

**ANCHORAGE WATER & WASTEWATER UTILITY**  
**WATER AND/OR SANITARY SEWER MAIN EXTENSION (PRIVATE DEVELOPMENT) INFORMATIONAL PACKAGE**

1. Application Checklist
2. Application Form (complete both sides)
  - a. Side 1: Project Team Information
  - b. Developer's Estimated Water Main Project Costs
  - c. Developer's Estimated Sanitary Sewer Main Project Costs
3. AWWU Private Development Program Instructions
  - Part 1 Pre-Application Meeting
  - Part 2 Application Form
  - Part 3 Fees, Deposits, & Charges
  - Part 4 Plan Review and Approval
  - Part 5 Supporting Documentation
  - Part 6 Notice-To-Proceed (NTP)
  - Part 7 Inspection
  - Part 8 Service Extension Permit(s)
  - Part 9 Prerequisites to Acceptance Under Warranty
  - Part 10 Warranty Inspection
  - Part 11 Project Closure
4. AWWU Plan Submittal Minimum Requirements (project engineer is to check all items)
5. Sample Map, 8.5" x 14" (to be recorded with agreement)



**USEFUL TELEPHONE NUMBERS**

- Private Development Coordinator & Main Line Extension Agreements, Planning 564-2747
- Private Development Plan Review, -Planning 564-2786
- Water & Sewer Assessments, - Planning 564-2716
- Private Development Construction and Inspections, -PM 564-2776
  
- AWWU, Engineering, **Planning - Main Number** **564-2739**



- On Property Service Connections (Private System Plan Review), Field Services 564-2762
- All Water & Sanitary Sewer Permits, Field Services 564-2762



# Anchorage Water and Wastewater Utility

## Engineering Division

### **Checklist for Private Development Application Form**



#### Application package must include all applicable & related documents below:

Pre-Application meeting (initial & date as applicable): Held:\_\_\_ Waived:\_\_\_ Date\_\_\_\_\_

Application Form, complete to include Applicant/Owner/Developer signature

Parcel / Tax I.D. No & Existing Legal Description

#### **If a preliminary re-subdivision of the property (platting S-case) is under consideration /review, submit the following:**

Certificate to plat

Proposed Legal Description

2 copies of preliminary plat

Platting Board summary of action

Proof of Ownership - example: Title Report, Deed, Property Appraisal Record, etc.

Articles of Organization for Corporation, LLC, etc., if applicable

Signature Authority for signatory(ies) to the Agreement(s) - for properties not owned by an individual -corporation resolution, board resolution, Power of Attorney, etc.

Engineer's Cost Estimate

8 1/2" X 14" Project & Vicinity Map in prescribed layout (intended for recording w/Agreement)

Election of Reimbursement from Other Benefited Properties \_\_\_Yes \_\_\_No

Cash/Account Deposits - *may be submitted with a single check*

Collect \$300 Deposit for each utility (collect \$600 for water & sewer), upon submission of the main extension application

Upon submission of water plans, pay minimum 0.5% sub-total of the estimated cost or \$150, whichever is greater **OR** pay the appropriate percentage in table on the application form (AMC Title 24.20.040), this payment option includes the minimum plan review and application deposits

Upon submission of sewer plans, pay minimum 0.5% sub-total of the estimated cost or \$150, whichever is greater **OR** pay the appropriate percentage in table on the application form (AMC Title 24.20.040), this payment option includes the minimum plan review and application deposits

Geotechnical Soils Report (Due with Plan Submittal or before).



# Anchorage Water and Wastewater Utility

## Engineering Division



### Application Form for Private Development

<b><u>AWWU Office Use Only:</u></b>	Anchorage Grid No: _____
WBS Elements (W) _____ (S) _____	AWWU Plan Set #: _____
AWWU Project File No: _____	AWWU AMS No: <b>W#</b> _____ <b>S#</b> _____

#### **APPLICANT** (PROPERTY OWNER / DEVELOPER):

#### **CONSULTING ENGINEER:**

<b>NAME:</b> _____	<b>NAME:</b> _____
CONTACT PERSON: _____	CONTACT PERSON: _____
*MAIL/BILLING ADDRESS: _____	LICENSE # & EXP DATE: _____
CITY/STATE _____ ZIP _____	MAILING ADDRESS: _____
TELEPHONE: _____	CITY/STATE _____ ZIP _____
E-Mail: _____	TELEPHONE: _____
	E-Mail: _____

\* Applicant can expect AWWU charges to commence upon AWWU receiving application and applicable deposits.

