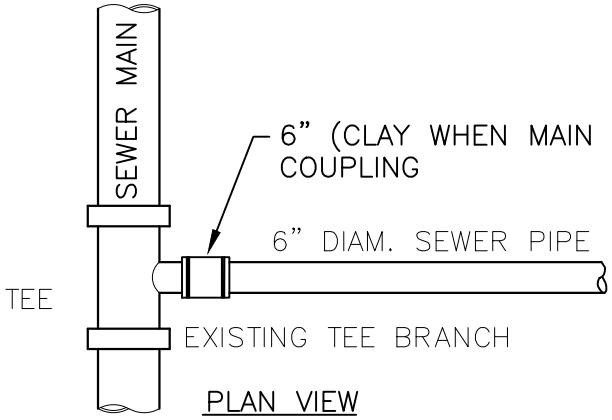
SEWER MAIN CLEANOUT

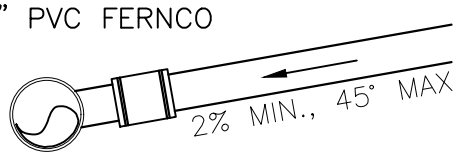
S7



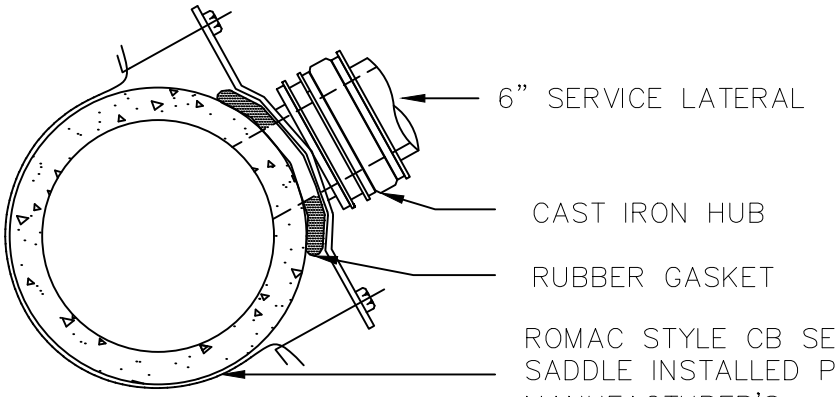


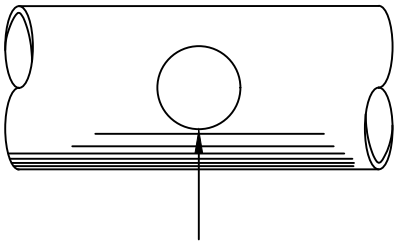
SERVICE LATERAL INSTALLED WITH NEW MAINS





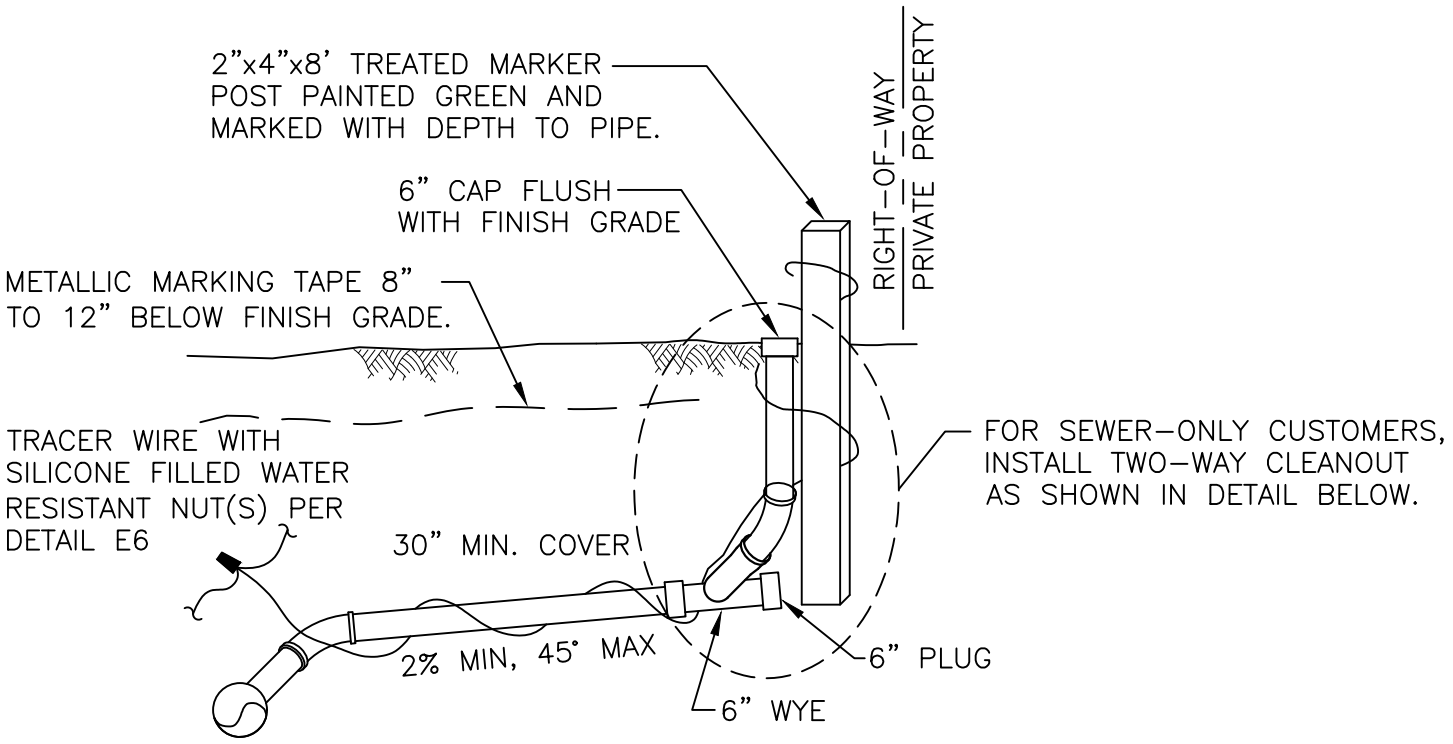
CONNECTION TO EXISTING TEE



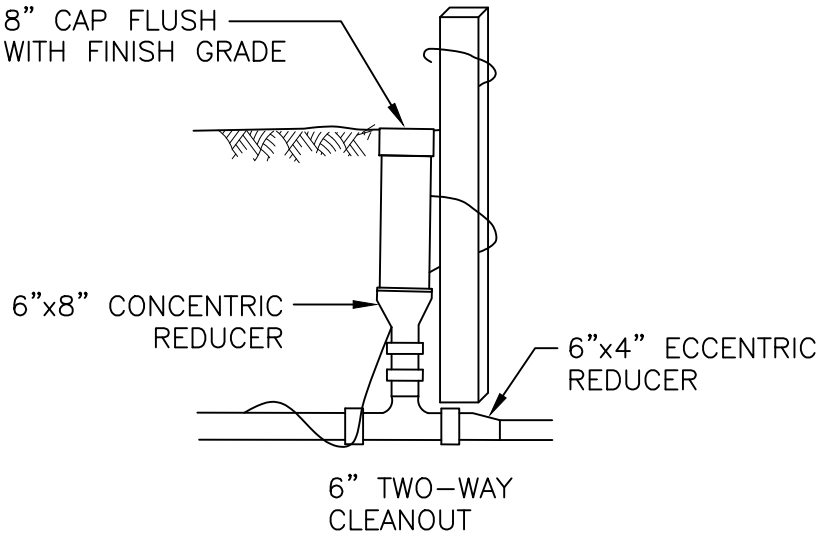


NOTES;
1. Install wye fitting with gaskets for new sewer installations
2. Pipe bedding shall be sand or pea gravel 6" all around. Pea gravel is limited to a 12–inch x 12–inch area around a new tap onto sewer main.
3. Minimum cover to finish grade is 30".
4. Core drill hole then remove coupon. Do not drop coupon into pipe.

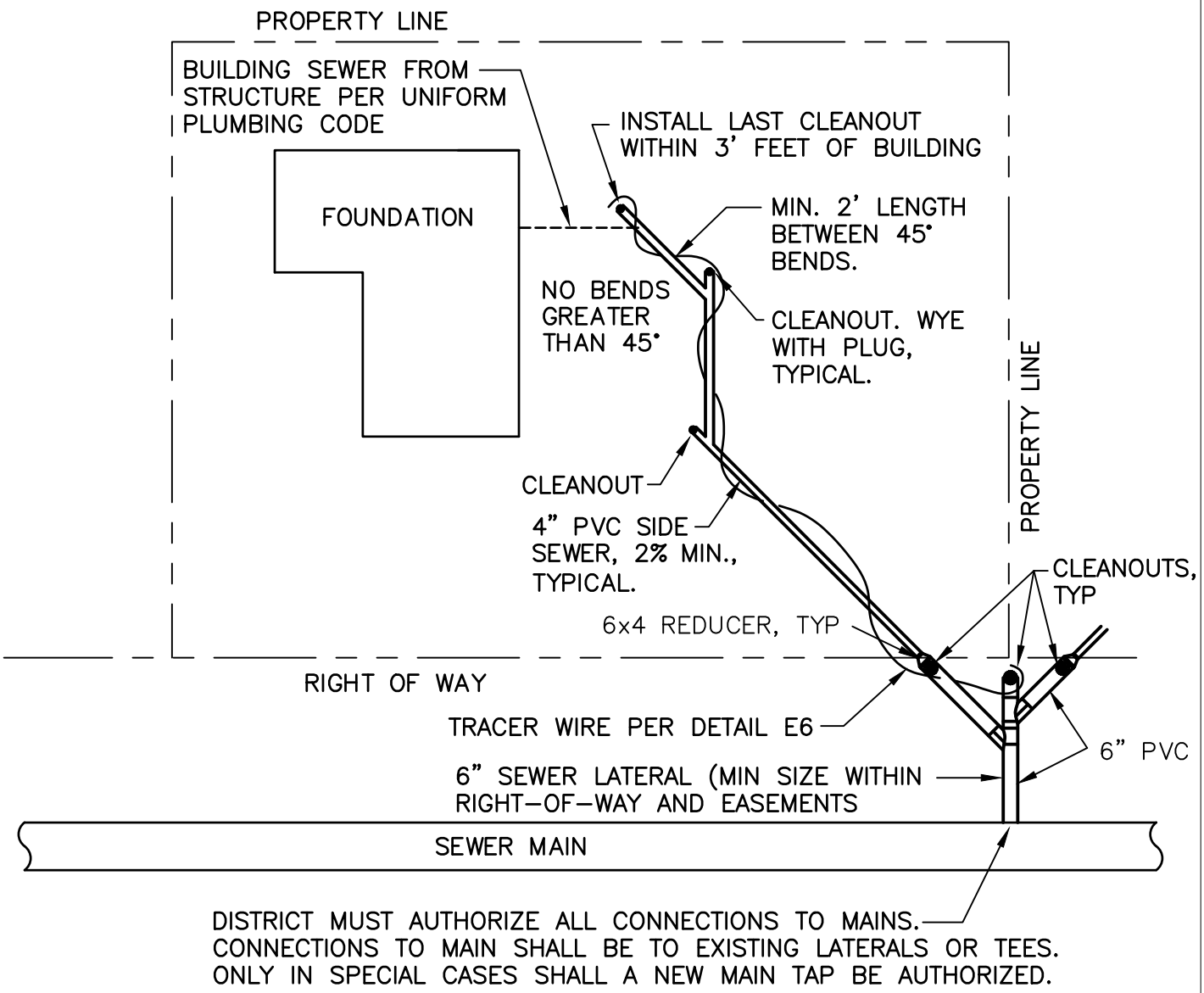
CONNECTION TO EXISTING SEWER (TAP)



TYPICAL SEWER LATERAL & CLEANOUT



CLEANOUT FOR SEWER-ONLY CUSTOMERS.



Notes:

1. All pipe from main to cleanout at foundation shall be PVC ASTM D3034 SDR 35, joints shall conform to ASTM D3212 using elastomeric gaskets conforming to ASTM F477. Fittings shall be injection molded, factory welded, or factory solvent cemented.
2. Minimum 18" of cover from property line to building.
3. Down spouts, sump pumps, outside drains and storm drainage shall not be connected to the sewer line.
4. Bends greater than 45° will not be accepted.
5. Minimum size for sewer lines will be 4" for single family residence and 6" for multi-family residence up to a 4 plex.
6. Cleanouts on service lines shall be installed at every change in alignment or grade in excess of 22 1/2 degrees.
7. Cleanouts shall be spaced no greater than 100' apart.
8. A cleanout shall be installed within 3' of the building.
9. Transitions of different material type shall be with a Romac Style 501 coupling or equal.

