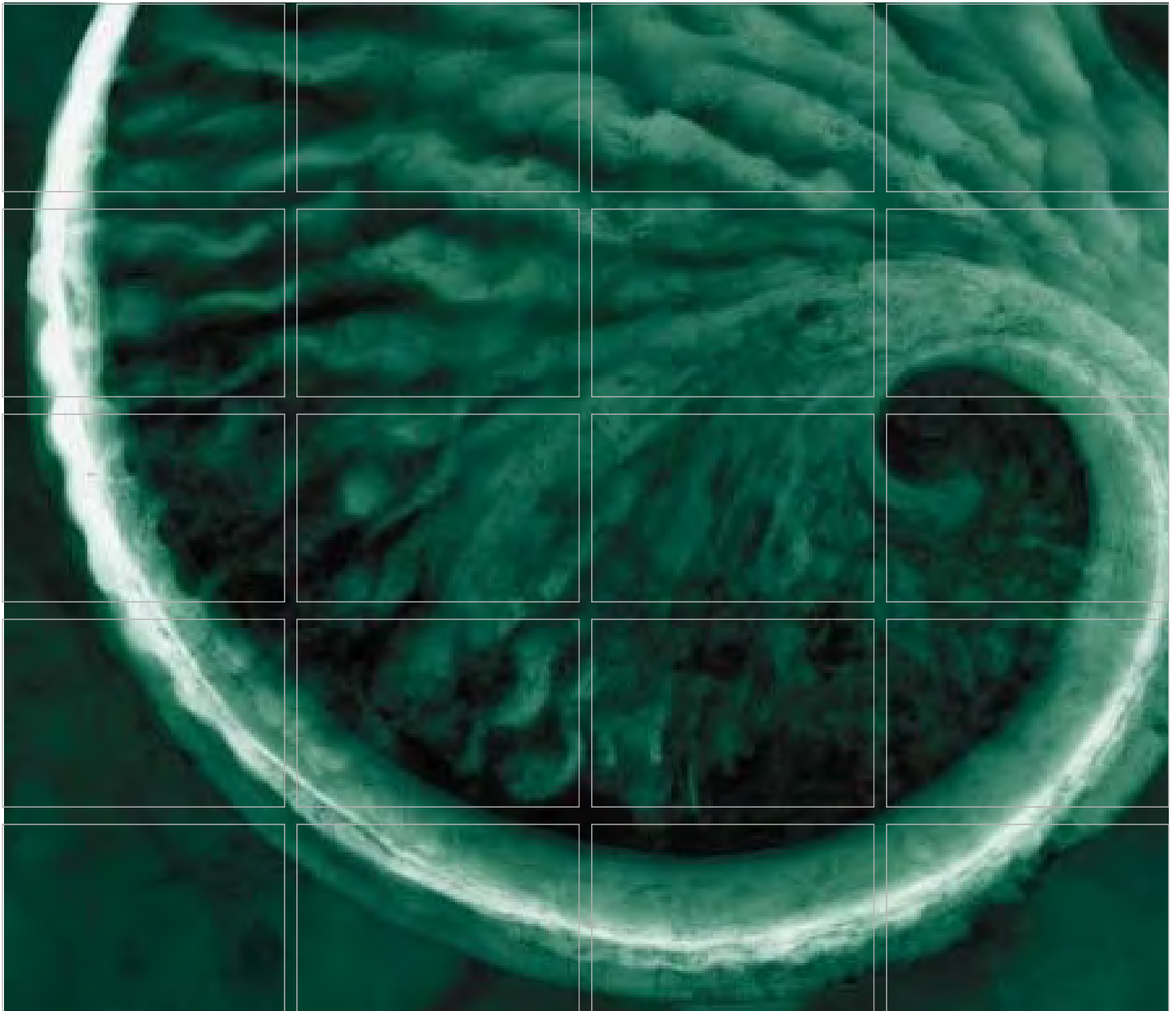




ERM

APPENDIX S

HISTORICAL STORMWATER PIPE
ABANDONMENT PLAN



Historical Stormwater Pipe Abandonment Plan

Glacier-Reichhold Site
5900 West Marginal Way SW
Seattle, Washington

July 2014

www.erm.com

Prepared for:
Glacier Northwest, Inc. and
Reichhold, Inc.

The world's leading sustainability consultancy



Glacier Northwest, Inc. and Reichhold, Inc.

Historical Stormwater Pipe Abandonment Plan

Glacier-Reichhold Site
5900 West Marginal Way SW
Seattle, Washington

July 2014

Project No. 232280.11



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ERM-West, Inc. (ERM) prepared this plan on behalf of Glacier Northwest, Inc. (Glacier) and Reichhold, Inc. (Reichhold) (together, “the Companies”) to abandon a historical stormwater pipe at the property located at 5900 West Marginal Way SW, Seattle, Washington (the “site;” see Figure 1). The Companies are performing remedial investigation/feasibility study (RI/FS) activities under an Agreed Order entered into with the Washington State Department of Ecology (Ecology) in accordance with the Model Toxics Control Act (Washington Administrative Code 173-340). As part of the RI/FS, the Companies are required to perform remedial investigation activities at the site. The abandonment of the historical stormwater pipe is a scope of work item described in the *Final Remedial Investigation and Feasibility Study Work Plan* ([Work Plan] Ecology 2012) and the *Remedial Investigation and Feasibility Study Work Plan Addendum* ([Work Plan Addendum] Ecology 2013).

Work was undertaken in 2009 to field-locate mapped stormwater infrastructure on the southern portion of the site shown in Figure 2. Figure 2 was generated using Seattle Public Utility (SPU) permit information recorded on side sewer card 4878-31 and an as-built drawing of the site stormwater system with hand-written permit and piping tie-in air test information dated 18 April 1975 (Appendix A). The as-built drawing provided dimensions and depths of the on-site 15-inch-diameter reinforced concrete pipe. The as-built drawing also depicted the locations, invert elevations, and top elevations of the five on-site catch basins located in the site parking lot as well as connecting stormwater piping locations, sizes, and materials. The location of the 15-inch stormwater pipe near where it tees into the SPU 48-inch line along the southern property boundary, as well as the connection of the pipe to the SPU 48-inch pipe, were verified using field trenching and an in-pipe camera survey (ERM 2009).

None of the five catch basins or other connecting pipes shown on Figure 2 were encountered, despite efforts to locate them using trenching and a metal detector. Although the catch basins were not identified during the 2009 survey, it is presumed that the stormwater drainage system was constructed as depicted in SPU records.

The historical stormwater pipe abandonment will consist of the following elements:

- Prepare the City of Seattle Department of Planning and Development (DPD) drainage/side-sewer permit for capping of the historical stormwater pipe (see permitting section below);
- Comply with the DPD substantive requirements described in the Permitting section below and in Appendix B (Drainage Side Sewer Permit);
- Locate underground utilities;
- Excavate and expose the pipe and cut out an approximately 2 to 4 feet pipe section;
- Sample stormwater solids within the pipe (if present);
- Camera survey the entire stormwater drainage system in the up-flow (north) direction of stormwater pipe to the extent possible;
- Cap pipe and allow DPD to perform an inspection per DPD requirements; and
- Backfill and compact.