#### **DEVELOPER TO BE NAMED IN THE AGREEMENT:**

(for example: Name of INDIVIDUAL, PARTNERSHIP, CORPORATION, LLC, ETC.)

#### **PERSON AUTHORIZED TO SIGN THE AGREEMENT WILL BE (Developer or Someone Else):**

**NAME:** \_\_\_\_\_  
(Please print)

**TITLE:** \_\_\_\_\_  
(e.g.: INDIVIDUAL, PARTNER, GENERAL PARTNER, PRESIDENT, MANAGING MEMBER, OTHER)

**PHONE:** \_\_\_\_\_, **EMAIL:** \_\_\_\_\_

#### **PROPERTY OWNER / DEVELOPER INFORMATION SUBMITTED WITH APPLICATION:**

- A. \_\_\_\_\_ ZONING OF PROPERTY: \_\_\_\_\_
- B. \_\_\_\_\_ PLATTING CASE NUMBER: \_\_\_\_\_
- C. \_\_\_\_\_ PROPERTY'S PROPOSED LEGAL DESCRIPTION: \_\_\_\_\_
- D. \_\_\_\_\_ FILED PLAT NUMBER \_\_\_\_\_
- E. \_\_\_\_\_ PROPERTY'S EXISTING LEGAL DESCRIPTION: \_\_\_\_\_
- F. \_\_\_\_\_ PROPERTY TAX ID #: \_\_\_\_\_
- G. \_\_\_\_\_ CERTIFICATE TO PLAT: \_\_\_\_\_
- H. \_\_\_\_\_ CONDITIONS TO PLAT: \_\_\_\_\_
- I. \_\_\_\_\_ CORPORATE DOCUMENT (IF APPLICABLE): \_\_\_\_\_
- J. \_\_\_\_\_ PROOF OF OWNERSHIP: \_\_\_\_\_
- K. \_\_\_\_\_ ESTIMATED NUMBER OF LOTS TO BE DEVELOPED: \_\_\_\_\_
- L. \_\_\_\_\_ AREA MAP OF EXISTING AND PROPOSED WATER AND SEWER IMPROVEMENTS
- M. \_\_\_\_\_ ELECTION OF REIMBURSEMENT BY ASSEMBLY RESOLUTION (If other properties besides the applicant's properties derive benefit). Reference AMC 19.80.010 and AMC 19.90.010.

<b><u>PROPERTY OWNER / DEVELOPER</u></b>	<b><u>ANCHORAGE WATER &amp; WASTEWATER UTILITY</u></b>
PREPARED BY: _____	RECEIVED BY: _____
ORGANIZATION: _____	DEPOSIT RECEIVED: \$ _____
DATE: _____	DATE: _____
OWNER/DEVELOPER SIGNATURE: _____	<b>Date Stamp</b>

**NOTE:** OVER PLEASE. ENGINEER'S ESTIMATED COST DATA IS ON THE OTHER SIDE OF THIS FORM

03/07/2019

**DEVELOPER'S ESTIMATED WATER MAIN PROJECT COSTS:**

Round Up To Next \$1,000

A. Estimated construction cost for approximately _____ LF of <b>12</b> -inch water main at an estimated cost of \$_____ per lineal foot and approximately _____ LF of <b>8</b> -inch water main at an estimated cost of \$_____ per lineal foot (attach Engineer's cost estimate):	\$_____ .00
B. Estimated oversizing credits (Engineer to provide a schedule of lineal feet and appurtenances with current prices):	\$_____ .00
C. Estimated consultant engineering and contract administrative charges:	\$_____ .00
<b><u>Estimated Cost (Sub-Total):</u></b>	\$_____ .00
D. Estimated AWWU charges (see Deposit Schedule at bottom of page for amount - \$1,000 minimum):	\$_____ .00
<b><u>DEVELOPER'S TOTAL ESTIMATED WATER MAIN COSTS:</u></b>	\$_____ .00