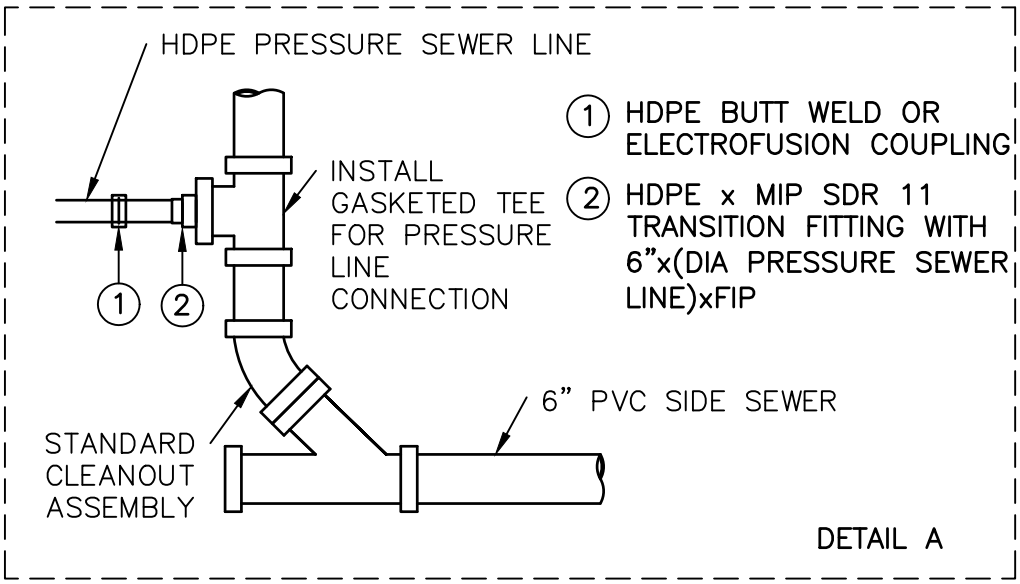
LAKE WHATCOM WATER & SEWER DISTRICT

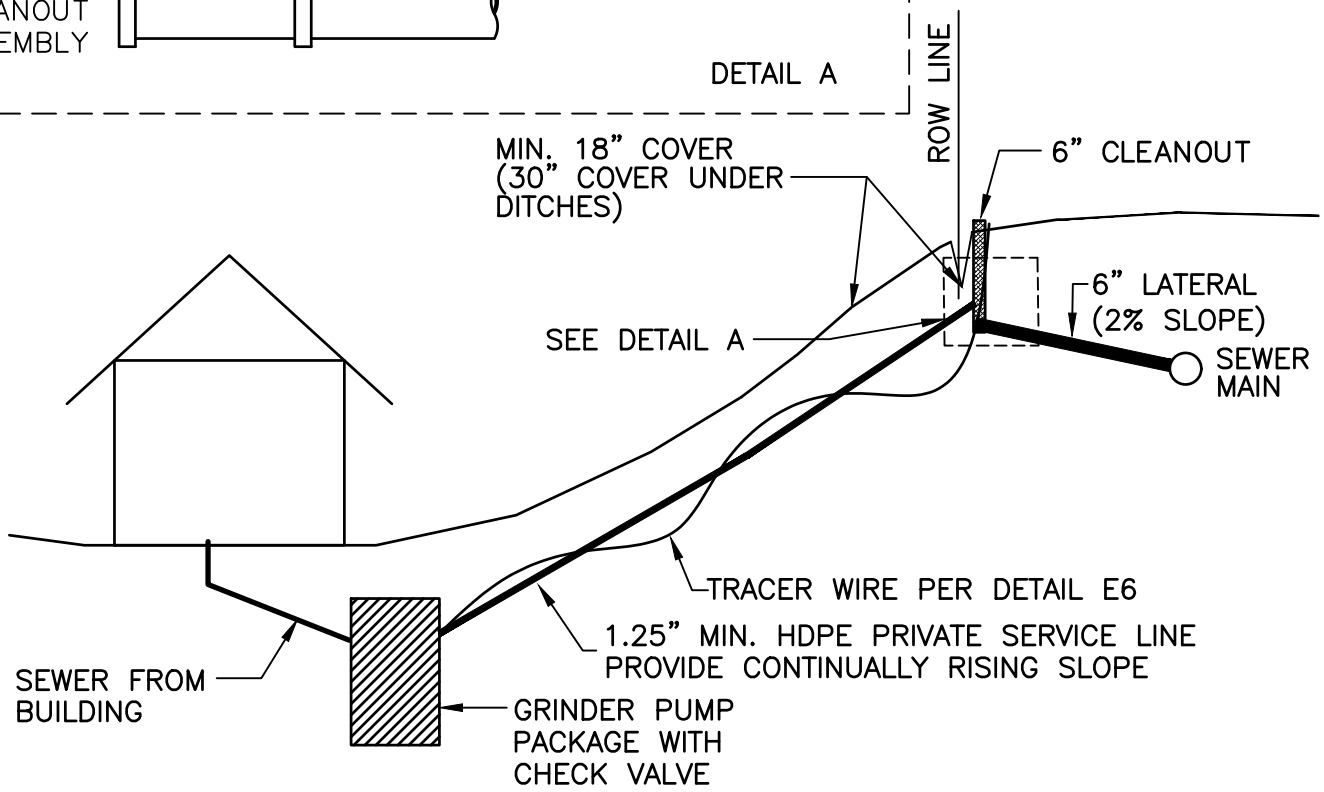
GRAVITY SIDE SEWER INSTALLATION

STANDARD DETAIL

S10

5/1/2014

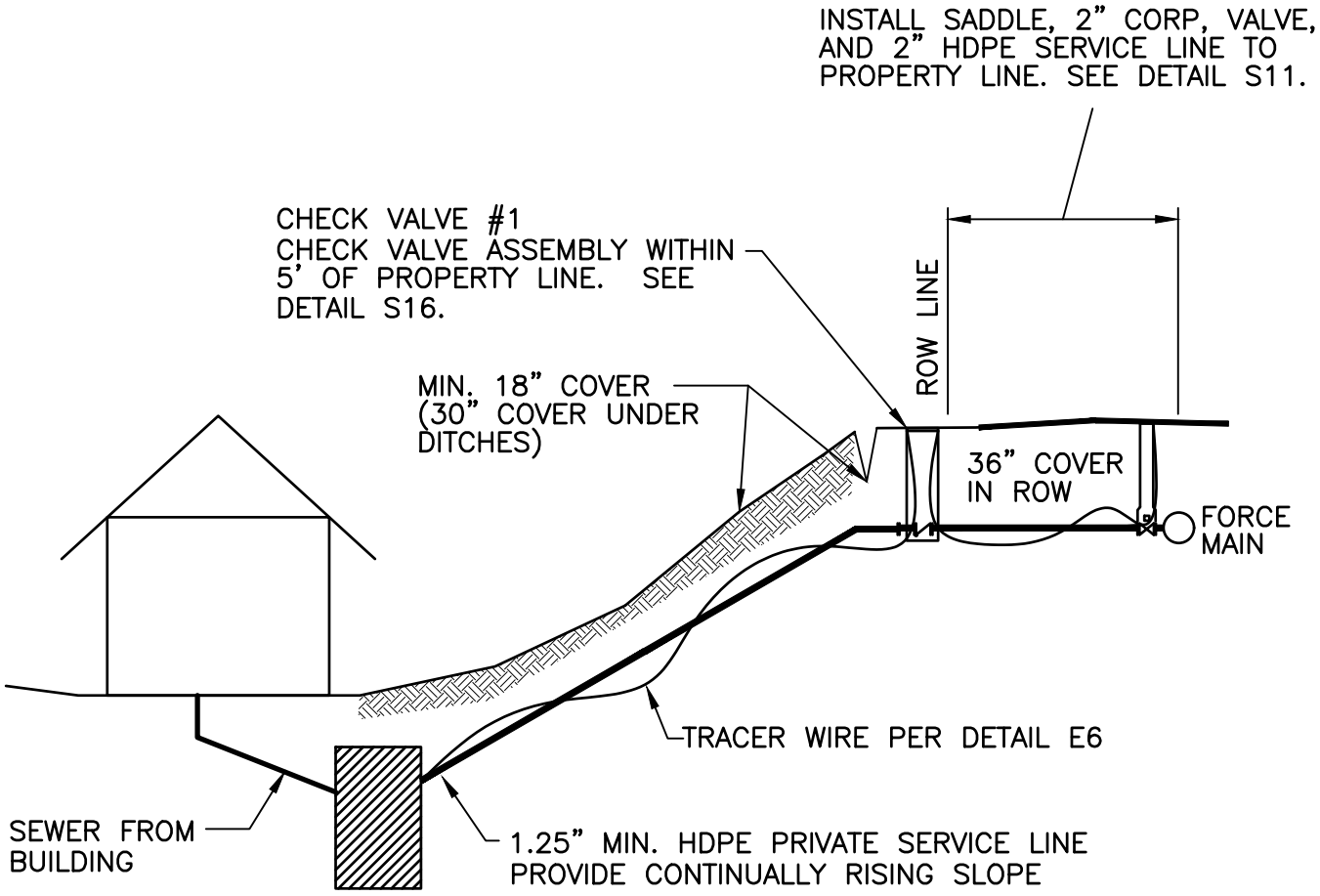




NOTES: SEE DEPT. OF ECOLOGY (DOE) CRITERIA FOR SEWAGE WORKS DESIGN, SECTIONS C1–10.1 & C1–10.2 FOR GRINDER PUMP DESIGN & COMPONENT INFORMATION

1. Pressure sewer service pipe shall be PE 3408 HDPE conforming to the requirements of ASTM D–3350. Piping shall be SDR11, IPS (OD), pressure rated at 160 PSI, conforming to the requirements of AWWA C901 and ASTM F714. Fittings shall be electro–fusion welded socket joints.

2. Grinder pump package shall consist of at least a grinder pump, basin, cover, check valve, controls, and interior and exterior visual and audible alarms (with battery backup for high level alarm), provided by Environment–One (E–One, D–Series Package Grinder Pump System) or approved equal.



GRINDER PUMP (CHECK VALVE #2 AT GRINDER PUMP)

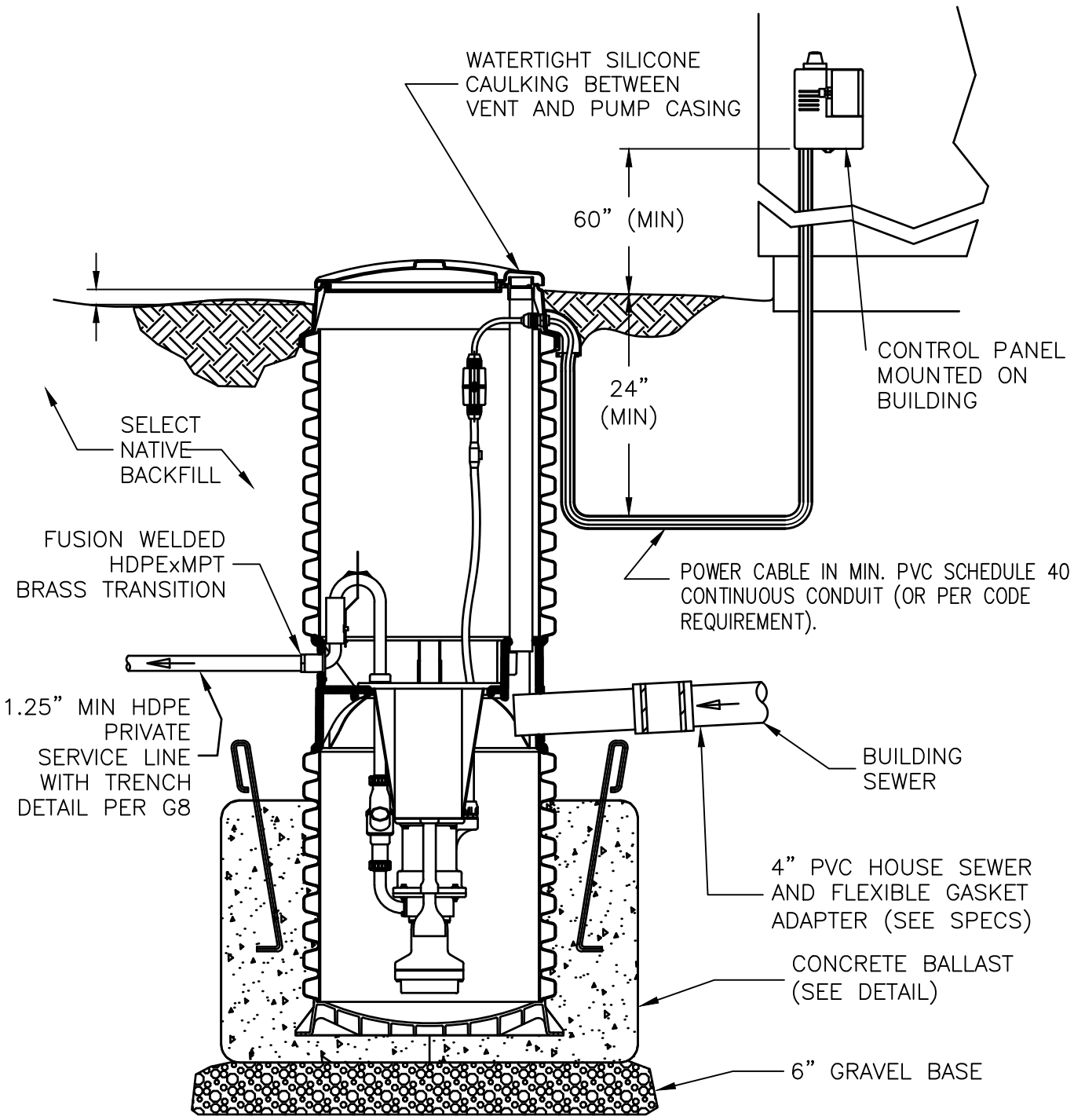
SEE DOE'S CRITERIA FOR SEWAGE WORKS DESIGN, SECTIONS C1–10.1 & C1–10.2 FOR GRINDER PUMP DESIGN & COMPONENT INFORMATION

NOTES:

1. Pressure sewer service pipe shall be PE 3408 HDPE conforming to the requirements of ASTM D–3350. Piping shall be SDR11, IPS (OD), pressure rated at 160 PSI, conforming to the requirements of AWWA C901 and ASTM F714. Fittings shall be electro–fusion welded socket joints.

2. Two check valves are required between the pump station and the force main. One check valve shall be installed within 5' of the right–of–way in the check valve vault. The second valve shall be installed at the grinder pump.

3. Grinder pump package shall consist of at least a grinder pump, basin, cover, check valve, controls, and interior and exterior visual and audible alarms (with battery backup for high level alarm), provided by Environment–One (E–One, D–Series Package Grinder Pump System) or approved equal.



NOTES:

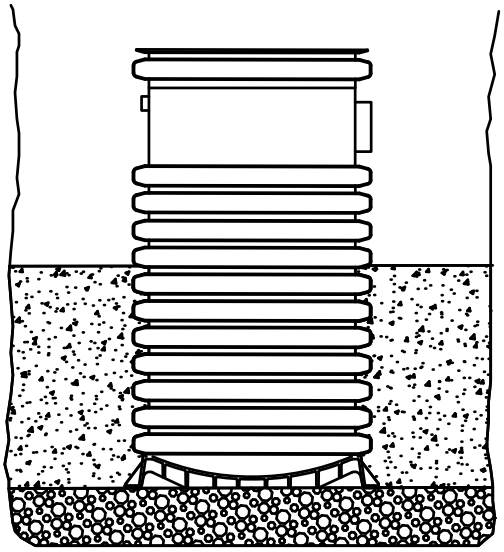
1. Install E/One tank assembly and panel per manufacturer's installation manual and follow requirements for manufacturer's warranty.
2. All fittings shall be Type 316 stainless steel compression fittings.
3. Alarm panel and electrical inspected by others.