ERM will subcontract with the following contractors:

- Geopotential to conduct the utility location and geophysical services of the areas prior to intrusive work.
- Clearcreek Contractors to complete the stormwater abandonment work.
- APS to complete the camera survey of the stormwater drainage system.

The Agreed Order directing preparation of the RI/FS for the site states that “Pursuant to RCW 70.105D.090(1), the PLPs are exempt from the procedural requirements of Chapters 70.94, 70.95, 70.105, 77.55, 90.48, and 90.58 RCW and of any laws requiring or authorizing local government permits or approvals. However, the PLPs shall comply with the substantive requirements of such permits or approvals.”

The two chapters of Revised Code of Washington (RCW) 70.105D.090 anticipated to have relevance to the scope of this project are:

3.1.1 *90.48 – Water Pollution Control Act*

The Water Pollution Control Act is the statutory authority for the Construction Stormwater General Permit, which authorizes the discharge of stormwater and non-stormwater associated with construction activity. Construction activity refers to clearing, grading, excavating, and other land-disturbing activities that result in the disturbance of 1 or more acres, as well as disturbance of less than 1 acre of total land area that is part of a larger common plan of development or sale, if the larger common plan will ultimately disturb 1 acre or more. The spatial scope of the pipe abandonment project is considerably less than 1 acre and is not part of a larger common plan for site development. Therefore, the project is not subject to construction stormwater permitting and is also not subject to the substantive requirements of the permit. While permitting is not required, appropriate construction stormwater best management practices (BMPs) will be implemented during the course of the pipe abandonment project as described in BMP C150 (Appendix C), and summarized below. To the extent practicable, work will be planned to be completed during a time when rain is not forecasted.

BMP C150 stipulates that erosion prevention and sediment control materials will be kept on site for the duration of the work in the event of unexpected heavy rains. Stockpiled soil will be covered with plastic sheeting if the stockpile is left on site for duration longer than the work day.

3.1.2 *90.58 – Shoreline Management Act of 1971*

The Shoreline Management Act of 1971 is the statutory authority for permitting non-exempt development projects within 200 feet of the Ordinary High Water Mark (OHWM) along shorelines of Washington State. Seattle administers the Act via Seattle Municipal Code (SMC) 23.60 – Shoreline District. The proposed work would occur within 200 feet of the OHWM; however, SMC 23.60.020.C defines exemptions for work performed within this distance - activities that shall not be considered substantial development and are permit exempt. Item No. 10 in this subsection exempts, “Demolition of structures, except where the Director determines that such demolition will have a major impact upon the character of the shoreline.” Abandonment of utilities (including drainage systems) falls within this definition.

Also, the work proposed does not meet the definition of a “substantial development” as it will not have a major impact on the character of the shoreline, no vegetation will be disturbed, no new impervious surface will be created, and the land use and character of the property will not change.

However, as identified by the City of Seattle on 6 December 2013 in the Shoreline Exemption Request Result for previous shallow soil boring/soil disturbance work at the site, the following substantive requirements were identified, are applicable and will be followed during the historical stormwater pipe abandonment:

- Appropriate BMPs shall be employed to prevent deleterious material from entering the aquatic environment during preparation for and during the project.
- If any debris enters the water, the debris shall be removed from the water immediately and disposed of at an appropriate upland facility.
- Appropriate BMPs shall be employed to minimize the amount of erosion at the shoreline caused by the project.
- If toxic material such as any petroleum product enters the water, this material shall be reported to Ecology, and shall be immediately contained using the appropriate equipment and material.
- Areas where native vegetation is removed, if any, as required by sampling shall be replanted with similar native vegetation appropriate for this location and properly maintained to ensure establishment of vegetation for life of project.

3.1.3 Other Requirements

The applicable DPD permit for drainage abandonment work is the [Drainage/Side Sewer permit](#) attached hereto as Appendix B (Note: the permit is to be filed at the DPD by Clearcreek Contractors). Drainage abandonment work is not subject to a grading permit. The requirements for grading permits set forth in [Chapter 22.170.060](#). Part B.10 of this Chapter exempts “trenching and backfilling for the installation, reconstruction or repair of utilities on property other than a public right-of-way.”

Based on the above information, ERM’s subcontractor, Clearcreek Contractors, will complete the Drainage/Side-Sewer permit and submit it to the DPD for approval. This permit will include the following:

1. The fee for the Drainage/Side-Sewer permit is \$375.
2. Prior to backfilling the historical pipe after the pipe has been capped, the DPD will require an inspection of the pipe to confirm it meets the

City of Seattle DPD requirements. The inspection will be tied to the permit number.

3.1.4 Substantive Requirements

The substantive requirements of the Drainage/Side Sewer permit are described in the DPD [Client Assistance Memo 503](#) attached as Appendix D and summarized as follows:

1. Prepare a site plan included as Figure 2.
2. Determine if the project requires a Registered Side Sewer Contractor – Although the work is not anticipated to be within a public right-of-way, the work will be completed by Clearcreek Contractors, a Registered City of Seattle’s approved Side Sewer Contractor.
3. Submit other necessary information – Not applicable for abandonment.
4. Inspection – Clearcreek Contractors will coordinate the inspection with the DPD as required.
5. As-built drawing – Essentially the same as the site plan (No. 1) in this case.

The storm drain abandonment work will comply with these substantive requirements.

3.2 FIELD DOCUMENTATION

Data collection activities performed at the site will be documented in field notebooks and/or on chain-of-custody records using waterproof, indelible ink. Information entered in the field notebook will include, at a minimum, the following items:

- Project name and number;
- Dates and times of entries;
- Weather conditions;
- Names of personnel performing the activities;
- A description of sample locations, including sample name and type;
- Depth of sample (if relevant);
- Sample descriptions (including odor and staining);
- Sample collection methods;
- Preservatives (if appropriate);

- Parameters for analysis;
- Field instrument calibration information;
- Field instrument readings; and
- Health and safety information.

Field notebooks will be stored in ERM's project file when not in use. In addition, digital photographs will be taken to document field activities. The digital photographs will be included in the final report.

At the beginning of each daily entry, the date, start time, weather, names of all sampling team members present, and the signature of the person making the entry will be entered. The names of visitors to the site, field sampling or investigation team personnel, and the purpose of their visit will also be recorded in the field logbook.

Measurements made and samples collected will be recorded. Whenever a sample is collected, a detailed description of the sample collection location shall be recorded. The ID number of any photographs taken at the site will also be noted.

The equipment used to collect samples will be noted, along with the time of the sampling, sample description, depth at which the sample was collected, volume, and number of containers. Decontamination procedures will also be recorded. Field quality control samples collected will also be recorded documenting the location and time of the sample collection.