**DEVELOPER'S ESTIMATED SEWER MAIN PROJECT COSTS:**

Round Up To Next \$1,000

A. Estimated construction cost for approximately _____ LF of <b>12</b> -inch sanitary sewer main at an estimated cost of \$_____ per lineal foot and approximately _____ LF of <b>8</b> -inch sanitary sewer main at an estimated cost of \$_____ per lineal foot (attach Engineer's cost estimate):	\$_____ .00
B. Estimated oversizing credits (Engineer to provide a schedule of lineal feet and appurtenances with current prices):	\$_____ .00
C. Estimated consultant engineering and contract administrative charges:	\$_____ .00
<b><u>Estimated Cost (Sub-Total):</u></b>	\$_____ .00
D. Estimated AWWU charges (see Deposit Schedule at bottom of page for amount - \$1,000 minimum):	\$_____ .00
<b><u>DEVELOPER'S TOTAL ESTIMATED SANITARY SEWER MAIN COSTS:</u></b>	\$_____ .00

**Deposits shall be paid per the following schedule of AMC Title 24.20.040:**

- a. Upon submission of application for main extension, pay \$300 deposit per utility (for water & sewer pay \$600),
  - b. Upon submission of plans, pay minimum. 0.5% of sub-total of the estimated cost or \$150, whichever is greater, per utility (i.e. water, sewer)
- OR**
- c. Pay the appropriate percentage (to pay more than the minimum, options a & b per the schedule below which superceeds options a & b above, per utility (i.e. water, sewer)
  - d. Choosing options a & b or option c, the full amount and/or any additional required deposits are all due prior to AWWU issuing the Notice To Proceed (NTP) to construction.

<b><u>To Calculate Item "D" above, Use the Following at a Minimum:</u></b>	
\$ 50,000 or Less	→ 4.0% of the Sub-Total - <i>Estimated cost</i>
\$ 50,000-\$150,000	→ 3.0% of the Sub-Total - <i>Estimated cost</i>
\$150,000-\$500,000	→ 2.5% of the Sub-Total - <i>Estimated cost</i>
\$500,000 or Greater	→ \$13,000.00 - <i>Fixed amount</i>

**Part 1. Pre-Application Meeting:**

A pre-application meeting is required for all applicants. Please call Private Development Unit at Planning at 564-2747 or 564-2720 and inquire about an appointment.

AWWU reserves the right to refuse an application if it is incomplete, missing support documents, and unaccompanied by requisite cash deposits; or, the applicant is delinquent on payments due MOA/AWWU; or, applicant is in default on other agreements with MOA/AWWU.

**Part 2. Application Form:**

- A. Provide all (applicable) information requested on the sanitary sewer and/or water main extension agreement application and on the Engineer’s Preliminary Cost Estimate form. Forms are attached and additional forms are available from AWWU Planning Section, Private Development Unit. See attached checklist for agreement application to avoid incomplete submittals and delays.
- B. On all water and sanitary sewer extension projects involving re-subdividing and re-platting actions, submit two full size (22”x34”) copies of preliminary plat, a copy of the certificate to plat, and a copy of the Platting Board Authority’s summary of action (conditions to plat).
- C. If not re-subdividing or re-platting the property, submit one full size (22”x34”) copy of existing plat(s).
- D. Submit an 8½ “X14” project and vicinity map sheet of the proposed development divided into three cells per attached map example.  
  
*Note: 1” top, bottom, and side sheet margins are required.*
- E. If developer is a corporation, partnership or limited liability company, provide clear written documentation which authorizes specific person(s) to sign the water and sanitary sewer main line extension agreement(s) on the developer’s behalf. If property ownership has recently changed, proof of ownership is required.
- F. If other properties, besides the applicant’s properties, will be benefited (fully fronted on one side) by the mainline extension(s), applicant is required to identify desires to seek (or waive) potential reimbursement from these other properties. Please speak to an AWWU staff regarding your options and possible impacts to the project schedule resulting from the selection.
- G. After submitting an application, it is the developer’s responsibility to notify AWWU in writing of any changes to the information on the application.

**Part 3. Fees, Deposits, & Charges:**

- A. Cash deposits are required for each sanitary sewer and water mainline extension agreement per the Anchorage Municipal Code, Title 24, as follows:

<u>Estimated Project Cost (Subtotal)</u>	<u>Deposit</u>
\$10,000.00 or less	\$300.00
over \$10,000.00 up to \$50,000.00	4.0% of estimated cost
over \$50,000.00 up to \$150,000.00	3.0% of estimated cost
over \$150,000.00 up to \$500,000.00	2.5% of estimated cost
over \$500,000.00	\$13,000.00

**Deposits are required in accordance with the following schedule:**

- 1. Upon application for each agreement (sanitary sewer or water): \$300.00.
- 2. Upon submittal of preliminary plans: \$150.00 or 0.5 of 1% plan review deposit, whichever is greater. Plans will not be accepted without required deposit.
- 3. Prior to issuance of the notice-to-proceed: the balance of the required deposit.