LAKE WHATCOM WATER & SEWER DISTRICT

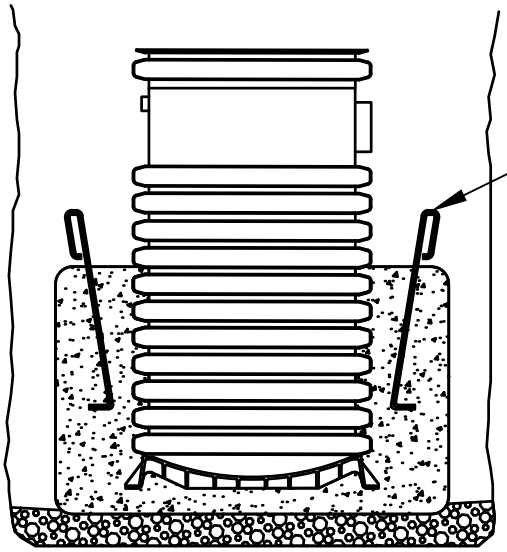
TYPICAL E/ONE GRINDER PUMP INSTALLATION

STANDARD DETAIL

S13



POURED IN PLACE



PRECAST

NOTES

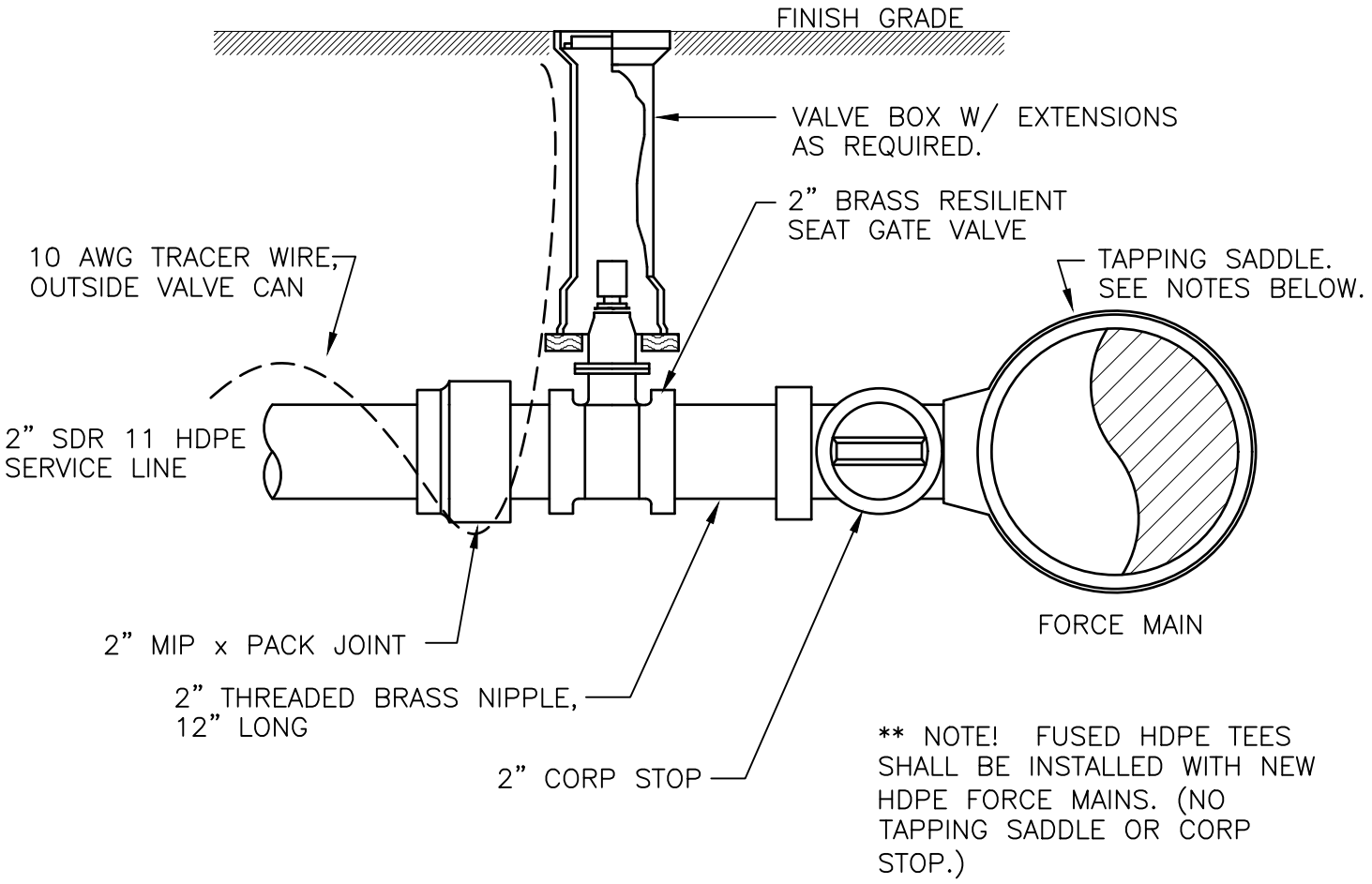
1. PER E/ONE, THE FOLLOWING QUANTITIES OF CONCRETE ARE NECESSARY TO ANCHOR THE TANKS (VERIFY ALL MODEL QUANTITIES WITH MANUFACTURER):
2. ENVIRONMENT ONE MODEL NO. 2010 REQUIRES 370 lbs. (2.5 CU.FT.) PER FOOT OF TOTAL STATION HEIGHT.
3. ENVIRONMENT ONE MODEL NO. 2012 REQUIRES 400 lbs. (2.7 CU.FT.) PLUS 370 lbs. FOR EACH FOOT OF TOTAL STATION HEIGHT.

LAKE WHATCOM WATER & SEWER DISTRICT

GRINDER PUMP INSTALLATION
CONCRETE BALLAST

STANDARD DETAIL

S14



NOTES:

1. HDPE Service Saddles. Saddles for use on SDR 17 HDPE mains shall be epoxy or nylon coated ductile iron tapping saddles with a double stainless steel strapping mechanism specifically recommended by the manufacturer for use on HDPE piping. Saddles shall be Romac style 202N–H or approved equal.

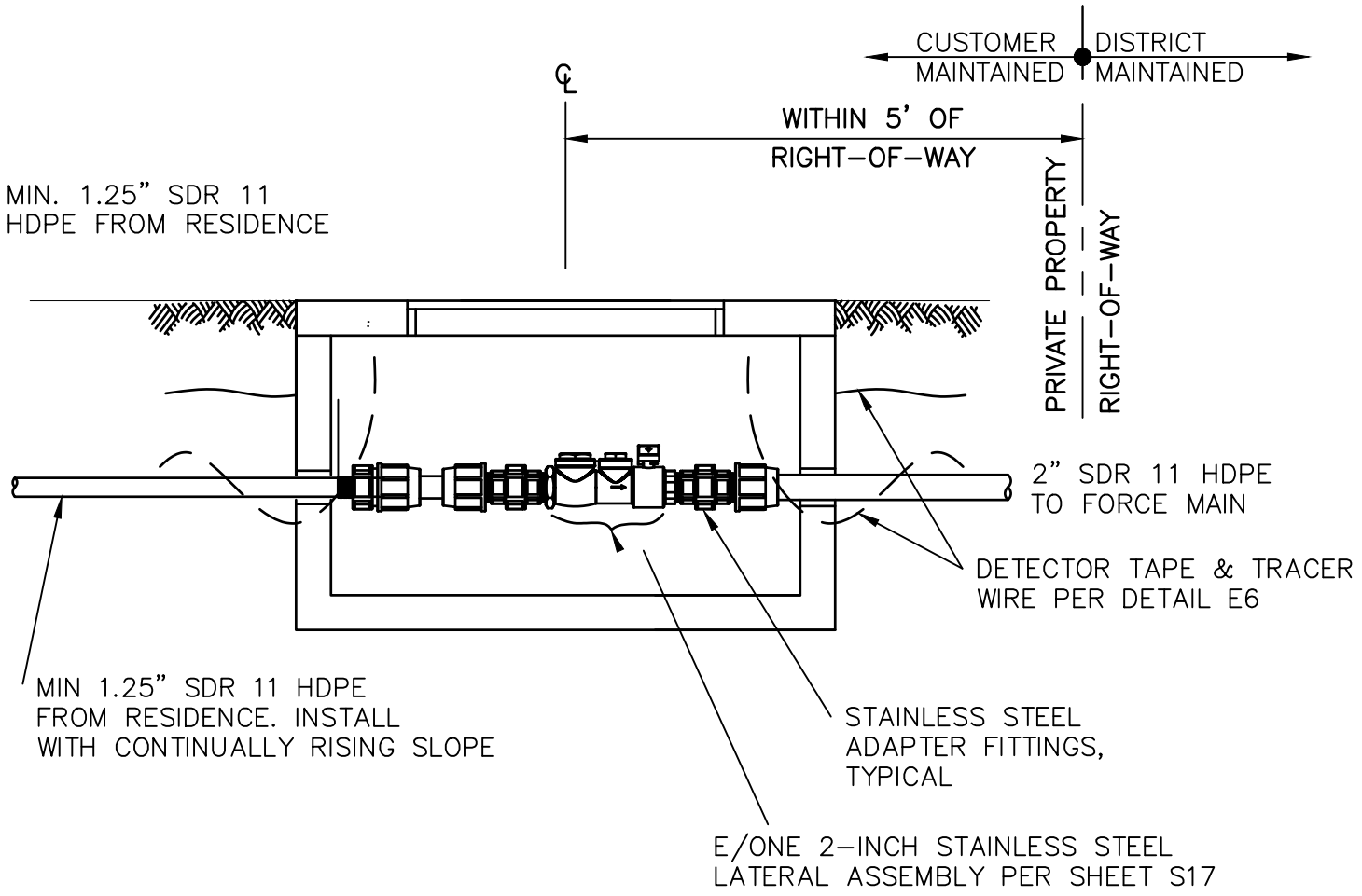
2. PVC Service Saddles. Saddles for use on AWWA C900 PVC mains shall have epoxy or nylon coated ductile iron tapping saddles with a double strap stainless steel strapping mechanism. Service saddles shall be Romac style 202N or approved equal.

3. Ductile Iron Service Saddles. Saddles for use on ductile iron mains shall have epoxy or nylon coated ductile iron tapping saddles with stainless steel tapping mechanism. Service saddles shall be Romac style 101NS or approved equal.

4. Customer Service Shutoff Valves. Shutoff valves shall be resilient wedge type gate valves in conformance with AWWA C515. Valves shall be suitable for sewage service and be equipped with transition gaskets where needed. Gate valves shall have a non–rising stem and be fusion–bonded epoxy coated inside and out meeting AWWA C550. Gate valves shall be Clow resilient wedge gate valves or approved equal.

5. Valve boxes shall have the word "SEWER" cast into the cover.

6. Fittings. All fittings shall be brass.



Notes:

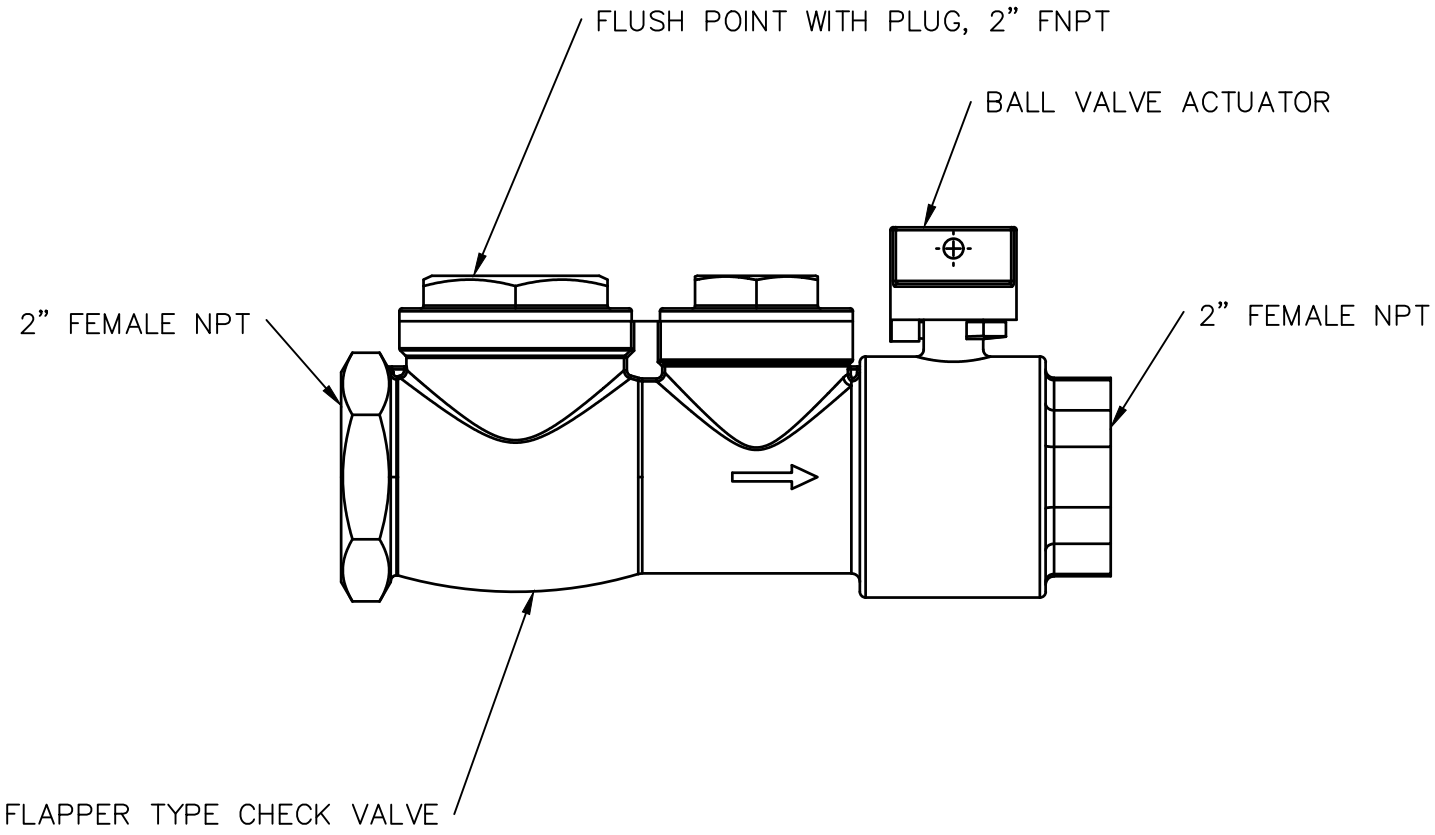
1. Vault. Vault shall be a pre-cast concrete hand hole with a minimum 2'-0" by 3'-0" inside diameter and a maximum 4'-0" inside depth. Hand hole and access hatch shall be traffic rated. Access hatch shall be galvanized steel checker plate with pick holes and bolt down holes in plate and shall be designed for H-20 loading when within or adjacent to roadway or driveways. Lid shall be marked "SEWER" with 2" raised letters. Check valve vaults shall be Utility Vault Model 2436 hand hole or approved equal.

2. Air/Vacuum Valve. Where required, in cases where continually rising slope cannot be obtained, an air relief and combination air relief/ vacuum relief valves shall be installed. Air/Vacuum valve shall be as manufactured by Orenco, Apco, Crispin, ARI, or equivalent for sewer service. All valves shall be on private property and be fully accessible to enable customer's operation, maintenance and repair.

3. Fittings and Adapters. Adapter fittings shall be Type 316 stainless steel. Install with appropriate adapters/union fittings for future maintenance and quick disassembly. All fittings, adapters and pipe shall be rated for minimum 235 psi.

