

WAC 197-11-960 Environmental checklist.

ENVIRONMENTAL CHECKLIST

Purpose of checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer," and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable:

BNSF Oil Pipeline Site – MTCA Remedial Action

2. Name of applicant:

BNSF Railway Company

3. Address and phone number of applicant and contact person:

Bruce Sheppard

2454 Occidental Avenue, Suite 1A

Seattle, Washington 98134

Sally Fisher

GeoEngineers

1101 South Fawcett Avenue, Suite 200

Tacoma, Washington 98402

253.383.4940

4. Date checklist prepared: *March 25, 2008*

5. Agency requesting checklist: *Washington State Department of Ecology*

6. Proposed timing or schedule (including phasing, if applicable):

Construction to complete the remedial actions is scheduled to occur between July 2008 and October 2008.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

Groundwater monitoring will be performed at least yearly following remedial activities. Monitoring wells are already in place on East D Street for groundwater sample collection.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

- *GeoEngineers, Inc. (2007a), Draft Cleanup Action Plan, The BNSF Oil Pipeline Site, Tacoma, Washington.*
- *GeoEngineers, Inc. (2007b), Final Remedial Investigation/Feasibility Study, BNSF Oil Pipeline Site, Tacoma, Washington.*
- *Robinson, Noble, Saltbush, Inc. (2005), Tacoma Fixtures Property, 19th Street Underground Storage Tank Closure Report.*
- *GeoEngineers, Inc. (2004a), Groundwater Investigation BNSF Oil Pipeline Site, Tacoma, Washington.*
- *GeoEngineers, Inc. (2004b), Final Interim Action Report, BNSF Oil Pipeline Site, Tacoma, Washington.*
- *Langseth Environmental (2002a), Site Characterization Report, Nichols Trucking DOE Site ID# 011950, Underground Storage Tank Removal Project.*
- *Landseth Environmental (2002b), Final Voluntary Cleanup Report, Nichols Trucking, WDOE Site ID# 011950, Petroleum Contaminated Soil Remediation Project.*

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

No.

10. List any government approvals or permits that will be needed for your proposal, if known.

City of Tacoma Street Use Permit.

City of Tacoma Grading Permit.

Tacoma-Pierce County Health Department Waste Disposal Authorization.

City of Tacoma Special Approved Discharge permit (for disposal of water generated by excavation dewatering).

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The project is a Model Toxics Control Act (MTCA) cleanup under supervision of the Washington Department of Ecology, at a site in Tacoma, Washington. The Site consists of areas near and along the alignment of a former pipeline that was used to transport bunker oil from bulk storage tanks located north of the intersection of East 15th Street and "D" Street, to what is now the BNSF Tacoma Rail Yard, located south and east of the intersection of East 21st Street and "D" Street. The Site includes the pipeline alignment and adjacent areas. The project area is shown on Figure 1.

BNSF entered into MTCA Agreed Order Number DE 04TCPSR-6034 with the State of Washington to: develop an Interim Action plan; implement an appropriate Interim Action; complete a Remedial Investigation/Feasibility Study for the site; and prepare a Cleanup Action Plan.

Excavation of contaminated soil to the maximum extent practicable was selected as the preferred remedial action. The proposed removal activities will focus on removing readily accessible contaminated soil and wood waste where Bunker-Range Petroleum Hydrocarbons (BRPH) are present at concentrations greater than the applicable criteria. The site has been divided into four remedial areas, as shown on Figures 2 through 8.

Sloped sidewalls will be used at each remedial excavation area. Interlocking sheet piles will be used at some of the remedial areas to maximize removal of BRPH-containing soil, to help control groundwater flow into the remedial areas and to protect existing structures adjacent to the remedial area. The sheet piling will be installed to depths as great as approximately 25 feet bgs.

“Clean” overburden soils may be removed and stockpiled for backfilling of the excavation. Additional imported soil will be needed to backfill the remedial areas after contaminated soil is removed.

Excavated contaminated soil will require temporary on-site stockpiling and dewatering due to the presence of shallow groundwater at the Site. Water collected during dewatering processes will be disposed of in the City of Tacoma sanitary sewer system and/or disposed off site at a facility permitted to dispose of oily water.

Restoration of each area will be required following completion of the remedial activities. Soil high in total organic content (TOC) could be placed as backfill in some portions of the excavations if contaminated soil that cannot be removed is exposed on the excavation face. The organic carbon in the soil will increase the sorptive capacity of the soil, thus reducing the potential for dissolved contaminants to migrate through the subsurface and recontaminate remedial areas. Impermeable liners and/or backfill (such as CDF) will also be used in the base and sidewalls of the excavations as needed to further discourage migration of contaminated groundwater through “clean” backfill placed in the remedial excavations following removal of BRPH-contaminated soil and wood waste.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The Site is located at the intersection of East 15th Street and “D” Street to the intersection of East 21st Street and “D” Street, as shown on Figures 1 and 2. Facilities in the site area include the BNSF Tacoma Rail Yard (transportation), Nichols Trucking (trucking), Tacoma Fixtures (fixture manufacturing on the Home Electric property), SuperValu (grocery distributor), Johnny’s Dock Restaurant and Marina, the former Pick’s Cove Marina and Martinac (boat building and repair). The Thea Foss Waterway is located west of “D” Street at distances ranging from approximately 175 feet to 370 feet west of the former alignment of the bunker oil pipeline.

Section 4, Township 21 North, Range 3 east.