3.3 LOCATE UTILITIES

ERM will contact the Utilities Underground Location Center (800-424-5555; <http://www.callbeforeyoudig.org>) before starting the excavation work. ERM will also screen for privately-owned underground utilities by interviewing subject property personnel cognizant of utility locations and by hiring a private utility location company to locate site-owned utilities and features.

3.4 EXCAVATE TO PIPE DEPTH AND CUT OUT PIPE SECTION

An excavator will be used to construct a trench measuring approximately 5 feet wide, 8 feet long, and 9 feet deep to expose the 15-inch concrete pipe at the location shown on Figure 2 (i.e., the location where the pipe was verified in 2009; coordinates of pipe intersection Washington State Plane

North American Datum 1983: X = 1267512.000, Y = 203669.011 and X = 1267512.437, Y = 203663.724). Excavated soil will be temporarily stockpiled next to the excavation for later use as backfill. A shoring box will be positioned in the trench because the excavation will be greater than 9 feet deep with vertical walls. ERM's subcontractor will be certified and trained in confined space entry due to the depth and limited nature of ingress/egress to and from the excavation. Appropriate confined space entry procedures will be followed prior to and during entry into the excavation. The health and safety plan will be reviewed before any intrusive activities related to the stormwater pipe abandonment are completed. Task specific job hazard analysis safety forms utilized by the contractor for tasks such as confined space entries will be appended to the health and safety plan as needed.

An approximately 2- to 4-foot section of the pipe will be carefully opened using the excavator bucket (see Section 3.5 for sampling the stormwater pipe solids).

The excavation will be undertaken in late summer when the water table is low. Water was not encountered at the base of the excavation in 2009 and the pipe was determined to be in good condition. Figure 3 shows the estimated depth of pipe in relation to potentiometric measurements in nearby well MW-18. In the unlikely event that water is encountered, it will be removed from the excavation using a pump, stored in a tank, tested, and properly managed.

3.5 *SAMPLE STORMWATER PIPE SOLIDS*

ERM's subcontractor will inspect the inside of the stormwater pipe at the cut to determine if there is evidence of recent drainage and if solids are present in the pipe. ERM's subcontractor will manually inspect the pipe section up-gradient of the section that was removed from the excavation for the presence of solids and, if present, manually collect a sample in accordance with the Work Plan and Work Plan Addendum and associated Quality Assurance Project Plan. The ERM project manager will be notified if stormwater solids are not present or there is insufficient sample volume available to fill the required laboratory containers prior to abandoning the sampling effort.

The sample will be placed into a laboratory-supplied sample jar, labeled (Sample no. SWP-01), and stored on ice in a cooler. The sample will be analyzed for the analytes listed below. If insufficient material is available for all analyses, then analyses will be prioritized in the following order:

- Metals (arsenic, chromium, copper, zinc,) by United States Environmental Protection Agency (USEPA) Method 6010B/6020/7471A;
- Phenols and hexachlorobenzene by USEPA Method 8270D;
- Dioxins/furans by USEPA 1613B;
- Polychlorinated biphenyl Aroclors by USEPA Method 8082;
- Total organic carbon by USEPA Method 9060; and
- Grain size by Puget Sound Estuary Protocols or equivalent.

3.6 *CAMERA SURVEY STORMWATER PIPE*

ERM will contract with a camera inspection firm to inspect the 15-inch stormwater pipe north of the cut and record the camera footage. The purpose of the inspection is to evaluate whether the drainage system was fully constructed as mapped in the SPU records and to assess pipe integrity along the length accessible (and without risk) to the camera equipment. If the entire drainage system cannot be surveyed from a single access point, multiple access points may be required to complete the camera survey.

3.7 *CAP PIPE AND DPD INSPECTION*

Upon completion of the stormwater solids sampling and camera survey of the pipe, both ends of the exposed and cut pipe will be capped in accordance with the DPD requirements (<http://www.seattle.gov/dpd/codes/dr/DR2011-4.pdf>) and summarized as follows:

1. At the end of each cut pipe designated to be permanently capped, a mechanical plug will be inserted in both pipe ends. Backfilling the abandoned length of pipe with controlled density fill will act to permanently seal the pipe ends. See the Backfill and Compaction (Section 3.9) for additional information on this process.
2. Once the stormwater pipe has been capped and prior to backfilling the stormwater pipe, the cap will be inspected and approved by a DPD inspector. An inspection will be scheduled by phone (206-684-8900) or via the online form located here: (<http://web1.seattle.gov/DPD/InspectionRequest/default.aspx>).

Same-day inspections are typically provided for requests received before 7 a.m.

Backfilling of the pipe shall not proceed without inspection and approval by the DPD inspector. The DPD inspector's approval of the cap and authorization to backfill shall be documented in the field notes prior to continuing with the abandonment. Documentation will include DPD inspector name and phone number, site visit date, and approval authorization elements.

3.8 *SOIL MANAGEMENT*

The following sections describe the soil handling, stockpiling and soil contingency planning methods.

3.8.1 *Soil Handling and Stockpiling*

Excavated soil will be stockpiled on visqueen/heavy-duty plastic sheeting adjacent to the excavation area at a safe distance from the excavation. As previously noted, the depth of the excavation is estimated to be approximately 9 feet below grade. The lithologic layers anticipated to be encountered during the stormwater pipe excavation in order of presence include the surficial gravel, shallow fill, and dredged fill. Excavated soil will be stockpiled in a manner that allows the soil to be returned to the excavation in the same order that it was removed. Stockpiles to remain aboveground overnight will be covered with visqueen/heavy-duty plastic and sand-bagged to prevent contact with precipitation or blowing of material. No excavation will be performed during periods of precipitation or heavy winds.

During excavation activities, the ERM field consultant will field screen the soil, which will consist of visual and olfactory awareness for signs of contamination. If potentially-contaminated soils are encountered, excavated soil will be segregated and stockpiled separately from clean material in a bermed staging area. The bermed area will be covered with heavy-duty plastic sheeting to contain the soil. When not actively adding or removing soil from the stockpile, the soil should be covered with plastic sheeting in a manner that prevents rainwater from contacting the soil or accumulating in the bermed area.

3.8.2 *Contingency Planning*

Soils exhibiting unexpected characteristics, such as evidence of unanticipated contamination, will be segregated and characterized separately from the remainder of the soils. Appropriate characterization, handling, transport, and treatment/disposal requirements will be

developed for these soils based initially on field observations and subsequently as initial characterization data becomes available.

Once characterization is complete and a manifest has been issued by the facility accepting the waste, contaminated soil from the bermed area will be loaded directly onto trucks or into roll-off containers for transport to the treatment/disposal facility.

3.9 *BACKFILL AND COMPACTION*

The trench will be backfilled to grade with control density fill to the top of the abandoned pipe and then to grade with the excavated soil removed to access the pipe. If potentially impacted soil is encountered during the excavation, the soil will not be reused for backfill. Certified clean backfill will be brought on site and used to backfill the excavations. The backfilled soil will be compacted in 1.5- to 2-foot lifts using the excavator.