4. Install all fittings and adapters per manufacturer's recommendations.

5. Assembly and pipe shall be pressure tested.



Notes:

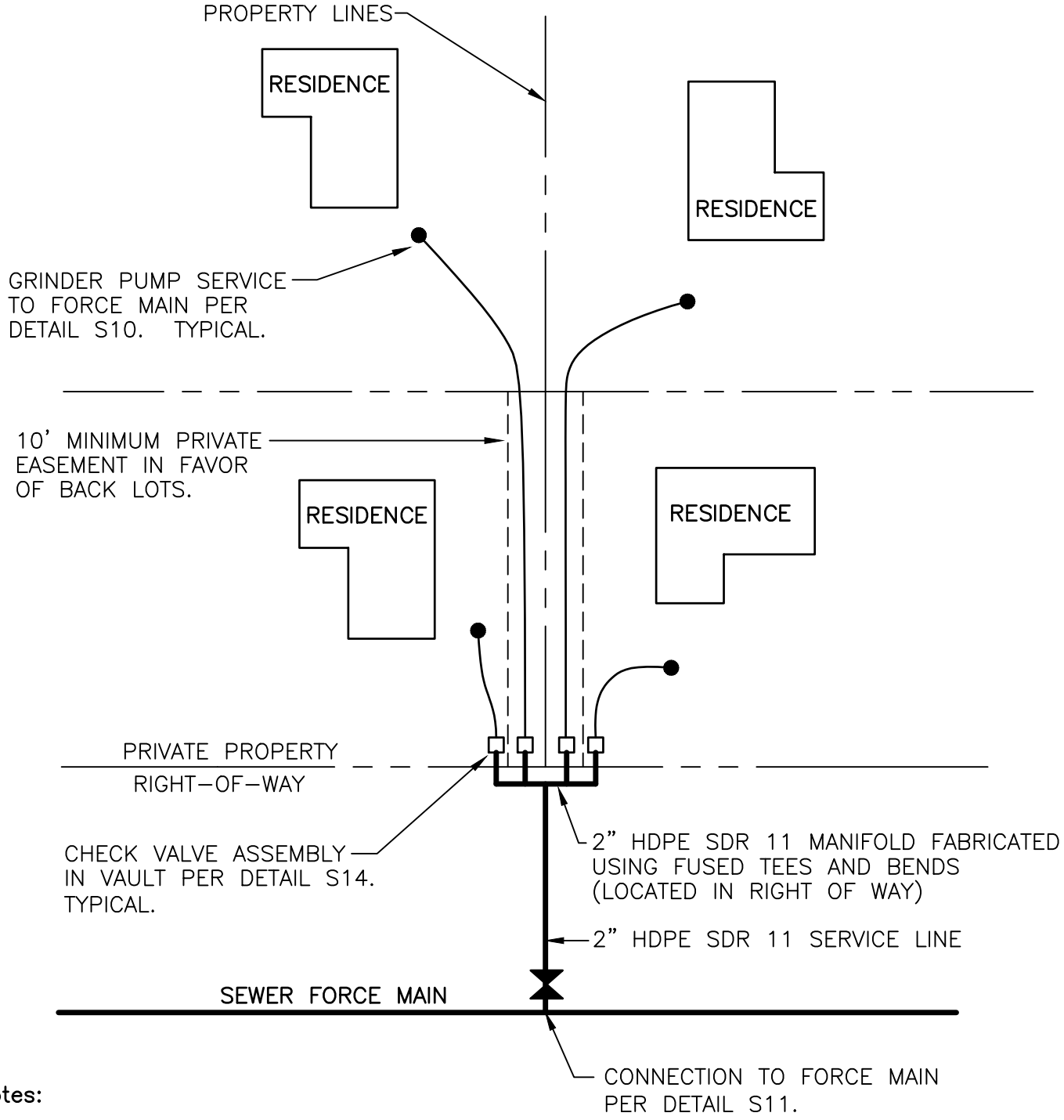
1. Assembly shall be Type 316 stainless steel with min 235 psi pressure rating.
2. Assembly is a ball valve curb stop with female pipe threads, valve position stops (open/closed), with flush point and integral check valve. Assembly shall be E/One 2" Lateral Assembly NC0443P01 or approved equal.

LAKE WHATCOM WATER & SEWER DISTRICT

E/ONE 2" LATERAL ASSEMBLY

STANDARD DETAIL

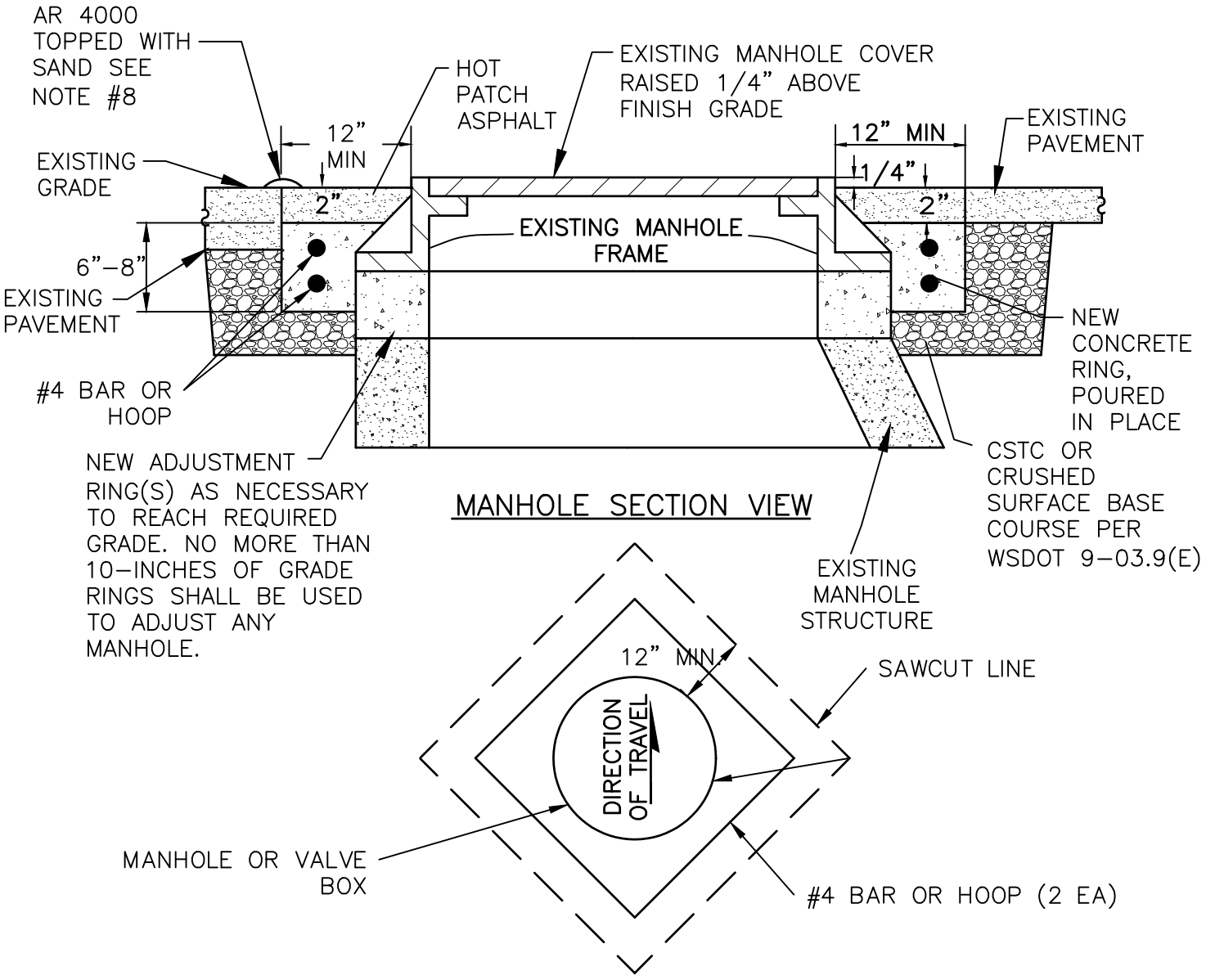
S17



Notes:

1. If approved by the District Engineer, a single 2" service tap may be shared with multiple residences. District will review requests for shared taps on a case by case basis. Property owners desiring to install a shared tap, shall individually but at the same time, submit a sewer permit application with the grinder pump check list for review by the District.

2. Manifold must be fabricated using fused HDPE tees and bends by a contractor certified by a HDPE pipe or fusion machine manufacturer.



MANHOLE SECTION VIEW

PLAN VIEW

Notes

1. All manhole frames and covers shall be removed, cleaned and raised to finished grade.
2. Cut the asphalt or remove shoulder ballast in a diamond pattern around the structure casting to be adjusted (with minimum 12–inches between casting and saw–cut line).
3. Remove the fill material within the cut pavement or shoulder area to 8 inches below finish grade, or to expose adjustment ring.
4. Place the casting at the finish grade.
5. Casting shall be placed so that the smooth edge diamond pattern is oriented with the flow of traffic.
6. All joints shall be grouted with material conforming to WSDOT 9–20.3(2).
7. Place Portland Cement Concrete to within the top 2 inches of finish grade.
8. Apply tack to the structure casting, cut pavement, and PC concrete.
9. Place and compact 2 inches hot mix asphalt patch to finish grade.
10. Seal pavement joints with hot AR4000 and top with sand.

ELECTRICAL, TELECOMMUNICATION AND AUTOMATIC CONTROL NOTES

1. Provide all electrical work and appurtenances in accordance with the latest edition of the National Electric Code (NEC), National Electric Safety Code, Washington State Electrical Code, and local regulations and ordinances.

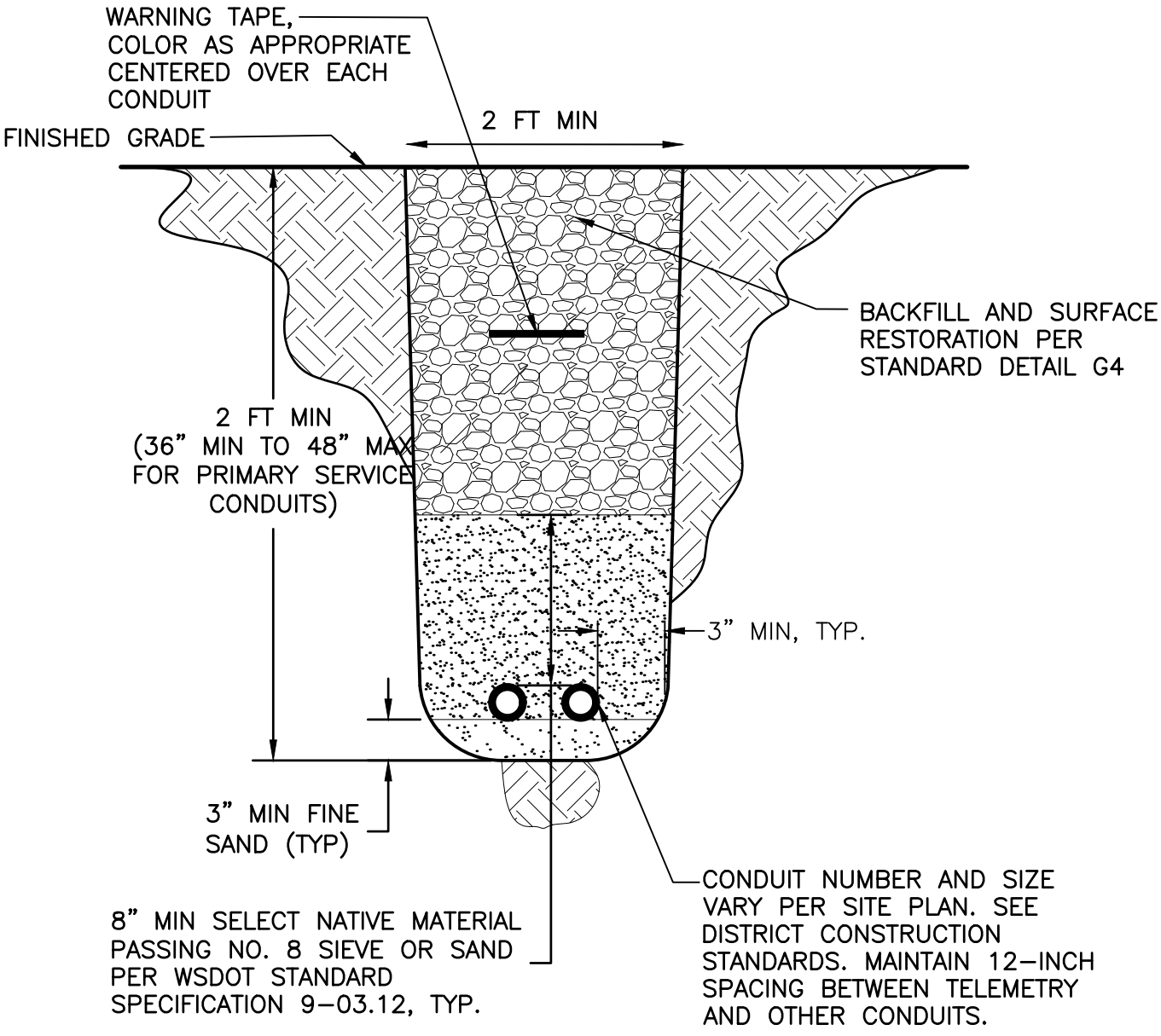
2. All electrical products shall bear a label from a certified testing laboratory recognized by the State of Washington. Recognized labels in the State of Washington are UL, ETL and CSA–US.