- B. AWWU charges to the Developer commence upon acceptance of the application.

*An applicant/developer shall pay the municipality's actual cost associated with the application and project. The municipality's cost shall include but is not limited to research as necessary, preparing and administering the agreement, plan checking, surveillance and administrative overhead. If it is quite probable Utility charges will exceed deposits. If so, applicant/developer will be invoiced the difference.*

#### **Part 4. Plan Review & Approval:**

**AWWU will accept plan sets accompanied by the ½% plan review deposit. (See Part 3) Water and sanitary sewer designs must be in accordance with the 2012 AWWU Design and Construction Practices Manual.**

- A. Upon submittal of the preliminary plans for the improvements, provide plan review deposit. Plan sets will not be accepted without a plan review deposit.
- B. Submit two (2) full (22" X 34") and one (1) half (11" X 17") sets of preliminary plans.
- C. AWWU will review preliminary plans and return a plan review comment letter to the Engineer with a courtesy copy to the Developer. Anticipate about 4 week turn-around time. Upon resolution of AWWU plan review comments, submit nine sets of final plans for approval; 4 Full and 5 Half Size sets.

**NOTE:** AWWU may require an electronic submittal of approved plans.

#### **Part 5. Supporting Documentation:**

The following supporting documents are required **prior to plan approval:**

- A. Secured Project Corridor: A copy of all recorded easements and/or rights-of-way required for the project but not dedicated, or intended to be dedicated, by platting action. Engineer is responsible for preparing, proofing, and submitting any new such dedication documents.
- B. A copy of all required Federal, State and Municipal permits/waivers. (i.e., Wetlands, well encroachments, R-O--W, easements, Fish & Game, etc.).

The following supporting documents are required **before or at the Preconstruction Meeting:**

- A. Signed mainline extension agreement(s).
- B. If performing work in established public right-of-way, performance guarantee equal to **100%** of the estimated cost of the uncompleted portion of the project plus an additional overrun allowance, usually **20%**, (Anchorage Municipal Code, Title 21, Section 21.08.60G).
- C. Contractor's Liability Insurance Certificate for a minimum of \$1,000,000 umbrella coverage (Reference: Municipality of Anchorage Standard Specifications, latest edition, Section 10). Include Municipality of Anchorage as additionally insured.
- D. Contractor's right-of-way bond must be on file with the Municipality of Anchorage, Department of Public Works.
- E. A letter signed by both the Developer and the Engineer stating that the Developer has retained the Engineer for the entire duration of the two-year warranty period (reference Part 9). This retainer is for purposes of effecting correction of any and all defects noted prior to the end of the warranty period. Refer to Articles 3.01 through 3.05 of subject sanitary sewer or water main extension agreement.

- F. Engineer's Quality Control/Quality Assurance Program which shall include schedule for submitting construction inspection reports. The Engineer shall submit weekly reports to AWWU's Project Management Supervisor.
- G. Contractor's Construction Schedule.

The following supporting documents are required, as applicable, prior to AWWU Plat sign-off:

- A. Signed mainline extension agreement(s).
- B. Performance Guarantee equal to **100%** of the estimated cost of the uncompleted portion of the project plus an additional overrun allowance, usually **20%**, (Anchorage Municipal Code, Title 21, Section 21.08.60G).
- C. Platting Authority Conditions of Approval have been satisfied. Any special plat notes?

**Part 6. Notice-To-Proceed (NTP):**

- A. Engineer shall submit a written request for the Contractor's Notice-to-Proceed.
- B. Pay remainder of fees required for deposit under Part 3 above.
- C. Provide a **\$500** deposit per each fire hydrant requiring vertical adjustment by AWWU.
- D. Pay all sanitary sewer and water connection permit fees, as applicable, to AWWU.
- E. Upon submittal of all requisite items listed in Parts 5 and 6, AWWU will approve the request for Notice-to-Proceed. (NOTE: The Notice-to-Proceed must also include the approval of the Municipal Department of Public Works.)
- F. The Developer may receive a **Notice-to-Proceed** at the pre-construction conference provided all requisite documentation and deposits has been submitted.

The following parties are expected to attend this conference:

- AWWU's Private Development Unit Representative(s);
- AWWU's Project Management Representative(s);
- Developer or designee;
- Developer's Engineer or designee; and,
- Developer's Construction Contractor.