3.10 *SUBSURFACE IMAGE EVALUATION*

In addition to the abandonment work associated with the historical stormwater pipe, the Companies plan to investigate a subsurface image that was observed by the utility clearance subcontractor for the recent upland investigation work. The image that was observed appears to be oriented in an east/west direction in the southern portion of the property at a depth of four feet below ground surface, and may be 12 inches or more in diameter, and may be metallic (or contain rebar).

ERM will direct Geopotential to reevaluate the subsurface image, and mark its location on the ground surface using geophysical and utility location equipment including, MALA Ground Penetrating Radar unit with a 500 MHz antenna, Aqua-Tronics Tracer, Schonstedt magnetometer, and Sure-Lock All Pro Locator or similar. If the previously observed image is confirmed, to the extent practical, the eastern and western extents will also be located and marked on the ground surface.

The Companies plan to advance three test pits to evaluate the subcontractor's observation, and if confirmed, test pit the central, east and west extents. If the geophysical and test pitting confirms the presence of a subsurface feature, and the feature can be safely accessed or the end of the feature is observed, a camera survey will be performed to investigate the integrity of the feature. If the feature can be accessed, and solids are present, a solids sample will be collected and submitted to the laboratory for the solids analytical parameters described above in the historical

stormwater pipe abandonment. If the subsurface image is not confirmed, or the subsurface feature cannot be accessed, the test pits will be backfilled in accordance with the procedures and methodologies described in this plan.

ERM will prepare an as-built drawing showing the location of the abandonment for submittal to DPD for their files per the drainage/side sewer permit requirements. The abandonment work and findings (i.e., the camera survey or analytical results of storm drain solids) will be reported to Ecology in the RI.

Figures

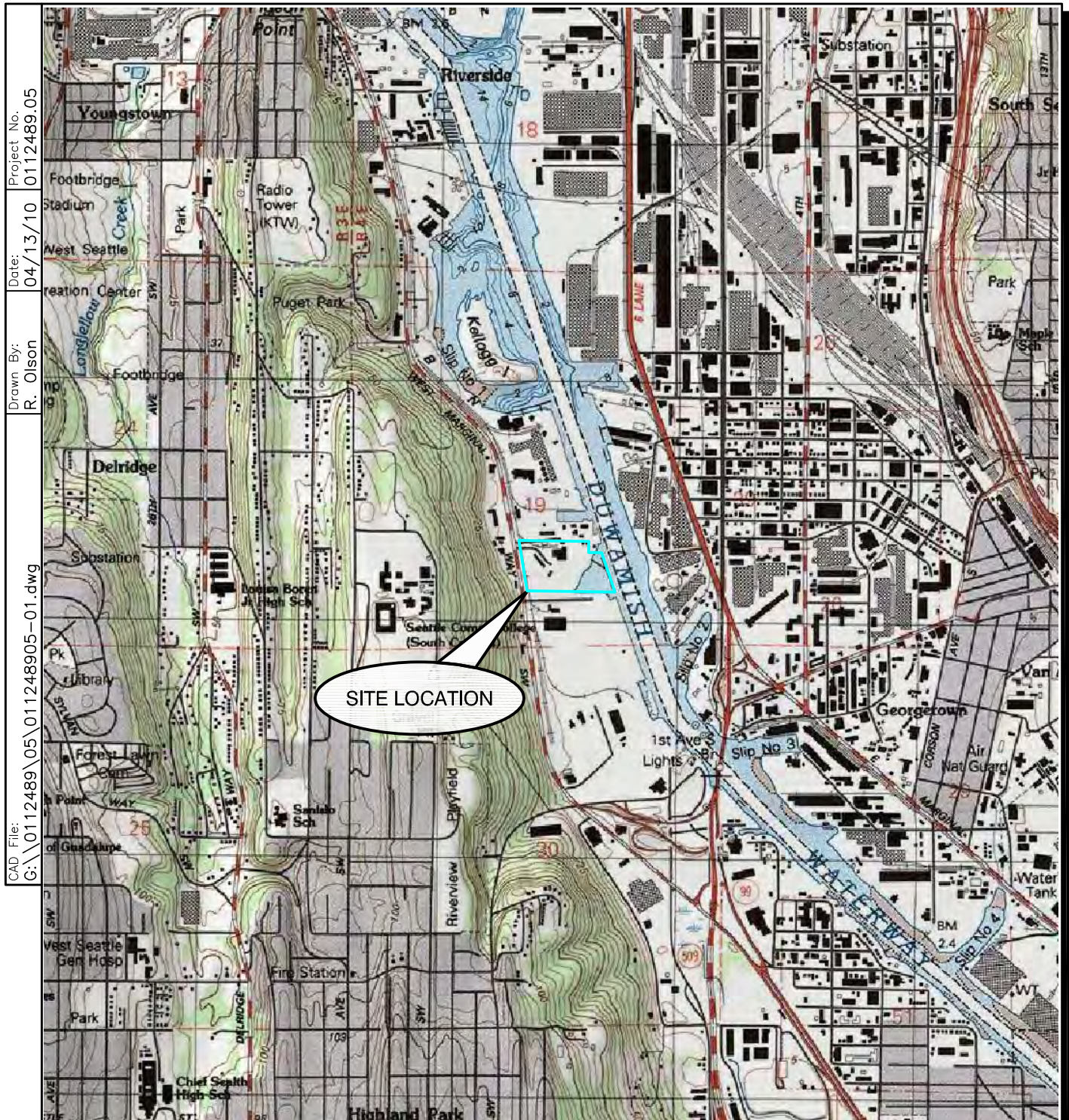
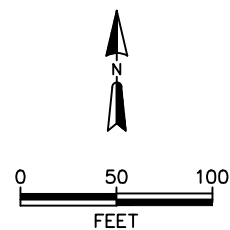


Figure 1
 Site Location Map
 Glacier Northwest, Inc. - Reichhold, Inc. Site
 5900 W. Marginal Way, SW
 Seattle, Washington

References:
 TOPO!® Software
 U.S.G.S. 7.5 Minute Series (Topographic) Quadrangle,
 Seattle South E, WA
 Version: 1983; Current: 1978



- Stormwater Piping and Catch Basins Shown on City of Seattle Side-Sewer Card
- Property Line

Figure 2
Approximate Location of Stormwater Pipe Abandonment
Glacier Northwest, Inc. - Reichhold, Inc. Site
5900 West Marginal Way SW
Seattle, Washington