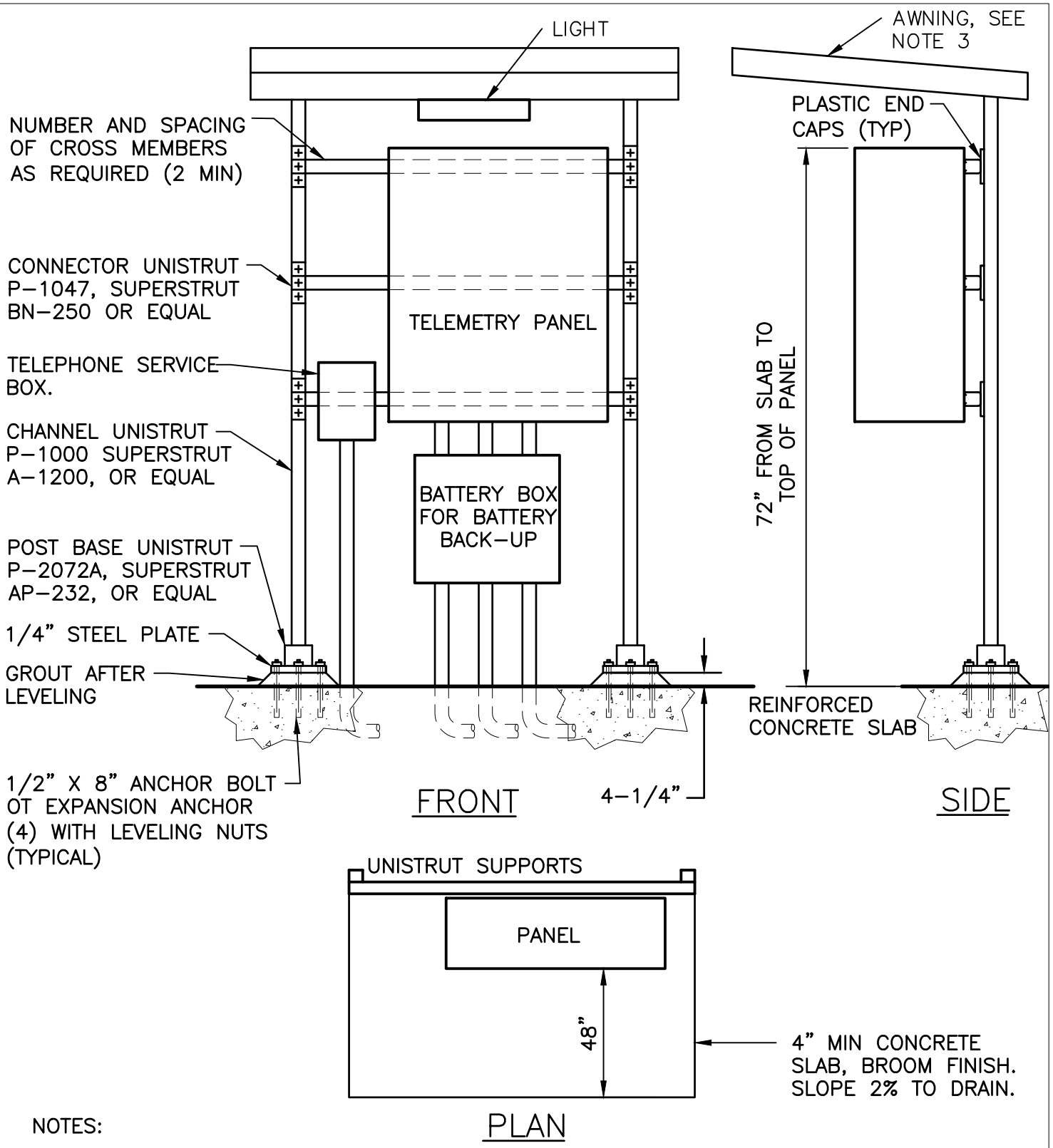
3. The contractor shall coordinate and provide all permits, licenses, approvals and inspections by the authority having jurisdiction, and other arrangements for the work on the project. All fees shall be paid by the Contractor.

4. Test Reports shall be submitted to the Engineer prior to acceptance.

5. Test all circuits for continuity, freedom from ground and proper operation during progress of work.

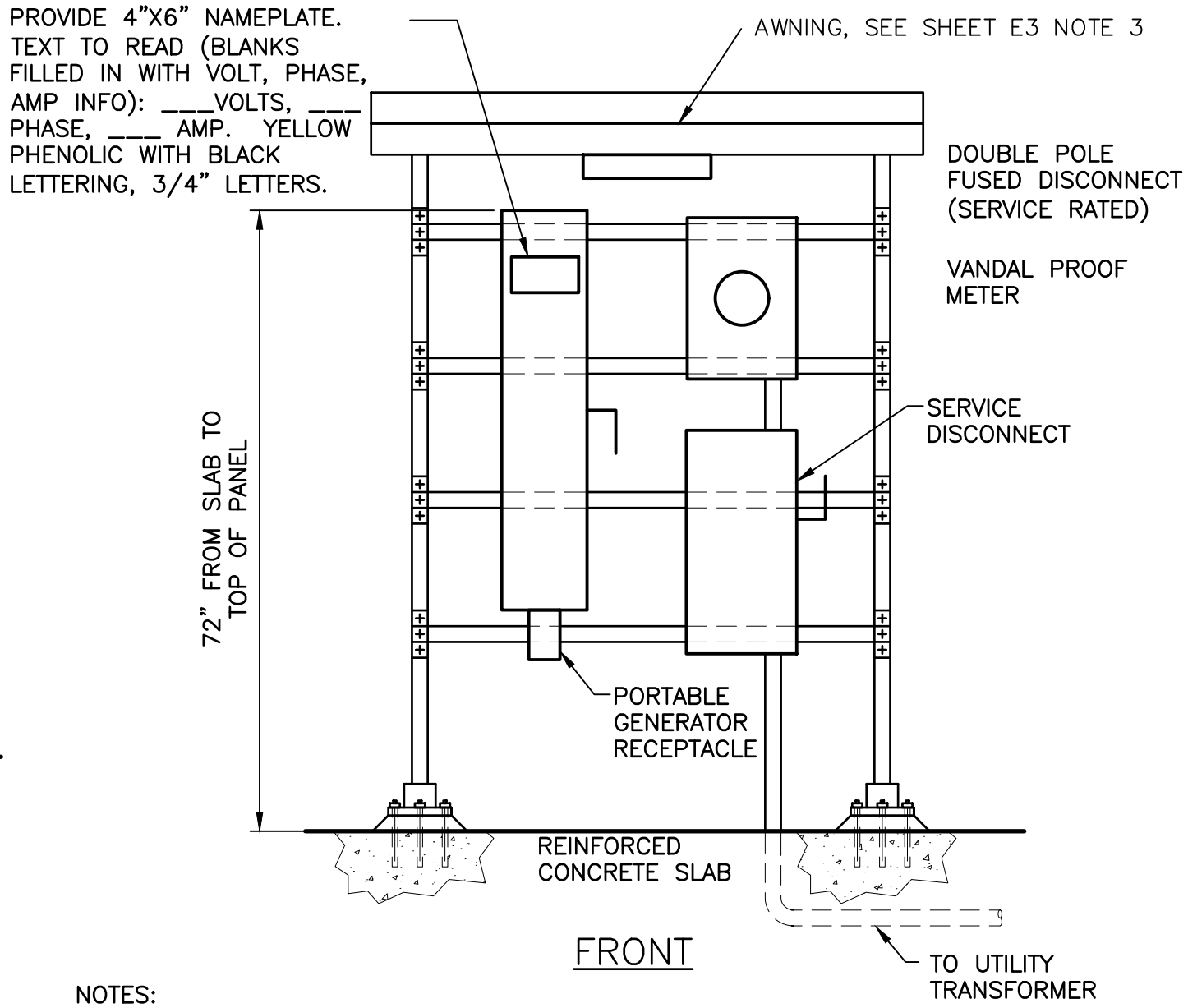
6. Conduct final testing in the presence of the District Engineer.


WARNING TAPE, COLOR AS APPROPRIATE CENTERED OVER EACH CONDUIT
FINISHED GRADE
2 FT MIN
BACKFILL AND SURFACE RESTORATION PER STANDARD DETAIL G4
2 FT MIN (36" MIN TO 48" MAX FOR PRIMARY SERVICE CONDUITS)
3" MIN, TYP.
3" MIN FINE SAND (TYP)
8" MIN SELECT NATIVE MATERIAL PASSING NO. 8 SIEVE OR SAND PER WSDOT STANDARD SPECIFICATION 9-03.12, TYP.
CONDUIT NUMBER AND SIZE VARY PER SITE PLAN. SEE DISTRICT CONSTRUCTION STANDARDS. MAINTAIN 12-INCH SPACING BETWEEN TELEMETRY AND OTHER CONDUITS.



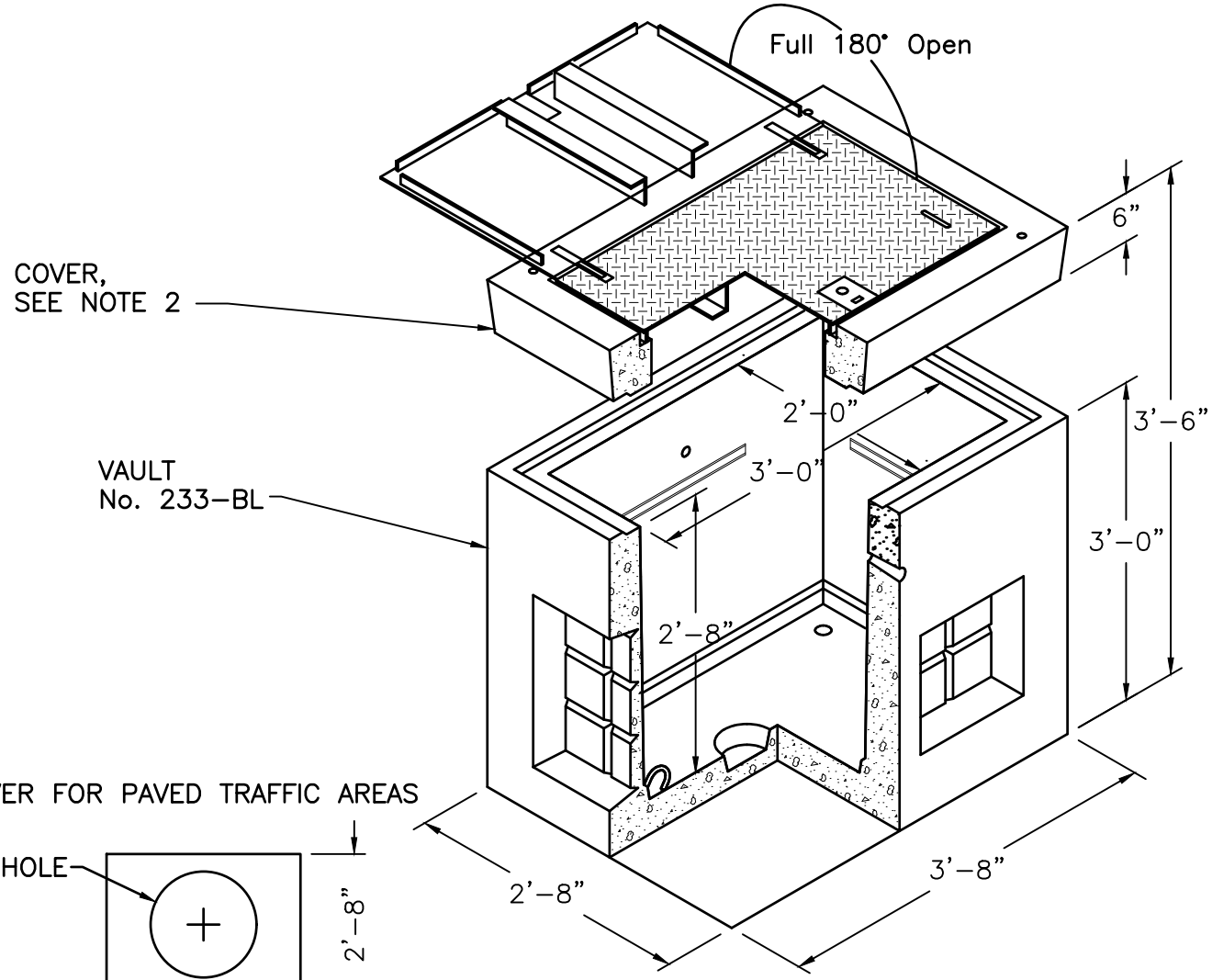
NOTES:

1. Rack channels and fittings shall be hot dipped galvanized steel.
2. Telephone service lines shall be installed in conduit, both above and underground.
3. Provide weatherproof awning with standing seam metal roofing, facia, gutters and downspout routed away from shelter. Roof pitch shall be 3/12 pitch.
4. Bollards required, not shown.



NOTES:

1. See LWWSD Standard Detail E3 – Telemetry Control Panel for unistrut system and concrete slab requirements. Concrete slab shall extend out 48" from face of panels.
2. Utility equipment may be mounted on back of telemetry panel rack.
3. Portable generator receptacle shall be 480 volt, 3–phase, 4 wire service, 100 amp with reversed contacts (female). Receptacle shall be provided complete with cast back box, angle adapter, gaskets, and a gasketed screw–type, weathertight cap with chain fastener. Receptacle shall be Crouse–Hinds "Arktite", Appleton "Powertite", or approved equal.
4. Manual transfer switch shall be a heavy duty (not general or light duty) double–throw MTS, fused as required to comply with NEC as manufactured by Cutler Hammer, Square D, Westinghouse, or equal.
5. All equipment shall be fitted with locking mechanisms, keyed to match District locks, that can be locked in both "ON" and "OFF" positions.
5. Bollards required, not shown.



No. 23–24C WITH 4220 DUCTILE IRON COVER AND FRAME.

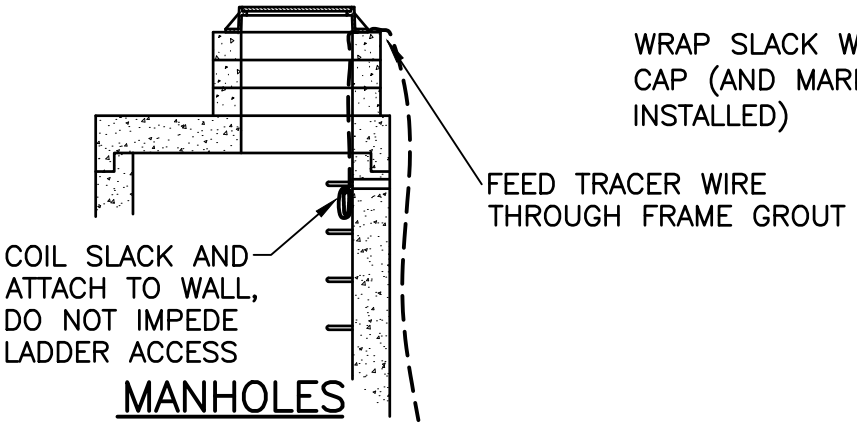
NOTES:

1. Utility Vault base No. 233–LA or approved equal. Dimensions shown as minimum.

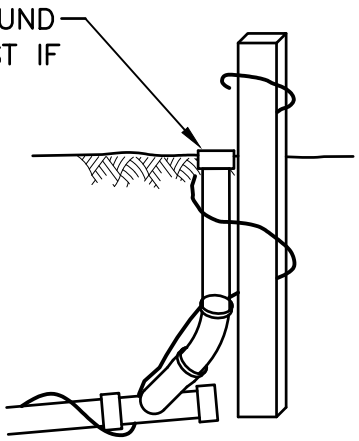
2. Covers shall be rated for H–20 traffic loads. In non–traffic and gravel shoulder areas install hatch cover No. 23–2436P. In paved traffic areas install 4220 Ductile Iron Cover and Frame.

3. Sump knockout in floor, to drain to daylight.

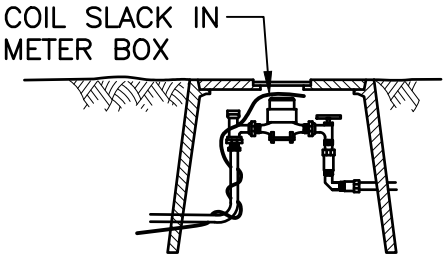
4. Handholes shall be spaced every 500 to 1000 feet and installed at changes in conduit direction.