**Part 7. Inspection:**

- A. Inspections are required. AWWU will conduct site visits to ascertain the progress of the work; monitor inspection activities; and perform cursory inspections for conformance with the Municipality of Anchorage Standard Specifications (latest edition), as amended. Day to day inspections and reporting of the work are the responsibility of the Developer and his/her Engineer. AWWU will also perform scheduled visits to the site upon request by the Developer's Engineer.

Special attention will be given to the following items:

- |                       |                                       |
|-----------------------|---------------------------------------|
| 1. Open bore flushing | 5. Key boxes and valve markers        |
| 2. Pressure testing   | 6. Manholes, inverts, dust pans, etc. |
| 3. Chlorination       | 7. Stub-out markers                   |
| 4. Continuity tests   | 8. Total Coliform Testing (BAC-T)     |

- B. The AWWU Inspector will provide AWWU Planning Section, Private Development Unit with written notice indicating acceptability when the newly constructed facilities meet municipal standards and completion.

**Part 8. Service Extension Permit(s):**

- A. On-property sanitary sewer and/or water (service line) extension permits will be issued only after the AWWU inspector deems the main to have passed a pre-final inspection and provides written notice of same to the AWWU Field Services Permits Office.
- B. AWWU will provide water (valve turn-on) to the service extensions upon receipt and approval of record drawings.

**Part 9. Prerequisites to Acceptance under Warranty:**

- A. The Developer or his Engineer shall request a final inspection by AWWU of the sanitary sewer and water facilities. The facilities shall **pass final inspection** prior to project being placed under warranty by AWWU.
- B. The Developer shall financially guarantee the construction for a period of two years (reference: Anchorage Municipal Code, Title 21, Section 21.08.60I). The Developer shall provide AWWU a secured **warranty guarantee** in the form of a corporate surety bond, cash deposit, or letter of credit in the amount listed below:

<u>Total Certified Construction Cost:</u>	<u>Warranty Guarantee (%):</u>
\$0 -- \$500,000	10.0%
\$500,000 -- \$1,000,000	7.5%
\$1,000,000 and higher	5.0%

**The Developer shall provide the secured warranty guarantee prior to start of the warranty period.**

- C. Prior to start of the warranty period, the Developer shall provide AWWU, a **warranty cash deposit** (reference: Anchorage Municipal Code, Title 24, Section 24.20.040D) to cover AWWU's expenses which may be incurred on the project during the warranty period.

The amount of the deposit shall be for each agreement (i.e., sanitary sewer and water deposits cannot be combined). AWWU will refund all unencumbered funds to the Developer at the close of the warranty period. A table of the warranty cash deposit required follows.

<u>Certified Project Costs:</u>	<u>Required Cash Deposit:</u>
Less than \$ 10,000	\$ 500
\$ 10,000 to \$ 50,000	\$ 1,000
\$ 50,000 to \$ 150,000	\$ 1,500
Over \$150,000	\$ 2,000

- D. AWWU will issue the Developer a letter of acceptance to assume maintenance of the sanitary sewer and water off-property facilities under a two year warranty period upon completion of the following:
  1. Inspection and approval of the project by the AWWU Inspector as outlined in Parts 7 and 9A.
  2. Receipt and acceptance of one set of reproducible Mylar **record drawings**. Record drawing measurements shall be in accordance with the Current AWWU Design and Construction Practices Criteria, Section 50.00.  
**NOTE:** AWWU may require an electronic submittal of approved record drawings.



3. Receipt and approval of the Developer's **certified cost statement** using a form provided by AWWU. (Note: Failure to submit an approved certified cost statement within 180 days of receipt of written notification of the project having successfully completed a final inspection may be sufficient justification for the AWWU to deny any reimbursement due to the Developer.).
4. Developer is to remit **payment for all outstanding charges** relating to the project.

**Part 10. Warranty Inspection:**

No later than two years following acceptance for warranty, AWWU will perform a warranty inspection. When the facilities have been found to meet Municipal standards and all obligations of the Developer to the Municipality have been satisfied, AWWU will issue a final letter of acceptance of full responsibility for future maintenance of the project and release the extension agreements, secured warranty guarantees and the balance of all deposits held by AWWU.

**Part 11. Project Closure:**

Project account(s) will be closed once the following items are received or accomplished:

1. Passing the Warranty Inspection,
2. Issuing the Developer the Warranty Release Letter,
3. Recording the Certificate of Completion,
4. Recording the Certificate of Cancellation, if applicable,

Any remaining deposits, if applicable, will be refunded to the clients not later than thirty (30) business days from the date the Certificate of Completion is recorded.