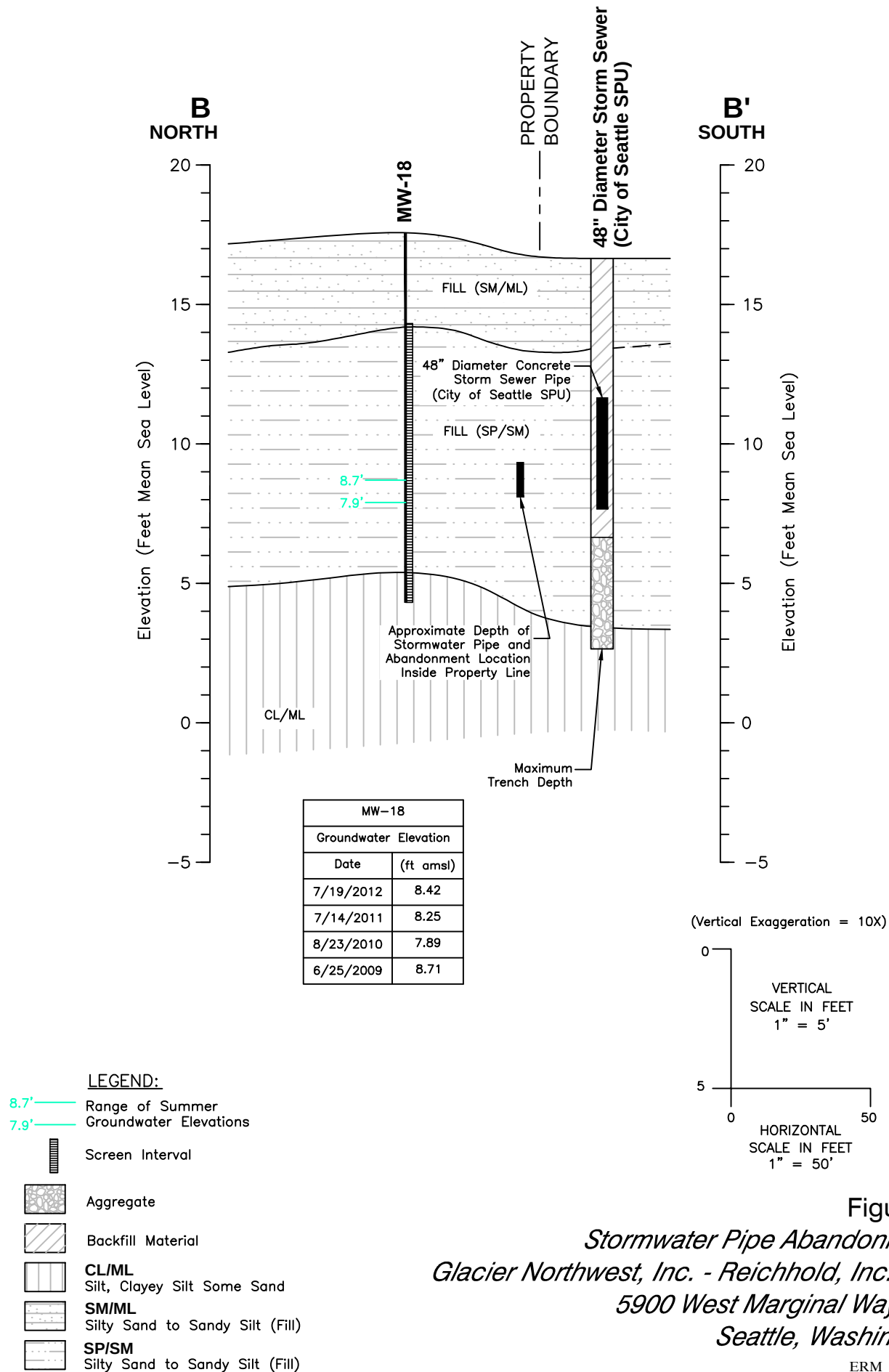
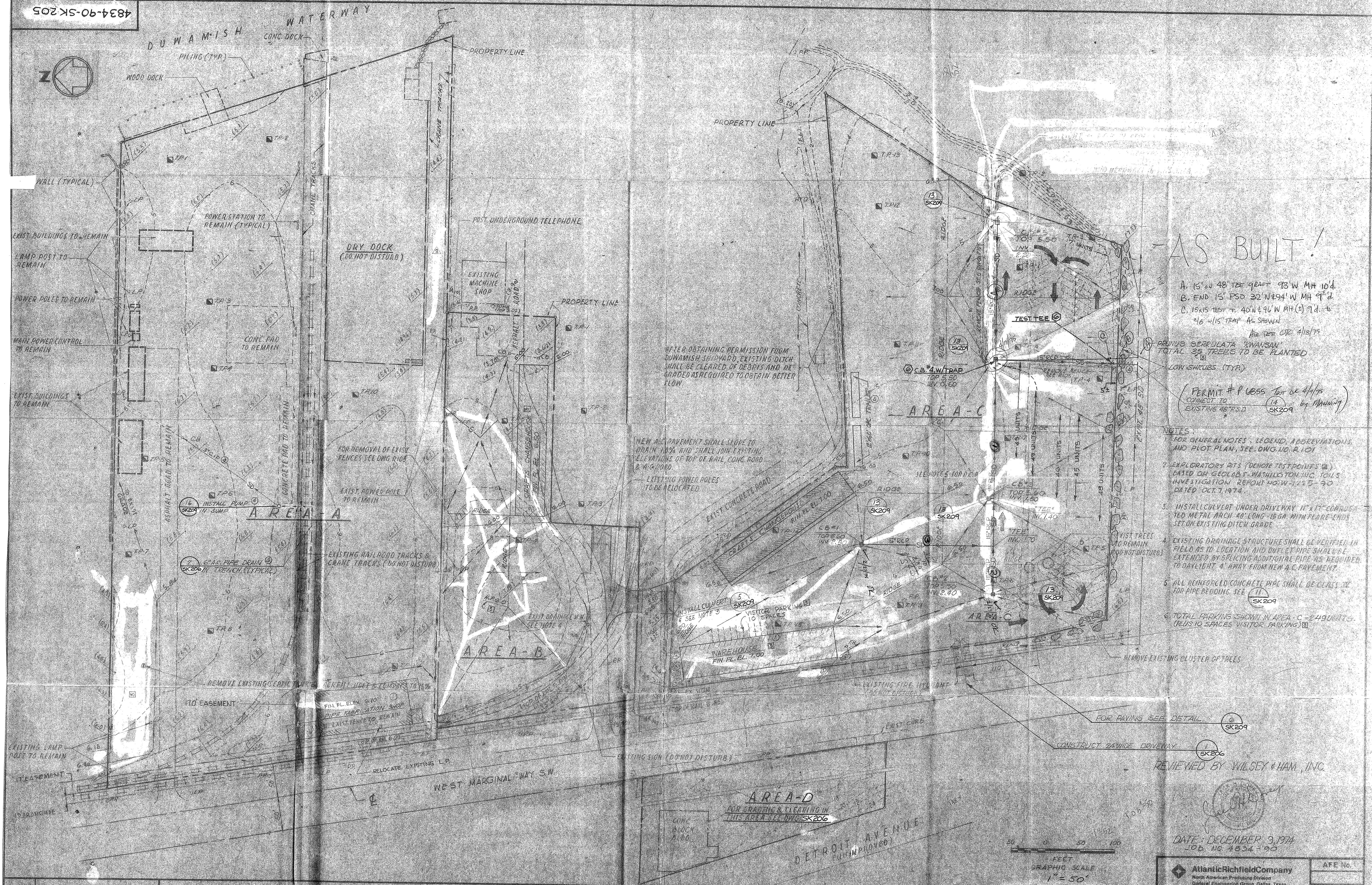