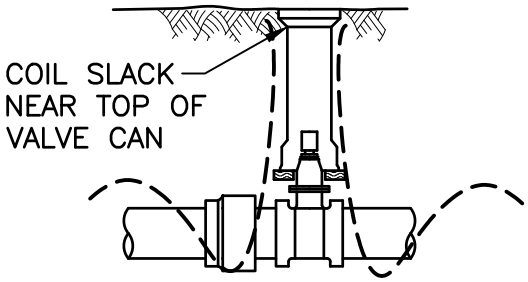
MANHOLES



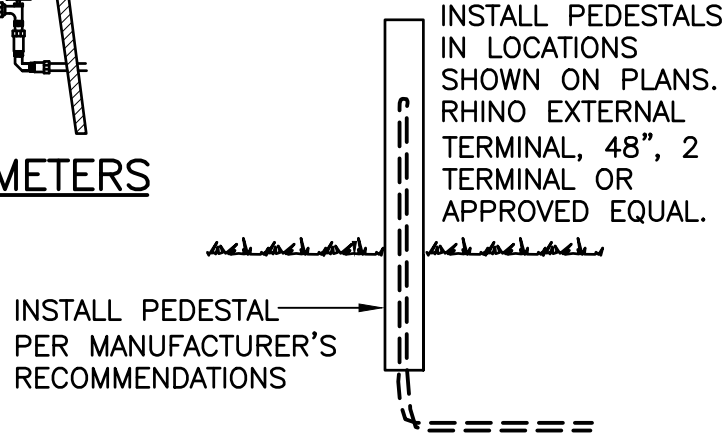
SEWER CLEANOUTS



WATER METERS



VALVE CANS



TRACER WIRE PEDESTAL

NOTES:

1. Tracer wire installation is required on all District owned pipe and communication lines. Tracer wire is also required on private side sewers and water service lines.

2. Tracer wire shall be 10 AWG insulated copper wire rated for direct burial in wet locations. Use green insulation for sewer, blue insulation for water, and orange insulation for fiber/communication related utilities.

3. Install tracer wire in continuous lengths (no splices) between surface access points. Any direct bury splices shall be approved and inspected by the District Engineer prior to cover. Splices shall be made with silicone filled wire nuts rated for direct burial in wet locations such as "Ideal Underground Wire Connectors", "Ideal Mudbug Connectors," "Copperhead Snakebite Connectors," or "3M DBR Direct Bury Splice Kit."

4. Tape tracer wire to pipe at 10–foot intervals.

5. Provide at least 2–feet of coiled tracer wire slack at surface access points.

6. Wrap tracker wire on the outside of valve cans, tape secure.

AGENDA BILL Item 5.C	**Lakeview Street Reservoir Demolition Contract Award**			
DATE SUBMITTED:	March 17, 2020	MEETING DATE:	March 25, 2020	
TO: BOARD OF COMMISSIONERS		FROM: Bill Hunter, Assist. GM/District Engineer		
GENERAL MANAGER APPROVAL				
ATTACHED DOCUMENTS		1. Bid Tabulation		
TYPE OF ACTION REQUESTED		RESOLUTION ☐	FORMAL ACTION/ MOTION ☒	INFORMATIONAL /OTHER ☐

BACKGROUND / EXPLANATION OF IMPACT

This project consists of demolition of the Lakeview Street Reservoir (District Capital Project #C2001). The concrete reservoir was constructed in the 1930s and has been out-of-service since the late 1940s. The reservoir is weathered, structurally deteriorating, does not meet current building codes, and is not suitable for reuse or salvage by the District. In its current state, the reservoir creates a liability to the District, especially considering its direct proximity to a residential home.

The District advertised for bids of this public works project in the Bellingham Herald on February 16, 2020. A non-mandatory pre-bid meeting was held on-site on February 26, 2020. Four bids were received on the March 10, 2020, due date.

Staff has evaluated mandatory and supplemental bidder responsibility criteria and confirmed that Premium Services, Inc. is the lowest responsible, responsive bidder.

FISCAL IMPACT

The contract low bid of $45,895.50, including sales tax, is within the District's 2020 approved budget, which allocates $55,000.00 to this capital improvement project.

RECOMMENDED BOARD ACTION

Staff recommends that the Board award the Lakeview Street Reservoir Demolition contract to Premium Services, Inc.

PROPOSED MOTION

Recommended motion is:

> "I move to award the Lakeview Street Reservoir Demolition contract to Premium Services, Inc. for a total contract price of $45,895.50, including 8.5% sales tax, and authorize the General Manager to execute the contract."

LAKE WHATCOM WATER & SEWER DISTRICT
1220 LAKEWAY DRIVE
BELLINGHAM, WA 982298
(360) 734-9224

BID TABULATION

PROJECT NAME	PROJECT #	BID OPENING DATE & TIME	PAGE # OF #	LOCATION
Lakeview Street Reservoir Demolition	C2001	3/10/2020 2:10 PM	1 OF 1	LAKE WHATCOM WATER & SEWER DISTRICT BOARD ROOM

NAME OF FIRM	WESTERN REFINERY SERVICES, INC.	PREMIUM SERVICES, INC.	RAZZ CONSTRUCTION, INC.	HENIFIN CONSTRUCTION, LLC

Item	Description	Quantity	Unit		Unit Price	Amount	Unit Price	Amount	Unit Price	Amount	Unit Price	Amount
BASE BID - LAKEVIEW STREET RESERVOIR DEMOLITION												
1	Reservoir Demolition	1	LS		N/A	$ 55,750.00	N/A	$ 36,800.00	N/A	$ 43,650.00	N/A	$ 51,329.37
2	Site Restoration	1	LS		N/A	$ 10,550.00	N/A	$ 5,500.00	N/A	$ 11,000.00	N/A	$ 10,989.53
	Sub Total Base Bid (does not include Washington State Sales Tax)					$ 66,300.00		$ 42,300.00		$ 54,650.00	$	$ 62,318.90

BID GURANTEE FOR PROJECTS OVER $35,000? (YES OR NO)	YES	YES	YES	YES
ADDENDUM ACKNOWLEDGED? (YES OR NO)	N/A	N/A	N/A	N/A

AGENDA BILL Item 5.D	**Discussion regarding Potential Customer Relief Measures related to the COVID-19 Pandemic**			
DATE SUBMITTED:	March 17, 2020	MEETING DATE:	March 25, 2020	
TO: BOARD OF COMMISSIONERS		FROM: Justin Clary, General Manager		
GENERAL MANAGER APPROVAL				
ATTACHED DOCUMENTS		1. None		
TYPE OF ACTION REQUESTED		RESOLUTION ☐	FORMAL ACTION/ MOTION ☐	INFORMATIONAL /OTHER ☒

BACKGROUND / EXPLANATION OF IMPACT

It is unknown at this time what the overall impact of the COVID-19 coronavirus pandemic will be on the world. What is known is that impacts will expand well beyond direct health impacts, as the economy continues to weaken relative to the pandemic. With the faltering economy will be direct impacts to many of our customers, which will affect their ability to make timely payments of their water and/or sewer utility bills. District Administrative Code Section 2.8 and the District Master Fees and Charges Schedule already allow some flexibility to staff to provide relief to our customers relative to payment of utility bills:

- Late Fee Write-off. The Master Fees and Charges Schedule provides the General Manager authority to write-off late fees once per year per customer account.
- Payment Plan. The Administrative Code allows for the Finance Manager to develop a payment plan to avoid shut-off of service, placing a lien against a property, or pursuit of payment collection.

However, these are unprecedented times that may call for approval of additional, temporary measures by the Board of Commissioners to provide supplemental relief to our customers. During his March 18, 2020, press conference, Washington Governor Jay Inslee made a request that utilities consider additional measures to mitigate impacts to those that have been economically effected by the pandemic. Measures could include a no shut-off policy, expansion of the ability to write-off late fees, etc. Whatever measures may ultimately be enacted, District counsel will need to provide an opinion on whether or not such actions are legal and do not constitute a gifting of public funds.

FISCAL IMPACT

Actual fiscal impacts will be dependent upon what formal action(s) the Board may take during a future, regularly scheduled meeting.

RECOMMENDED BOARD ACTION

No customer shut-offs are currently scheduled between March 25 and the next regularly scheduled Board meeting (April 8). Therefore, no action is recommended at this time, but staff requests general direction from the Board regarding what measures they would like to formally consider during the April 8, or later, meeting.

PROPOSED MOTION

Not applicable.

AGENDA BILL Item 7.A.	**General Manager's Report**			
DATE SUBMITTED:	March 19, 2020	MEETING DATE:	March 25, 2020	
TO: BOARD OF COMMISSIONERS		FROM: Justin Clary		
GENERAL MANAGER APPROVAL				
ATTACHED DOCUMENTS		1. General Manager's Report		
TYPE OF ACTION REQUESTED		RESOLUTION ☐	FORMAL ACTION/ MOTION ☐	INFORMATIONAL /OTHER ☒

BACKGROUND / EXPLANATION OF IMPACT

Updated information from the General Manager in advance of the Board meeting.

FISCAL IMPACT

None.

RECOMMENDED BOARD ACTION

None required.

PROPOSED MOTION

None.

LAKE WHATCOM WATER AND SEWER DISTRICT

General Manager's Report

Upcoming Dates & Announcements

Regular Meeting – Wednesday, March 25, 2020 – 8:00 a.m.

Important Upcoming Dates (Note—all meetings are tentative based upon COVID-19)

Lake Whatcom Water & Sewer District			
Regular Board Meeting	Wed Apr 8, 2020	6:30 p.m.	Board Room
Employee Staff Meeting	Thu Apr 9, 2020	8:00 a.m.	Board Room Commissioner Carter to attend
Investment Comm Meeting	Wed Apr 29, 2020	10:00 a.m.	Small Conference Room
Safety Committee Meeting	Tue Apr 21, 2020	10:00 a.m.	Small Conference Room
Lake Whatcom Management Program			
Data Group Meeting	Thu Apr 9, 2020	9:00 a.m.	City of Bellingham PW Offices 2221 Pacific Street
Policy Group Meeting	Wed Jun 17, 2020	3:00 p.m.	City of Bellingham Fireplace Room 625 Halleck Street
Joint Councils Meeting	2020 Meeting Cancelled	NA	NA
Other Meetings			
WASWD Section III Meeting	Tue May 12, 2020	6:15 p.m.	Bob's Burgers, 8822 Quil Ceda Pkwy, Tulalip, WA
Whatcom Water Districts Caucus Meeting	Wed Apr 15, 2020	1:00 p.m.	Board Room
Whatcom County Council of Governments Board Meeting	Wed May 13, 2020	3:30 p.m.	Council of Governments Offices 314 E Champion Street

Committee Meeting Reports

Safety Committee:

- Committee met on March 17. Discussion included ongoing protection of employees and public from the COVID-19 coronavirus; status of review of safety programs and equipment noise study, and an update on various safety training certifications.

Investment Committee:

- No meeting has been held since the last board meeting.

Upcoming Important Board Meeting Topics

- Dellesta/Edgewater Lift Stations Improvement Construction Contract Award (April 8)
- On-call Electrical Engineer Contract Award (April 8)
- Revision to Utility Bill Payment Period (future meeting)
- Sudden Valley Area Z Developer Extension Agreement Project Acceptance (future meeting)

2020 Initiatives Status

Administration and Operations

Level-of-Service Analysis

- Facilitate Board development of level-of-service standards for District operations.
  Staff have begun the initial stages of framing the policy conversation.

Six-Year Business Plan

- Develop department-specific business plans that define staffing, facility, and equipment needs necessary to meet level-of-service standards over the six-year planning horizon.
  To be initiated following completion of the level-of-service analysis.

Rate Study

- Conduct rate study for the water and sewer utilities for the five-year planning horizon.
  To be initiated following completion of the 2020 Comprehensive Sewer Plan, the Sudden Valley Water Treatment Plant Facility Improvement Plan, and the Six-Year Business Plan.

Biennial Budget

- Facilitate Board consideration of shifting from an annual to a biennial budget.
  Staff plans to complete in late spring/early summer.

Bond Rating Review

- Pursue a higher bond rating.
  Staff plans to complete in late spring/early summer.

Staffing Succession Plan

- Develop a staffing succession plan to address anticipated retirements over the next five years.
  Staff plans to complete this summer.

Job Description Review

- Update all District job descriptions that have not been revised in the last three years.
  Staff plans to complete this fall.

Emergency Response/System Security

Risk and Resilience Assessment

- Develop an America's Water Infrastructure Act-compliant Risk and Resilience Assessment.
  Plan is under development with assistance from the Whatcom County Sheriff's Office under the District's interlocal agreement for emergency planning services.

Cybersecurity Assessment

- Conduct a cybersecurity assessment of the District's IT infrastructure.
  Through the District's insurance provider, implemented ongoing staff/board cybersecurity training platform in November 2019.
  As part of the AWIA Risk and Resilience Assessment, staff have begun mapping the District's IT system.

Emergency Vendor Contracts

- Pursue contracts with applicable vendors for on-call contracts, including contracts for support during periods of emergency response.
  A public works contract template specific to unit-priced contracting has been developed.

Community/Public Relations

General

- Website
  The District's web content is being updated on a regular basis.
- Social Media
  Posts are being made to District Facebook and LinkedIn pages periodically; Nextdoor is regularly monitored for District-related posts.
- Press Releases
  Press releases were issued on March 16 and March 18 specific to District operations relative to the COVID-19 pandemic.

Intergovernmental Relations

- *J. Clary a conference call of WASWD-member general managers on March 16 related to actions each district is taking in response to the COVID-19 pandemic. Similar calls will be held weekly into the near future.*
- *J. Clary has been in regular phone contact with Joe Acala, Sudden Valley Community Association general manager, to coordinate mutual agency support should either organization be impacted COVID-19.*

EnviroStars Certification

- Gain EnviroStars Green Business certification.
  District is registered in the program; staff are completing initial stages of the certification process.

Lake Whatcom Water Quality

Management Program

- Attend meetings of Lake Whatcom Management Program partners.
  J. Clary participating in remote meetings of the Interjurisdictional Coordinating Team to address public comments on the 2020-2024 Work Plan.

Onsite Septic System Impact Assessment

- Lead effort in water quality monitoring to assess the impacts of septic systems on the lake.
  A quality assurance project plan (QAPP), which will guide the 2020 water quality monitoring effort, has been finalized. Herrera conducted the first monitoring event on March 3 and continues to monitor weather forecasts for future events.

Onsite Septic System Conversion Program

- Pursue connection of septic-served parcels within 200 feet of District sewer system.
  Of the three properties noticed in 2019, one connected on January 7, one has been in contact with the District (fall 2019), and one has not responded to-date. Based upon Board authorization, the two remaining properties have until August 2021 to connect.
  Based upon Board direction, staff are developing a white paper to facilitate discussion pertaining to amending the septic conversion policy in ways that assist in sewer connection.

AGENDA BILL Item 7.B		**Engineering Department Report**		
DATE SUBMITTED:	March 19, 2020	MEETING DATE:	March 25, 2020	
TO: BOARD OF COMMISSIONERS		FROM: Bill Hunter		
GENERAL MANAGER APPROVAL				
ATTACHED DOCUMENTS		1. Summary of District Projects		
		2. Engineering Department Report		
		3.		
TYPE OF ACTION REQUESTED		RESOLUTION ☐	FORMAL ACTION/ MOTION ☐	INFORMATIONAL /OTHER ☒

BACKGROUND / EXPLANATION OF IMPACT
Staff presentation of District Projects and current priorities

FISCAL IMPACT
Not applicable at this time.