## **AWWU Private Development Plan Submittal Requirements**

The project plans shall be complete and in accordance with the Current AWWU Design and Construction Practices Manual (DCPM). Incomplete plans will be reviewed for concept approval only. This checklist is intended to consolidate fundamental DCPM design requirements and does not assure a complete design.

### **General Requirements:**

- All plans and documents stipulating construction requirements, soil reports and other similar documents shall be sealed and signed by a registered professional engineer licensed to practice in the State of Alaska.
- A preconstruction survey is to be completed by a professional land surveyor registered in the State of Alaska.
- A soil corrosivity evaluation shall be performed by a NACE certified corrosion or cathodic protection specialist to determine the corrosion control requirements. Submit the report with the plans for review.
- The engineer shall secure the fire department approval and submit original to AWWU.

### **Drawing Standards**

- All drawings submitted to AWWU shall be created using a computer aided design (AutoCAD or equal) format. All 'or equal' products shall have the ability to create and save files in a .DWG format.
- Plans shall adhere to the AWWU Drawing Standards prescribed in the DCPM. This includes the specified Layers, Line Types, etc.
- The standard plan sheet size shall be size D at 22" x 34".
- Scales in order of preference shall be 1"= 50' horizontal and 1"= 5' or 10' vertical. For small congested areas a scale of 1"= 20' horizontal may be used. Use of an alternate scale requires approval of the AWWU plan reviewer.
- All drawings shall be accurate, legible, clear, and properly detailed (suitable for microfilming or scanning). The plans shall be legible when reduced to 11" x 17".
- Show "AWWU PLAN SET NO. XXXX", as assigned by AWWU, on each sheet of the plans (Reference AWWU CAD Standard templates). The text shall be placed as close to the upper right hand corner of the drawing as possible, inside of the border.
- All plan sheets shall include a title block with, at a minimum, the following: (See Section 60.00 of this manual)
  - Sheet title

- Sheet Number
- Horizontal and vertical scale
- The engineering firm's name, address and telephone number
- Engineer's stamp, signature and date of signature
- Date of the drawings
- Appropriate scale with a scale bar and written scale
- MOA grid number(s)
- AWWU Project ID number and Plan Set number
- ADOT/PF R-O-W permit number
- Project name as assigned by AWWU
- Legal description of property
- Record drawing stamp

### **Cover Sheet (title sheet)**

Plans with more than two sheets shall have a cover sheet that includes:

- Vicinity map showing the project location within the city or town.
- Project name as assigned by AWWU
- Index of sheets
- Engineering firm's name, address and phone number
- Date of the drawings
- AWWU's Project ID number and Plan Set number
- Owner's name, address, telephone number and signature

### **Information Sheet**

A general informational sheet shall be included with all sets of plans. For large subdivisions, locate the general information on the second sheet of the set; for smaller projects, put the information on an additional sheet or wherever space permits. Include the following on all sets of plans:

- General Legend
- Abbreviations--with definitions.
- General Construction Notes; Sanitary Sewer Construction Notes; Water Construction Notes and General Survey Notes.--maintain the published sequence of the applicable notes from Section 60.04, followed by project specific notes.
- Specify the type of service to be provided (i.e., residential-single family; zero lot line; townhouse; condominium; mobile home park; public utility district; commercial-office building or retail store; or, industrial).
- Key Map(s) -- include individual water and sewer key maps showing all proposed and existing utilities within five hundred (500) feet of the proposed development. At a minimum, the key maps shall include; subdivision names, tract names, lot and block numbers, street names, water mains, water main

valves, fire hydrants, sanitary sewer mains, manholes, sanitary sewer drainage boundaries, pressure zone boundaries and municipal grid boundaries.

- Design detail drawings of general nature such as trench section, compaction, etc., shall be shown on the plans. Show any specific details on the sheet where it applies. If necessary, provide a separate sheet showing the details.
- Trench section details. Side slopes, compaction, etc. shall be specified.

### **Survey Control Sheet**

Provide a survey control drawing for each project, showing the specific legal location of the project based on record plat information and legal descriptions such as aliquot parts, or in some cases, metes and bounds descriptions. The control sheet shall include the record monumentation, which the survey location and proposed improvement are based on. The basis of bearing and how the basis of bearing was derived shall be clearly stated. Include a list of the record document information as reference for future work on the project.