Figure 3
Stormwater Pipe Abandonment
Glacier Northwest, Inc. - Reichhold, Inc. Site
5900 West Marginal Way SW
Seattle, Washington

Appendix A
1975 Stormwater Drainage
System As-Built Drawing



<p>SK206 GRADING AND PARKING PLAN AREA D SK204 PLOT PLAN AREAS A THRU D</p>	<p>DATE: DECEMBER 9, 1974 JOB NO. 4834-90</p> <p>Atlantic Richfield Company North American Trading Division General Engineering Group, Dallas, Texas</p> <p>PRUDHOE FACILITIES PROJECT - PRUDHOE BAY, ALASKA PORT OF SEATTLE GRADING PLAN AND CLEARING PLAN AREAS A, B, C</p> <p>THE RALPH M. PARSONS COMPANY 4834-90-SK205</p>	<p>DATE: DECEMBER 9, 1974 JOB NO. 4834-90</p> <p>Atlantic Richfield Company North American Trading Division General Engineering Group, Dallas, Texas</p> <p>PRUDHOE FACILITIES PROJECT - PRUDHOE BAY, ALASKA PORT OF SEATTLE GRADING PLAN AND CLEARING PLAN AREAS A, B, C</p> <p>THE RALPH M. PARSONS COMPANY 4834-90-SK205</p>	<p>DATE: DECEMBER 9, 1974 JOB NO. 4834-90</p> <p>Atlantic Richfield Company North American Trading Division General Engineering Group, Dallas, Texas</p> <p>PRUDHOE FACILITIES PROJECT - PRUDHOE BAY, ALASKA PORT OF SEATTLE GRADING PLAN AND CLEARING PLAN AREAS A, B, C</p> <p>THE RALPH M. PARSONS COMPANY 4834-90-SK205</p>
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Appendix B
Drainage/Side Sewer Permit



City of Seattle, Department of Planning and Development
Mailing Address: 700 5th Ave, Suite 2000, PO Box 34019, Seattle, WA 98124-4019
OTC Phone: (206) 684-8464 Drainage Counter Phone: (206) 684-5362
Website: www.seattle.gov/dpd
ASC Hours: M / W / F 8:00-4:00 & Tu / Th 10:30-4:00



PERMIT APPLICATION

Drainage/
Side Sewer

Work Site Address: 5900 West Marginal Way SW, Seattle, WA

Work Activity Location: On property southeast portion of the property (see site plan).

Occupancy: ☐ Single Family ☐ Multi-Family ☐ Commercial ☐ Institutional ☒ Industrial

Description of Work: Cap stormwater drainage pipe on the property. Safely excavate to pipe; install shoring box; remove approx. 2 to 4ft section of pipe; video survey the pipe; cap both ends of exposed pipe; inspection; backfill; and compact.

Associated Building Permits: Related Side Sewer Permits:

*REVISION TO ISSUED PERMIT - Permit #: (mark revisions/additions on reverse side)

WORK SITE OWNER / TENANT INFORMATION

☒ Owner ☐ Tenant ☐ Owner's Agent

☐ King County Metro Reporting Information

Name: CalPortland Company

Phone: (206) 764-3000

Fax:

Address: 5975 East Marginal Way S Apt/Ste #:

City/State: Seattle Zip: 98134

CONTRACTOR INFORMATION

Fill out completely if applicable, no exceptions.

(24 Hour Contact Required if Working in the ROW)

Company Name: Clearcreek Contractors Inc.

Phone: (425) 252-5800

Fax: (425) 252-1093

Address: 3919 88th Ste NE Suite:

City/State: Marysville, WA Zip: 98270

Payment and Responsibility for Fees:

I, _____, am the **Owner / Applicant** of the above referenced property.

I understand that both the applicant for the permit, and the owner of the property for which the permit is required, are jointly and severally responsible for payment of review and inspection fees required by SMC 21.16. However, when an applicant is not the owner and is not acting, even in part, as agent for the owner, the applicant is solely responsible for payment of applicable fees.

Signed this _____ day of _____ 20_____.

by _____ of _____
Signature Company

For DPD Staff Use Only:

Permit #: _____

Permit Fees: _____

Intake Reviewer: _____

Transfer Construction Permit Requirements

☐ Yes ☐ No

Reuse Existing SS

☐ Yes ☐ No

NOTE: This application form CANNOT be mailed and/or faxed in for processing, please contact the Drainage Counter at (206) 684-5362 for more information ***

Complete if Activity is in the Right-of-Way:

- **Curb Crossing / Staging** (check one): Yes ☐ No ☐
- **Excavation in R-O-W** (check one): Yes ☐ No ☐
- **RSSC to Perform Street Restoration** (check one):
Yes ☐ No ☐

Note: If excavating in the R-O-W, the Contractor must be registered with the City of Seattle as an RSSC.

Temporary Dewatering for Construction

☐ Field ☐ Full (if full: SPU / King County)

Other:

☐ Pipe Lining ☐ Exception

DRAINAGE SYSTEM:

of Service Drain
Lines Capped 1

☐ Addition / Alteration

☐ Repair

☐ New System

☐ Temporary

of New Connections to Main: _____ # of Other New Connections: _____ # of New/Replaced/Repair Pumps: _____

FLOW CONTROL TYPE:

- ☐ Bio-Engineer
- ☐ Infiltration
- ☐ No Control
- ☐ Pipe
- ☐ Surface
- ☐ Vault

FLOW CONTROL STANDARD:

- ☐ Forest & Peak
- ☐ Forested
- ☐ Pasture
- ☐ Pasture & Peak
- ☐ Peak
- ☐ Wetland

TREATMENT STANDARD TYPE:

- ☐ Basic
- ☐ Basic Plus
- ☐ No Treatment

BASIC PLUS TYPE:

- ☐ Enhanced
- ☐ Oil
- ☐ Phosphorous

DISCHARGE POINT TYPE:

- ☐ Alley
- ☐ Combined System
- ☐ Direct
- ☐ Ditch
- ☐ On Site
- ☐ Other
- ☐ Storm System
- ☐ Weep Hole

Total Disturbed Area _____ square feet

New Plus Replaced Impervious Surface _____ square feet

New Impervious Surface _____ square feet

Total Area Mitigated by GSI _____ square feet

Total Area Requiring Soil Amendment _____ square feet

SANITARY SYSTEM:

of Service Sewer
Lines Capped _____

☐ Addition / Alteration

☐ Repair

☐ New System

☐ Temporary

of New Connections to Main: _____ # of Other New Connections: _____ # of New Dwelling Units: _____

of New Connections to Side
Sewer: _____ # of New/Replaced/Repair
Pumps: _____

REQUIRED KING COUNTY RECORDING DOCUMENTS (For DPD Staff Use Only):

Memorandum of Drainage Control (MDC)			
Side Sewer Agreement			
Joint Use Maintenance Agreement			
Connection Agreement			
Easement Agreement			
Other: _____		Other: _____	

SS Evaluation & Certification Form (DPD Staff stamp with project number and send to microfilm) ☐

NOTE: This application form CANNOT be mailed and/or faxed in for processing, please contact the Drainage Counter at (206) 684-5362 for more information ***

Appendix C
Stormwater Best Management
Practices

BMP C150: Materials On Hand

Purpose

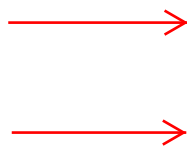
Quantities of erosion prevention and sediment control materials can be kept on the project site at all times to be used for emergency situations such as unexpected heavy summer rains. Having these materials on-site reduces the time needed to implement BMPs when inspections indicate that existing BMPs are not meeting the CSWPPP requirements. In addition, contractors can save money by buying some materials in bulk and storing them at their office or yard.