RECOMMENDED BOARD ACTION
Review and discuss.

PROPOSED MOTION
Not applicable at this time.

Lake Whatcom Water & Sewer District
Engineering Department Report

Prepared for the March 25, 2020 Board Meeting
Data Compiled 03/19/20 by RH, BH, RM, KH

Status of Water and System Capacities				
	South Shore ID# 95910	Eagleridge ID# 08118	Agate Heights ID# 52957	Johnson Well ID# 04782
DOH Approved ERUs	**	85	57	2
Connected ERUs	3865	70	44	2
Remaining Capacity (ERUs)	**	15	13	0
Permitted ERUs Under Construction	26	0	0	0
Pre-paid Connection Certificates & Expired Permit	15	0	5	0
Water Availabilities (trailing 12 months)	58	0	0	0
Subtotal - Commitments not yet connected	99	0	5	0
Available ERUs	****	**15**	**8**	**0**

** Per DOH, water system capacity is sufficient for buildout. Oct 2018

Annual Reports		
Name Of Report	**Deadline**	**Completed**
Report Number of Sewer ERUs to City of Bellingham Prepared by: Bill	January 15	March 3, 2020
Other Reports		
Name Of Report	**Deadline**	**Last Completed**
Water Right Permit No. G1-22681 Development Extension	Due Every 5 Years Next Due Feb 15, 2023	March 20, 2018
Water Right Permit No. S1-25121 Development Extension	Due Every 5 Years Next Due March 30, 2023	March 20, 2018

Developer Extension Agreements

D1801	**Sudden Valley Community Association - Area Z Fire Hydrant**
Scope	Installation of Fire Hydrant
Sign Date	8/16/2018
Expiration Date	8/16/2021 (3 years)

Prior to Commencing Construction

- ☒ 1. District Engineer approves design
- ☒ 2. Reimbursement of District Engineer review costs
- ☒ 3. Copy of insurance policy
- ☒ ~~4. Copies of recorded easement~~
  n/a: to be recorded prior to final acceptance, property owned by Sudden Valley Community Association
- ☒ 5. Copies of permits
- ☒ 6. Pay Developer Conformance Deposit
  Receipt #16291 8/14/18
- ☒ 7. Developer delivers performance bond
  Assignment of savings account received in the amount of $135,798 and dated 8/14/2018. This will cover up to $90,532 of constructed facilities
- ☒ 8. Pays 25% of total amount of general facilities connection fees due to District
  n/a: no new connection
- ☒ 9. Pays District Administration, Legal Services, and Inspection Deposit
  Receipt #16291 8/14/18
- ☒ 10. District Issues Notice to Proceed w/Construction

Prior to Final Acceptance

- ☒ 1. District inspects & approves facilities as complete
- N/A 2. District receives water meters for each service
- ☒ 3. District accepts record drawings
- ☒ 4. District accepts easements & title insurance
- ☐ 5. District receives warranty bond or like security
- ☐ 6. District receives maintenance bond
- ☒ 7. District receives and approves Bill of Sale
- N/A 8. District receives a copy of recorded plat or legal description
- ☒ 9. District receives legal description of property
- N/A 10. District receives Latecomers Reimbursement fees due to otherDevelopers (if applicable)
- ☒ 11. Developer pays any applicable Supplemental DEA Processing/General Administrative fees
- N/A 12. District receives signed and notarized Latecomers Reimbursement Agreement (when applicable)
- ☐ 13. Developer has reimbursed the District for all incurred costs associated with DEA
- ☐ 14. Developer has met and completed all local, state, and federal permit requirements
- ☒ 15. Copies of recorded easement on file with District

Tasks/Notes

- 7/3/2018 DEA Application Received
- 7/25/2018 Board Authorizes DEA with Conditions
- 8/7/2018 SVCA Submits Hydraulic Analysis
- 8/14/2018 SVCA submits drawings, DEA, assignment of savings, insurance certificate, check for $6,750 ($5,000 deposit for review & inspection, $1,000 conformance deposit, and $750 for processing fee), and shallow pipe depth memo.
- 9/5/2018 District completes review of hydraulic analysis. 1,250 GPM for 90 minutes is available.
- 9/5/2018 SVCA submits revised plans. Review on hold until SVCA makes another deposit of $5,329.66 to cover legal and engineering review.

Continued on next page

Developer Extension Agreements (cont'd)	
D1801	**Sudden Valley Community Association - Area Z Fire Hydrant**

Tasks/Notes (cont'd)

- 12/17/2018 Deposit of $5,329.66 received
- 1/23/2019 Meeting with SVCA to review revised plans received 1/9/2019
- 2/26/2019 SVCA submits revised plans
- 3/20/2019 District returns plan review comments to Wilson Engineering
- 4/1/2019 Deposit of $2031.91 received.
- 4/9/2019 District approves plans and issues notice to proceed.
- 6/3/2019 Preconstruction meeting with SVCA, contractor, and Wilson to coordinate construct and inspections. Contractor will be starting work soon.
- 8/5/2019 Punch list inspection
- 8/15/2019 Final acceptance checklist/punch list sent to SVCA
- 9/19/2019 Deposit of $13,842.73 received.
- 10/22/2019 District Preparing Bill of Sale, Easement, and Supplemental Conditions agreemnt
- 11/7/2019 District receives record drawings
- 11/18/2019 Supplemental conditions and municipal utility easement sent to SVCA
- 11/18/2019 Deposit of $2,136.39 received.
- 12/16/2019 District reviewing SVCA's proposed changes to bill of sale and supplemental conditions and municipality utility easement agreement received 12/16/19
- 1/15/2020 District receives signed supplemental conditions and municipality utility easement agreement
- 2/11/2020 District receives and signs bill of sale
- 3/6/2020 Bill of Sale Recorded
- 3/17/2020 Sent status letter to SVCA for final acceptance, need maintenance bond & ecology permit documentation to close out project

Summary of District Projects

Report Prepared 3/17/2020

Line #	Project Number	Project Title / Tasks	Approved Budget	Spent to Date	Amount Remaining	2020 Schedule J F M A M J J A S O N D
1	C1708	Ball Check Valves at Austin and Beaver Sewer Pump Stations	$8,519	$8,519	$0	
2	C1716A	Dead End Blowoffs	$20,000	$13,311	$6,689	
3	C1716B	Geneva Booster Station - PRV's,Backflow, Roof	$40,000	$38,234	$1,766	
4	C1802	Dellesta, Edgewater & Euclid Sewer Pump Stations	$877,472	$254,560	$622,912	
16	C1814	Agate Heights WTP and Opal Booster Upgrades	$125,546	$45,531	$80,015	
19	A1901	Whatcom County Region GIS Imagery Partnership 2019 Flight	$1,000	$0	$1,000	
20	A1902	Compulsory Sewer Connections	$20,000	$563	$19,438	
21	C1904	Comprehensive Sewer Plan Update	$69,950	$69,966	$16	
22	C1908	Fire Flow Improvements - Hydraulic Model Calibration	$15,000	$4,557	$10,444	
23	C1909	Little Strawberry Bridge Water Main Predesign & Estimate	$20,000	$0	$20,000	
24	C1910	SVWTP and AHWTP Misc Component Replacement	$72,000	$60,262	$11,738	
25	C1913	SVWTP 20-Year Facility Plan	$100,000	$395	$99,605	
26	M1917	AB PLC-5 Replacements and UPS Improvements	$100,000	$0	$100,000	
27	A1919	OSS Impact Assessment	$100,000	$0	$100,000	
28	C2001	Demolish Old Concrete Resevoir at 1010 Lakeview St	$55,000	$1,457	$53,543	
29	C2002	Johnson Well Storage Building - New Siding and Paint	$27,500	$0	$27,500	
30	C2003	Sewer System Rehab and Replacement Projects	$71,460	$0	$71,460	
31	C2004	Quick Connect Fitting Kit for CAT Backhoe	$4,000	$0	$4,000	
32	C2005	Used Forklift	$20,000	$0	$20,000	
33	C2006	SCADA Telemetry - Managed Ethernet Switches	$20,000	$0	$20,000	
34	C2007	Administrative Server Hardware	$25,000	$0	$25,000	
35	C2008	Tool Truck with Snowplow and Sander Attachments	$86,300	$0	$86,300	
36	C2009	Flush-Vac Truck	$525,000	$0	$525,000	
37	C2010	Beaver, Flat Car, SVPS Motor Leads	$18,000	$0	$18,000	
38	C2011	Convert Eagleridge Booster to Metering Station	$30,000	$0	$30,000	
39	C2012	Austin-Fremont PRV Rebuild	$10,000	$0	$10,000	
40	C2013	Geneva and Div 22 Res Impressed Current Cathodic Protection	$40,000	$0	$40,000	
41	C2014	Water Meters and Registers	$13,000	$0	$13,000	
42	C2015	Fire Hydrant Flow Testing Kit	$3,500	$0	$3,500	
43	C2016	SVWTP Misc Component Replacement	$40,000	$0	$40,000	
44	C2017	Fire Hydrant Stortz Adapters	$12,000	$0	$12,000	
45	M2018	Annual Asphalt Patching	$35,000	$0	$35,000	
46	M2019	Annual Tree Trimming	$10,000	$0	$10,000	
47	A2020	Design and Construction Standards Update			$0	
48	A2021	AWIA Risk Assessment and Emergency Response Plans	$10,000	$0	$10,000	
49	A2022	Onsite Records Management Assessment		$0	$0	

NOTATION LEGEND

	A____	Administrative Project			p	Planned
	C____	Capital Project			a	Active
	M____	Maintenance Project			c	Completed
		Sewer Project (Green Font)			t	Target Completion
		Water Project (Blue Font)				
		Sewer and Water Project (Black Font)				

AGENDA BILL Item 7.C		**Finance Department Report**		
DATE SUBMITTED:	March 19, 2020	MEETING DATE:	March 25, 2020	
TO: BOARD OF COMMISSIONERS		FROM: Debi Denton		
GENERAL MANAGER APPROVAL				
ATTACHED DOCUMENTS		1. Monthly Budget Report		
		2. Monthly Investment Report		
		3.		
TYPE OF ACTION REQUESTED		RESOLUTION ☐	FORMAL ACTION/ MOTION ☐	INFORMATIONAL /OTHER ☒

BACKGROUND / EXPLANATION OF IMPACT
Information only.

FISCAL IMPACT
N/A

RECOMMENDED BOARD ACTION
N/A

PROPOSED MOTION
N/A

LAKE WHATCOM WATER AND SEWER FUND SUMMARY 2020

	401 WATER	402 SEWER	460 BOND RESERVE (RESTRICTED)	TOTAL
2020 REVENUES	433,198	731,619	-	1,164,817
2020 EXPENDITURES	(477,853)	(628,451)	-	(1,106,304)
2019 BALANCE CARRYOVER	987,272	1,363,375	772,335	3,122,982
2019 CONTINGENCY CARRYOVER	460,000	787,088		1,247,088
2020 BALANCE	$1,402,617	$2,253,631	$772,335	$4,428,583
2020 ALLOCATED TO OPERATING RESERVES	-$520,000	-$420,000		-$940,000
2020 ALLOCATED TO CONTINGENCY	-$460,000	-$796,088		-$1,256,088
AVAILABLE 2020 BALANCE	$422,617	$1,037,543	$772,335	$2,232,495

LAKE WHATCOM WATER AND SEWER DISTRICT

	Description	Budget 2020	2/29/2020	17%
WATER - 401				
REVENUES				
401-333-66-00-00	North Shore Sampling Interlocal Agreement	40,000		0
401-343-40-10	Water Sales Metered (4% base rate increase) *	2,632,739	391,544	14.87%
401-343-41-10	Permits (15 new connection permits) $6,000	90,000	24,759	27.51%
401-343-81-10	Combined Fees (Increase in Lien and Lock fees)	35,000	2,716	7.76%
401-359-90-00	Late fees	55,000	10,056	18.28%
401-361-11-00	Investment Interest	30,000	4,038	0.1346
401-369-10-00	Sale of scrap metal and surplus	3,000	-	0
401-369-10-01	Miscellaneous	1,000	85	0.085
401-369-40-00	Judgements and Settlements	-	-	
401-395-10-00	Sale of Capital Assets	-	-	
401-395-20-00	Insurance Recoveries	-	-	
	TOTAL REVENUES	**2,886,739**	**433,198**	**15.01%**
	* Per Resolution 844 effective 1/1/2020			
	Scheduled annual rate increase			

LAKE WHATCOM WATER AND SEWER DISTRICT

	Description	Budget 2020	2/29/2020	17%
SEWER - 402				
REVENUES				
402-343-41-10-02	Permits (15 new connection permits) $9,000	135,000	25,971	19.24%
402-343-50-11	Sewer Service Residential (2.5% rate increase) *	4,186,946	699,472	16.71%
402-343-50-19	Sewer Service Other	4,500	849	18.87%
402-343-50-80	Latecomer's Fees	-	-	0
402-361-11-00-02	Investment Interest	30,000	4,038	0.1346
402-361-40-00-80	ULID 18 Interest/Penalties	4,000	478	11.95%
402-368-10-00-80	ULID 18 Principal Payments	15,000	726	4.84%
402-369-10-00-02	Sale of scrap metal and surplus	3,000	-	0
402-369-10-00-02	Miscellaneous	1,000	85	0.085
402-369-40-02	Judgements and Settlements	-	-	0
402-395-10-00-02	Sale of Capital Assets	-	-	0
402-395-20-02	Insurance Recoveries	-	-	0
402-397-10-02	Transfers In		-	
	TOTAL REVENUES	**4,379,446**	**731,619**	**16.71%**
	* Per Resolution 844 effective 1/1/2020			
	Scheduled annual rate increase			

LAKE WHATCOM WATER AND SEWER DISTRICT

	Description	Budget 2020	2/29/2020	17%
WATER - 401				
OPERATING EXPENDITURES				
401-534-10-10	Admin Payroll (2.2% cola plus step increases - 2020)	353,900	65,339	18.46%
401-534-10-20	Admin Personnel Benefits	174,250	28,546	16.38%
401-534-10-31	Gen Admin Supplies/Equipment (Master Meter Software)	35,000	6,831	19.52%
401-534-10-31-01	Meetings/Team building	2,000	(158)	-7.90%
401-534-10-40	Merchant Services Fees	10,000	1,835	18.35%
401-534-10-40-01	Bank Fees		134	
	Interlocal - Invasive Species (City) (8% increase)	55,000	50,000	
	Interlocal - Lake Whatcom Tributary Monitor (County)	5,000	17,367	
	North Shore Sampling (County Interlocal Agreement)	100,000		
	Mutt Mits	5,000		
401-534-10-41	Water Quality Assurance Programs (TOTAL)	165,000		
	County Auditor Filing Fees	*3,000*		
	Statement processing	*12,500*		
	Answering Service	*750*		
	Time clock system	*750*		
	Financial Software Maintenance	*5,000*		
	Web Check services	*2,500*		
	CPA (Financial statements)	*3,000*		
	Rate Study	*15,000*		
	State Audit	*5,000*		
	Docuware maintenance and upgrade	*7,500*		
	Computer support	*15,000*		
	Anti virus subscription	*500*		
	Building security	*1,000*		
	Building custodial	*5,000*		
	Pest control	*500*		
	Landscaping service	*3,000*		
	South Whatcom Fire (hydrant maintenance)	1,000		
	Scada System Software Maintenance - Operations	*3,750*		
	Cyber Security AWIA Assessment	*5,000*		
	SCADA/PLC Support - Engineering/Operations	*5,000*		
	Cartegraph - Engineering/Operations	*2,500*		
	Auto Desk - Engineering	*500*		