- The project horizontal control shall be tied into the State of Alaska Department of Transportation's Anchorage Bowl 2000 horizontal control network utilizing GPS measuring technology. The coordinates to be provided are North American Datum (NAD) 1983 adjustment dated 1992 or latest accepted adjustment utilized by the Anchorage Continuously Operating Receiver Stations (CORS). For projects with a baseline longer than two miles, measurements shall be adjusted to 'Bowl 2000' or through a computed scale factor to ensure the maximum horizontal error in measurements is less than one foot.
- Project vertical control shall be based on the Municipal Bench Mark Network and include the Bench Mark name, description and published elevation. Bench marks, temporary bench marks, and survey control datum shall be clearly indicated on the plans and include location, description, and elevation. The vertical control datum shall be based on the 1972 National Geodetic Survey Datum or latest official update.

### **Plan and Profile Sheets**

Standard plan and profile sheets shall be provided and shall accurately depict all existing and proposed utilities. Include the following on all plan and profile sheets:

- Plan view—include existing and proposed water, sanitary sewer and storm drains labeled with type, class, diameter, length and bearing of pipe; R-O-W lines (center and edges); edge of pavement; easements; temporary construction easements; property lines; section lines and corners; land grant lines; wells; septic systems; existing and proposed building foot prints; subdivision names; street names; lot and block numbers; north arrow and

street lights. Show the following if located within thirty (30) feet of utilities: trees two (2) inches diameter and larger, fences, retaining walls, planters and other landscaping improvements. Show horizontal dimensions from utilities to center lines, edge of easement, edge of R-O-W and other utilities. Show all wetlands within the project limits on the plan views to include boundary, classification designation and permit number.

- Profile--include existing and proposed water, sanitary sewer and storm drains labeled with type, class, diameter, length and grade of pipe; existing and finish grade lines (and surface elevations at fifty (50) foot intervals for irregular surfaces and at any abrupt change or break in elevation); vertical separation at all utility crossings and soil bore logs. Also show basement elevations of existing structures for sanitary sewer projects (See Section 30.01 of this manual).
- Plan and profile-- label all utilities with existing or proposed; type of utility; type, class and diameter of pipe. Include match lines with references to utility continuations onto other sheets. The plan and profile shall be shown on the same plan sheet for each section of proposed sanitary sewer or water main. Dimension lines and leader lines shall terminate with a sharp arrowhead. Text and numbers shall not be bisected by any line. Sewer elevations reflect invert elevation (INV) and water elevations reflect bottom of pipe elevation (BOP). Plan view pipe lengths break at all horizontal deflections; horizontal bends, tees and crosses. Profile pipe lengths break at all grade breaks; vertical bends, tees, and crosses.
- Service connection chart—include a table with columns for the following design and record drawing information on each water and sewer sheet: Lot and block numbers; pipe station of the connection at the main; elevation of the service connection at the main; elevation of the service connection at the property line; lineal footage of the service; and, service offset measured from the nearest property corner.
- Anode location table—include labeled columns to record constructed location of each anode by pipe station and right or left side of main.
- Water or sanitary sewer improvements shall include NAD83 State Plane Zone 4 coordinates for manholes, main line valves, keyboxes, hydrants and other infrastructure points. These points will have a horizontal error of less than 1 foot.
- Mainlines provide full lot frontage.
- Design to allow service to future lots and developments.
- Mains in standard MASS locations or provide approved waiver from Municipal Engineer.
- Standard MASS and DCPM details are not required on the plans. Project specific details shall be added as needed. An additional sheet may be added for details.
- Pipe stationing.
- Stations, elevations, pipe lengths and grades must compute.
- Horizontal/Vertical separation between utilities at utility crossings.
  - 3' minimum between storm and water or sewer (or 18" with insulation)
  - 18" minimum between water and sewer.

- Abandon or remove existing utilities.