Conditions of Use

- Construction projects of any size or type can benefit from having materials on hand. A small commercial development project could have a roll of plastic and some gravel available for immediate protection of bare soil and temporary berm construction. A large earthwork project, such as highway construction, might have several tons of straw, several rolls of plastic, flexible pipe, sandbags, geotextile fabric and steel “T” posts.
- Materials are stockpiled and readily available before any site clearing, grubbing, or earthwork begins. A large contractor or developer could keep a stockpile of materials that are available to be used on several projects.
- If storage space at the project site is at a premium, the contractor could maintain the materials at their office or yard. The office or yard must be less than an hour from the project site.

Design and Installation Specifications

Depending on project type, size, complexity, and length, materials and quantities will vary. A good minimum that will cover numerous situations includes:



Material	Measure	Quantity
Clear Plastic, 6 mil	100 foot roll	1-2
Drainpipe, 6 or 8 inch diameter	25 foot section	4-6
Sandbags, filled	each	25-50
Straw Bales for mulching,	approx. 50# each	10-20
Quarry Spalls	ton	2-4
Washed Gravel	cubic yard	2-4
Geotextile Fabric	100 foot roll	1-2
Catch Basin Inserts	each	2-4
Steel “T” Posts	each	12-24

Maintenance Standards

- All materials with the exception of the quarry spalls, steel “T” posts, and gravel should be kept covered and out of both sun and rain.
- Re-stock materials used as needed.

Appendix D
DPD Client Assistance
Memo 503

Seattle Permits

— part of a multi-departmental City of Seattle series on getting a permit

Side Sewer Permits in Seattle

Updated June 6, 2007

When is a Side Sewer Permit Required?

The City of Seattle requires that a Side Sewer Permit be issued **before work begins** on all side sewers and service drains, including new installations, alterations, repairs, capping, relocations, removals, and conditional and temporary dewatering work. Emergency repair work is allowed without getting a permit in advance, but a permit must be obtained from the Seattle Department of Planning and Development (DPD) the next City working day,

For information on side sewer design and construction requirements, please see DPD Director's Rule (DR) 2-2006/SPU DR 01-06, "Requirements for Design and Construction of Side Sewers (Wastewater Discharges)" at www.seattle.gov/dclu/codes/dr/DR2006-2.pdf and DPD DR 3-2006/SPU DR 02-06, "Requirements for Design and Construction of Service Drains (Drainage Water Discharges)" at www.seattle.gov/dclu/codes/dr/DR2006-3.pdf.

The permit for this work will cover all proposed side sewer work located on-site and within the public right-of-way (ROW), if applicable. If the project includes work in the ROW, see Step 3 on page 2. Both side sewers and service drains may be included on the same permit application.

Side sewers and service drains, whether located in a public or private property, are owned, installed, operated and maintained by the owner or occupant of the premises served.

For side sewer permit purposes, the following definitions are used:

- **Primary Contact** – Property owner, tenants, property owner's agent, side sewer contractor or Registered Side Sewer Contractor.

- **Metro Billing Contact** – Individual or firm to whom King County will direct the invoice for residential sewer use certification, with a sewage treatment capacity charge as applicable.
- **Property Owner** – Individual or firm that owns the property for which the permit will be issued.
- **Registered Side Sewer Contractor (RSSC)** – Individual or firm that has been certified by DPD to perform side sewer utility construction within the public ROW.
- **Side Sewer** – A privately owned and maintained pipe system which is designed to carry sewage and/or stormwater runoff, surface water, foundation drainage, and other unpolluted water leading from a plumbing outlet, drain or other facilities to the public sewer system or approved outlet.
- **Service Drain** – A privately owned and maintained pipe system which is designed to carry stormwater runoff, surface water, foundation drainage, roof drainage, and other unpolluted water to the public system or on-site infiltration system.
- **Temporary Dewatering** – Refer to CAM 506, "Side Sewer for Temporary Dewatering for Construction Sites."

How to Prepare and Process Your Application for a Side Sewer Permit

Permit application processes vary depending on the size and complexity of the project. The basic process for obtaining a Side Sewer Permit from DPD is described below:

STEP 1: Obtain an Application Form

The applicant begins by completing an application for a Side Sewer Permit. Applications and forms are downloadable from DPD's Side Sewer Program website at www.seattle.gov/dpd/sidesewer. They are also available from the DPD Public Resource Center (PRC), located on the 20th floor of Seattle Municipal Tower at 700 Fifth Ave., (206) 684-8467.



STEP 2: Prepare a Site Plan

Along with a side sewer application form, the applicant must submit a site plan for the work. A site plan is a scale drawing showing the location of all structures on the property, dimensions of the structures, and the location of all existing and proposed side sewers. For further information on how to prepare a site plan, refer to CAM 103, "Site Plan Requirements," and 103A, "Site Plan Guidelines."

If the side sewer work is associated with a building permit, provide an approved building permit plan set or site plan set. Otherwise, DPD will provide applicants with a map template of their individual property that will be useful in drawing up a site plan. To obtain a JPG file of a property map, call DPD Drainage & Sewer Review staff at (206) 684-5362, or email them at sidesewerinfo@seattle.gov. The JPG will be mailed out via email or a printed copy will be mailed by first class regular mail. If the applicant wishes to do further research in developing a site plan for the application, they may visit the side sewer website at www.seattle.gov/dpd/sidesewer.

A site plan is not required for a repair to an existing private side sewer system.

STEP 3: Determine if Project Requires a Registered Side Sewer Contractor (RSSC)

Side Sewer Permits require the involvement of an RSSC if the work is proposed in the ROW, including repairs, replacement and new construction of side sewers. For side sewer work in the ROW, the RSSC must be named on the permit.

Certification for becoming an RSSC in Seattle is administered by DPD. For more information or to locate and RSSC, visit <http://web1.seattle.gov/dpd/rssc>.

STEP 4: Submit other Necessary Information

The applicant may also need to submit other information, as appropriate, with the application. The following documents will be recorded with King County Records and Elections. The documents are available online at www.seattle.gov/dpd/Publications/Forms/Side_Sewer/default.asp.