LAKE WHATCOM WATER AND SEWER DISTRICT

	Description	Budget 2020	2/29/2020	17%
	GIS Partnership (County)	*500*		
	Rockwell - Engineering/Operations	*250*		
	IT Pipes	*750*		
	ESRI - ARC GIS	*750*		
	Innovyze - Engineering	*1,250*		
	Master Meter	2,000		
	Cyberlock software	*500*		
	Whatcom County Emergency Management	*10,000*		
	Misc (Bid notices etc.)	*2,500*		
401-534-10-41-01	Professional Services (TOTAL)	116,250	13,647	11.74%
401-534-10-41-02	Water Engineering Services	5,000	1,351	27.02%
401-534-10-41-03	Water Legal Services	20,000	2,550	12.75%
401-534-10-41-04	DEA expenditures		45	
401-534-10-42	Communication	30,000	5,652	18.84%
401-534-10-45	Admin Lease (copy/printers)	5,000	858	17.16%
401-534-10-46	Property Insurance	72,000	-	0.00%
401-534-10-49	Admin Misc.	500	-	0.00%
401-534-10-49-01	Memberships/Dues/Permits	10,000	17,688	176.88%
401-534-10-49-02	WA State Dept of RevenueTaxes/County Stormwater fees	115,000	17,829	15.50%
401-534-40-43	Training & Travel	17,500	2,245	12.83%
401-534-40-43-01	Tuition reimbursement	500	-	0.00%
401-534-50-31	Operations/Maintenance Supplies	75,000	19,989	26.65%
401-534-50-31-01	Small Assets/tools	25,000	16,078	64.31%
401-534-50-48	Operations Repair/Maint contracted work	60,000	1,113	1.86%
401-534-50-49	Insurance Claims	2,500		0.00%
401-534-60-41	Operations Contracted (water testing)	7,500	729	9.72%
401-534-60-47	Water City of Bellingham	45,000	-	0.00%
401-534-80-10	Operations Payroll (2.2% cola plus step increases - 2020)	575,561	113,824	19.78%
401-534-80-20	Operations Personnel Benefits (Medical,Retirement etc)	247,590	45,584	18.41%
401-534-80-32	Fuel	15,000	2,662	17.75%
401-534-80-35	Safety Supplies (Ergonomic Assessment)	10,000	950	9.50%
401-534-80-35-01	Safety Supplies Boots	1,250	79	6.32%
401-534-80-35-02	Emergency Preparedness	5,000	-	0.00%
401-534-80-43-00	Water - Operatoins Training/Travel/Certification		126	
401-534-80-47	General Utilities (Electric, gas, water, garbage)	110,000	19,261	17.51%

LAKE WHATCOM WATER AND SEWER DISTRICT

	Description	Budget 2020	2/29/2020	17%
401-534-80-49	Laundry	2,000	264	13.20%
	WATER OPERATING EXPENDITURES	**2,313,301**	**452,418**	**19.56%**
DEBT SERVICE				
401-591-34-77-01	Redemption of Long Term Debt Geneva AC Mains	119,938		
401-591-34-77-02	Redemption of Long Term Debt Div 22 Reservoir	65,475		
401-592-34-83-01	Debt Service Interest Geneva AC Mains	28,785		
401-592-34-83-02	Debt Service Interest Div 22 Reservoir	17,678		
SYSTEM REINVESTMENT				
	2019 System Reinvestment Projects	105,000		
	2020 System Reimvestment Projects	397,400		
401-594-34-62-01	Water Structures		4,180	
401-594-34-63-01	Water System		9,368	
401-594-34-64-01	Water Equipment		11,887	
WATER FUND	**TOTAL WATER REVENUES**	**2,886,739**	**433,198**	
	TOTAL WATER EXPENDITURES	**(3,047,577)**	**(477,853)**	
	2019 BALANCE CARRYOVER	**714,000**	**987,272**	
	2019 CONTINGENCY CARRYOVER	**460,000**	**460,000**	
	2020 ALLOCATED TO OPERATING RESERVES	**(520,000)**	**(520,000)**	
	2020 ALLOCATED TO WATER CONTINGENCY	**(460,000)**	**(460,000)**	
	PROPOSED AVAILABLE 2020 YEAR END BALANCE	**33,162**	**422,617**	

LAKE WHATCOM WATER AND SEWER DISTRICT

	Description	Budget 2020	2/29/2020	17%
SEWER - 402				
OPERATING EXPENDITURES				
402-535-10-10	Admin Payroll (2.2% cola plus step increases - 2020)	353,900	65,338	18.46%
402-535-10-20	Admin Personnel Benefits	174,250	28,545	16.38%
402-535-10-31	Gen Admin Supplies/Equipment	20,000	7,037	35.19%
402-535-10-31-01	Meetings/Team building	2,000	(82)	-4.10%
402-535-10-40	Merchant Services Fees	10,000	1,835	18.35%
402-535-10-40-01	Bank Fees	-	134	
	County Auditor Filing Fees	*3,000*		
	Statement processing	*12,500*		
	Answering Service	*750*		
	Time clock system	*750*		
	Financial Software Maintenance	*5,000*		
	Web Check services	*2,500*		
	CPA (Internal audit and Financial statements)	*3,000*		
	Rate study	*15,000*		
	State audit	*5,000*		
	Docuware maintenance and upgrade	*7,500*		
	Computer support	*15,000*		
	Cyber Security AWIA Assessment	*5,000*		
	Anti virus subscription	*500*		
	Building security for offices	*1,000*		
	Building custodial	*5,000*		
	Pest control	*500*		
	Landscaping service	*3,000*		
	Scada System Software Maintenance - Operations	*3,750*		
	Camera Van Software	1,500		
	SCADA/PLC Support - Engineering/Operations	*5,000*		
	Cartegraph - Engineering/Operations	*2,500*		
	Auto Desk - Engineering	*500*		
	GIS Partnership (County)	*500*		
	Rockwell - Engineering/Operations	*250*		
	IT Pipes	*750*		
	ESRI - ARC GIS	*750*		

LAKE WHATCOM WATER AND SEWER DISTRICT

	Description	Budget 2020	2/29/2020	17%
	Innovyze - Engineering	*1,250*		
	Cyberlock software	*500*		
	Whatcom County Emergency Management	*10,000*		
	Misc (Bid notices etc.)	*2,500*		
402-535-10-41-01	Professional Services (TOTAL)	114,750	13,127	11.44%
402-535-10-41-02	Engineering Services	5,000	7,735	154.70%
402-535-10-41-03	Legal Services	20,000	3,382	16.91%
402-535-10-41-04	DEA expenditures		-	
402-535-10-42	Communication	30,000	5,652	18.84%
402-535-10-45	Admin Lease (copy/printers)	5,000	858	17.16%
402-535-10-46	Property Insurance	72,000	-	0.00%
402-535-10-49	Admin Misc.	500	60	12.00%
402-535-10-49-01	Memberships/Dues/Permits	8,000	11,518	143.98%
402-535-10-49-02	WA State Dept of RevenueTaxes/County Stormwater fees	115,000	17,829	15.50%
402-535-40-43	Training & Travel	17,500	2,293	13.10%
402-535-40-43-01	Tuition reimbursement	500	-	0.00%
402-535-50-31	Operations/Maintenance Supplies	75,000	6,605	8.81%
402-535-50-31-01	Small Assets/tools	25,000	104	0.42%
402-535-50-48	Operations Repair/Maint contracted work	60,000	5,882	9.80%
402-535-50-49	Insurance Claims	2,500	-	0.00%
402-535-60-41	Operations Contracted (generator load testing)	15,000	-	0.00%
402-535-60-47	Sewer City of Bellingham Treatment Fee	680,000	223,179	32.82%
402-535-80-10	Operations Payroll (2.2% cola plus step increases - 2020)	483,494	92,479	19.13%
402-535-80-20	Operations Personnel Benefits (Medical,Retirement etc)	247,590	36,728	14.83%
402-535-80-32	Fuel	13,000	3,937	30.28%
402-535-80-35	Safety Supplies (Ergonomic Assessment)	10,000	950	9.50%
402-535-80-35-01	Safety Supplies Boots	1,250	79	6.32%
402-535-80-35-02	Emergency Preparedness	5,000	-	0.00%
402-535-80-43-00	Operations Training/Travel/Certification		20	
402-535-80-47	General Utilities (Electric, gas, water, garbage)	100,000	20,299	20.30%
402-535-80-49	Laundry	2,000	404	20.20%
	SEWER OPERATING EXPENDITURES	**2,668,234**	**555,927**	**20.84%**

LAKE WHATCOM WATER AND SEWER DISTRICT

	Description	Budget 2020	2/29/2020	17%
DEBT SERVICE				
402-591-35-72-03	2016 Bond Principal Payments	425,000	-	
402-592-35-83-03	2016 Bond Interest Payments	218,176	-	
SYSTEM REINVESTMENT				
	2019 Sewer System Reinvestment Projects	770,000		
	2020 Sewer System Reinvestment Projects	191,900		
402-594-35-62-02	Sewer Structures		59,733	
402-594-35-63-02	Sewer System		3,062	
402-594-35-64-02	Sewer Equipment		9,729	
402-594-35-64-02	Sewer Equipment (Flush/Vac Truck)	525,000		
SEWER FUND	**TOTAL SEWER REVENUES**	**4,379,446**	**731,619**	
	TOTAL SEWER EXPENDITURES	**(4,798,310)**	**(628,451)**	
	2019 BALANCE CARRYOVER	**986,000**	**1,363,375**	
	2019 CONTINGENCY CARRYOVER	**787,000**	**787,000**	
	2020 ALLOCATED TO SEWER OPERATING RESERVES	**(420,000)**	**(420,000)**	
	2020 ALLOCATED TO SEWER CONTINGENCY	**(796,000)**	**(796,088)**	
	PROPOSED AVAILABLE 2020 YEAR END BALANCE	**138,136**	**1,037,455**	

LAKE WHATCOM WATER AND SEWER

INVESTMENTS/CASH AS OF 2/29/2020

Petty Cash		$ 1,600		
Cash		$ 465,137		0.35%
Public Funds Account		$ 102,235		1.55%
LGIP		$ 1,032,554		1.77%
		$ 1,601,526		
		PAR VALUE		YIELD
FFCB - ProEquity	Callable	$ 751,406	Aug-20	1.10%
RFCO-ProEquity	Non-callable	$ 1,071,817	Jan-21	2.71%
FHLB - Pro equity	Callable	$ 1,003,619	Nov-22	1.55%
US Bank		$ 2,826,842		
TOTAL		**$ 4,428,368**		

USE OF FUNDS:		
Reserved	$ 849,648	
Contingency	$ 1,256,088	
Unrestricted	$ 2,322,632	
	$	**4,428,368**

AGENDA BILL Item 7.D	**Operations Department Report**			
DATE SUBMITTED:	March 19, 2020	MEETING DATE:	March 25, 2020	
TO: BOARD OF COMMISSIONERS		FROM: Brent Winters		
GENERAL MANAGER APPROVAL				
ATTACHED DOCUMENTS		1. Operations Department Report		
		2.		
		3.		
TYPE OF ACTION REQUESTED		RESOLUTION ☐	FORMAL ACTION/ MOTION ☐	INFORMATIONAL /OTHER ☒

BACKGROUND / EXPLANATION OF IMPACT

Departmental update from the Operations & Maintenance manager.

FISCAL IMPACT

Not applicable at this time.

RECOMMENDED BOARD ACTION

Review and discuss.

PROPOSED MOTION

Not applicable at this time.

Lake Whatcom Water & Sewer District
Operations & Maintenance Department Report

Prepared for the March 25, 2020 Board Meeting
Data Compiled 03/19/20 by RH, BW, RM

State Required Report Status													
Monthly Reports													
Name Of Report		**Completed**											
Chlorination Report Agate Heights Prepared by: Kevin	Postmarked by the 10th of month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
		x	x	x									
Surface Water Treatment Rule Report (SVWTP) Prepared by: Kevin	Postmarked by the 10th of month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
		x	x	x									
Annual Reports													
Name Of Report	**Deadline**	**Completed**											
WA State Cross Connection Report Prepared by: Rich	May												
OSHA 300 Log Prepared by: Rich	February 1	January 27, 2020											
Water Use Efficiency Performance Report Prepared by: Kevin	July 1												
Community Right to Know (Hazardous Materials) Prepared by: Rich & Brent	March 31	January 14, 2020											
Consumer Confidence Reports Prepared by: Kevin	June 30	Geneva		SV		EagleR		Agate Ht					
Other Reports													
Name Of Report	**Deadline**	**Last Completed**											
CPR/First Aid Training Coordinated by: Rich	Due Biennially Next Due 2021	March 23, 2019											
Flagging Card Training Coordinated by: Rich	Due Triennially Next Due 2022	June 6, 2019											

Safety Program Summary Completed by Rich Munson & Brent Winters			
Summary of Annual Safety Training *2020 Testing Period - Jan 1, 2020 to May 1, 2020*			
	Enrollments	Completions	% Complete
Engineering - Managers	60	53	88%
Engineering - Staff	22	16	73%
Field Crew - Managers	200	138	69%
Office - Managers	12	3	25%
Office - Staff	40	29	73%
Overall	**334**	**239**	72%

Safety meetings for the field crew take place every Friday at 7 a.m.

Dates of Completed Safety Committee Meetings		
1/21/2020		
2/18/2020		
3/17/2020		

Summary of Work-Related Injuries & Illnesses						
	Current Month	2020	2019	2018	2017	2016
Total Number of Work Related Injuries Defined as a work related injury or illness that results in: ・Death ・Medical treatment beyond first aid ・Loss of consciousness ・Significant injury or illness diagnosed by a licensed health care professional ・Days away from work (off work) ・Restricted work or job transfer	0	0	0	0	1	0
Total Number of Days of Job Transfer or Restriction (light duty or other medical restriction)	0	0	0	0	13	0
Total Number of Days Away from Work (at home, in hospital, not at work)	0	0	0	0	4	0
Near Misses	0	0	2	2	1	

Safety Coordinator Update