**Water Plan and Profile:**

- Hydrants located in line with common (side) lot lines and 5' from R-0-W line or provide 5' x 15' hydrant easement.
- Double pumper hydrants on 12" mains.
- Hydrant leg diameter, pipe type, length and bearing.
- Reduce water mains to 6" after hydrant in cul-de-sacs.
- Minimum of two valves at each tee and three valves at each cross on the downstream side.
- Main valves every 1000'.
- Minimum 10' cover

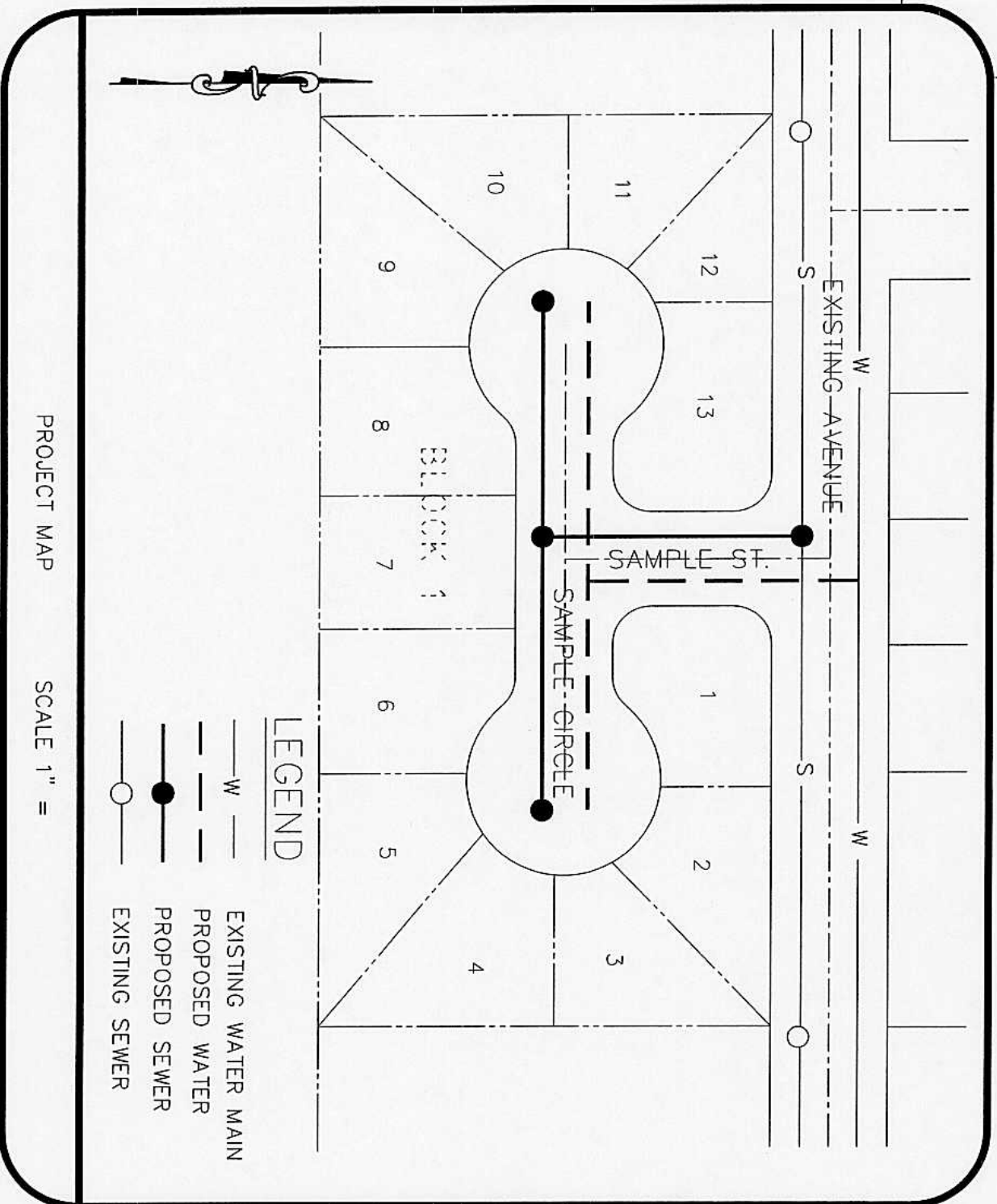
**Sewer Plan and Profile:**

- Minimum grade.
- Manhole invert and rim (top) elevations.
- Manholes and cleanouts identified by number and station.
- Type of manholes (A, B or C).
- Maximum distance between manholes is 400'.
- Cleanouts allowed on extendable mains less than 150' long.
- Minimum 8' of cover (unless unobtainable).

**Summary:**

- Prior to submittal of plans for approval, provide (when applicable): MOA Public Works approval, Fire Department approval, Wetlands Permit, State DOT permit, easement documents and plats.
- Submit Seven (7) complete plan sets for initial review.

(NOTE: DRAWING MUST PROVIDE 1-INCH BLANK MARGIN ON ALL SIDES TO BE ACCEPTED FOR RECORDING.)



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