This may include:

- **Side Sewer Easement Agreement** – Seattle Municipal Code (SMC) 21.16.250A – for use when the side sewer will be located on a parcel other than that of the building served by the side sewer.

- **Side Sewer Hold Harmless and Indemnification Agreement** – SMC 21.16.260 and 21.16.210 – for use whenever the side sewer or construction will not meet standards of the code as authorized under SMC 21.16.260. This also protects the City from all future claims due to said side sewer installation or construction (i.e., pipes with less than two percent grade, pipes with greater than 100 percent grade, an invert connection less than 12 inches above main combined sewer or drain top, etc.)
- **Side Sewer Connection, Hold Harmless and Indemnification Agreement** – SMC 21.16.250B – for use when connecting two (2) or more structures to one side sewer on the same property.
- **Side Sewer Easement, Connection, Hold Harmless and Indemnification Agreement** – SMC 21.16.250B – for use when more than one property connects to the same side sewer.
- **Memorandum of Drainage Control (MDC)** – SMC 22.802.020B(c) for drainage, except for projects having less than 750 square feet of land disturbing activity. The MDC summarizes the terms of the drainage control plan, including any known limitations of the drainage control facility and an agreement by the owners to implement those terms.
- **Temporary Sewer Connection Agreement** – SMC 21.16.110 – for use whenever a Temporary Sewer Connection Permit is granted. This agreement permits temporary connection to a City facility located downstream until such time a City main is constructed in front of the subject parcel, at which time the applicant will be required to reconnect to the new main.
- **Out of City Sewer Agreement** – SMC 21.20.020 – for use when the City agrees to connect out-of-City property to the City sewer system.
- **Special Sewer Connection Charge Contract** – SMC 21.24.030. This document establishes an agreement between the Property Owner and the City for installment payments to be made by the Property Owner to the City for their prorated cost of City mains.

STEP 5: Submit the Application

No appointment is necessary to submit an application for a Side Sewer Permit.

You may sign in at a self-serve computer in the DPD Applicant Services Center (ASC) on the 20th floor of Seattle Municipal Tower at 700 Fifth Ave., (206) 684-8850.

Fees related to side sewer construction and inspection are based on the Fee Ordinance SMC 21.24.021. For more information, contact the DPD Drainage & Sewer Desk staff at (206) 684-5362 or review the Fee Ordinance, SMC 21.24.021, available on DPD's Side Sewer Program website at www.seattle.gov/dpd/sidesewer.

STEP 6: Permit Issuance

In most cases, Side Sewer Permits are issued the same day as application. Projects with over 5,000 square feet of new or replaced impervious surfacing require an approved drainage control plan. This plan is normally reviewed and approved with the building permit.

Permit Duration

Side Sewer permits are valid for 18 months, unless renewed or prior arrangements have been made with DPD.

The applicant must extend the permit for another three (3) months for sites where construction has yet to be completed and the side sewer permit is past the permit expiration date. Failure to extend the permit period will result in the inability for the City to provide additional inspections, which may result in delaying the final approval of other DPD permits, including building permits.

Inspection Process for Side Sewers

In order to be in compliance with your side sewer permit conditions, all sanitary and drainage pipe must be inspected by a DPD Site Inspector prior to covering. The pipe must be uncovered, bedded to the springline, and holding a pressure test (if applicable) in order to pass the inspection. An as-built drawing is required to pass the final inspection.

When the work is ready for an inspection, the permit holder, side sewer contractor, or RSSC (if required), must notify DPD by calling the 24-hour inspection request line at (206) 684-8900 or online at www.seattle.gov/dpd (see "Scheduling an Inspection" below). You must be available to meet with the DPD site inspector during regular business hours when requested.

Inspections for permitted work will not be scheduled for Saturday, Sunday or holidays.

For after-hours inspections of side sewer construction in the downtown area, special arrangements must be made with DPD 72 hours in advance.

Scheduling an Inspection

Same-day inspections are provided for requests received **before 7 a.m.** on the DPD Inspection Request Line, (206) 684-8900 or online at www.seattle.gov/dpd. On the day of the requested inspection, the inspectors will **attempt** to contact the caller to confirm an approximate time for completing the inspections.

NOTE: Cell phone calls are discouraged when scheduling side sewer inspections due to frequent connection problems.

Calls received **after 7 a.m.** will be scheduled for the following workday.

For emergency repair inspections or to cancel an inspection, call Customer Support at (206) 684-8860, Monday-Friday, 7:30 a.m.-4:30 p.m. Be sure to have the permit number and address available when calling.

Requirement for Coordination with SPU and SDOT in the ROW

SPU will make a new connection to the existing main with the **core tap** while the contractor completes the pipe extension from the connection. After all of the work is completed and approved, Street Use will repair the street.

- SPU Core Tap: (206) 615-0511
- SDOT Street Restoration: (206) 684-5253

An SDOT street use permit for use of the ROW is required when applying for a side sewer permit. DPD collects the SDOT ROW use fee in conjunction with side sewer permitting. Permit fees are paid at the DPD Cashier, located on the 20th floor of Seattle Municipal Tower, 700 Fifth Ave., (206) 386-9780. Prior to beginning any work within the ROW, the applicant must contact SDOT.

Requirement for As-Built Plans

The permittee must submit documentation of what was constructed for the side sewer project. Approval by the site inspector of the as-built plan is required prior to finalizing a side sewer permit. For instructions on how to prepare as-built plans, consult DPD CAM #504, "Side Sewer As-Built Plan Requirements."

Property Located Outside the City of Seattle that Could Be Serviced by Seattle City Utilities

A property owner located outside the city limits may be allowed to connect to a Seattle City main if the non-city jurisdiction does not serve the property or the City's mains are more accessible than the local jurisdiction.

Before a connection will be approved by DPD, the property owner **must contact SPU to receive their approval**. Call the DPD Drainage Desk at (206) 684-5362 for more information.

Key Side Sewer Contacts

Application Information: Contact the DPD Drainage & Sewer Review Desk at (206) 684-5362 or email sidesewerinfo@seattle.gov. Visit www.seattle.gov/dpd/sidesewer for additional information.

Scheduling Inspections: Call the DPD Inspection Request Line at (206) 684-8900 or online at www.seattle.gov/dpd (see details on page 3).

Technical Information: Send an email to sidesewerinfo@seattle.gov or contact the most pertinent listing below:

- DPD Drainage & Sewer Review Desk, (206) 684-5362
- SPU Core Tap, (206) 615-0511
- SDOT Street Restoration, Street Use Counter, (206) 684-5283
- SPU Non-Permitted Drainage or Sewerage Complaints, (206) 684-5800
- Seattle-King County Public Health, (206) 296-4932

Access to Information

Links to electronic versions of DPD **Client Assistance Memos (CAMs)**, **Director's Rules**, and **Forms** are available on the "Publications" and "Codes" pages of our website at www.seattle.gov/dpd. Paper copies of these documents are available from our Public Resource Center, located on the 20th floor of Seattle Municipal Tower at 700 Fifth Ave. in downtown Seattle, (206) 684-8467.