13. Assessor Parcel Number:

The former pipeline transects or is adjacent to the following parcels: 8950001652, 6370000012, 6370000040, 6370000080, 5215000932, 8950001723 and 6370000090.

B. ENVIRONMENTAL ELEMENTS

1. **Earth**

a. General description of the site (circle one): **Flat**, *rolling, hilly, steep slopes, mountainous, other*

b. What is the steepest slope on the site (approximate percent slope)?

The site area is generally flat. The site area is used for industrial and commercial purposes.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

Soils at the site generally consist of 2 to 9 feet of sand with varying silt content underlain by a zone of mixed soil and wood waste fill. Native sand with varying amounts of silt exists below the wood waste fill.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

No.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

As much as approximately 52,000 cubic yards of granular fill material will be required to backfill the remedial excavations.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Some potential for erosion is associated with construction. Isolated areas will be temporarily exposed and disturbed during the remedial excavations. Erosion control measures will be employed to properly manage and control the site area and excavated materials during construction.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

The percent of impervious surface will not change as a result of this Project.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Control measures (i.e., silt fences, hay bales, holding tanks and containment structures) will be used as appropriate to minimize erosion during construction. The contractor will be required to prepare an erosion control plan and a spill prevention plan for use during the construction activities.

2. **Air**

a. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Short term - a minimal amount of emissions from the exhaust of heavy machinery used during the performance of the work and some generation of dust may occur. Long term - Emissions from vehicle traffic will not change as a result of the Project.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

The Project site is located in an industrial area. No sources of emissions that could affect this Project have been identified.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Normal methods associated with construction activities would be used. The contractor will be required to manage construction work in a manner that minimizes the generation of dust.

3. Water

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

The Thea Foss Waterway is located west of "D" Street at distances ranging from approximately 175 feet to 370 feet west of the Site.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

There will not be any work over or in the Thea Foss Waterway. Most of the remedial excavation areas are located at a distance greater than 200 feet of the Waterway. Remedial Area C is located approximately 175 feet to 240 feet east of the Thea Foss Waterway.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

None.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

The project site is not within currently designated flood plain, but is within the proposed 100-year flood plan for the Puyallup River. (Reference: City of Tacoma govME map web site - wspwit01.ci.tacoma.wa.us/govMe/Maps/Inter/MapGuideCS/MGMain.aspx)

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No.

b. Ground:

- 1) Will groundwater be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

The remedial excavations will require dewatering due to the presence of shallow groundwater at the Site. It has been estimated approximately 80,000 gallons of groundwater may be collected during dewatering processes, and this groundwater will be disposed of in the sanitary sewer or transported off site for treatment and disposal.

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

None.

c. Water runoff (including stormwater):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Stormwater runoff currently is collected by the City of Tacoma stormwater system and discharges to the Thea Foss Waterway via outfalls. Stormwater runoff will be directed around excavations during construction, but the discharge points for stormwater will not change during construction. There will be no permanent change to the existing stormwater collection system on the site and there will be no modifications to stormwater flow patterns and collection methods on the site in connection with this Project.

- 2) Could waste materials enter ground or surface waters? If so, generally describe.

Accidental spills associated with the construction activities in the Project area could occur, potentially releasing contaminated material to ground or surface water. Federal and state spill response measures are established in Commencement Bay to minimize the impacts of such occurrences. The contractor will be required to prepare and implement both an erosion control plan and a spill prevention, control and countermeasure plan for use during the construction activities.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

Control measures (i.e., silt fences, hay bales, holding tanks and containment structures) will be used as appropriate to minimize erosion during construction. The contractor will be required to prepare an erosion control plan and a spill prevention, control and countermeasure plan for use during the construction activities.

4. Plants

a. Check or circle types of vegetation found on the site:

- deciduous tree: alder, maple, aspen, other
- evergreen tree: fir, cedar, pine, other
- shrubs
- grass
- pasture
- crop or grain

- wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
- water plants: water lily, eelgrass, milfoil, other
- other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

Some vegetation is present adjacent to the WSDOT stormwater pond at Remedial Area A. Any vegetation disturbed during remedial activities will be replaced in kind.

c. List threatened or endangered species known to be on or near the site.

Three sensitive species have been sighted near the Project area (in the Tacoma Tide Flats) previous to 1980; Githopsis Specularioides (common blue cap), Montia diffusa nut (branching montia) and Woodwardia fimbrata sm. In Rees (giant chain fern) (Reference: Washington Department of Natural Resources; Washington Natural Heritage Program web site – www.dnr.wa.gov/nhp/refdesk/lists/plantsxco/pierce.html)

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Disturbed native vegetation in Area A will be replaced.

5. Animals

a. Circle any birds and animals which have been observed on or near the site or are known to be on or near the site:

birds: hawk, heron, eagle, songbirds, other: *Seagull, Canada Geese and other bird species common to the Port Industrial Area.*

mammals: deer, bear, elk, beaver, other: *species common to Commencement Bay.*

fish: bass, salmon, trout, herring, shellfish, other: *species common to Commencement Bay.*

b. List any threatened or endangered species known to be on or near the site.

On May 24, 1999, the National Marine Fisheries Service (NMFS) formalized a listing of the Puget Sound Chinook salmon as threatened under the Endangered Species Act (ESA). On May 11, 2007, the NMFS formally listed the Puget Sound Steelhead as threatened under the ESA. These species occurs in the Puyallup River drainage and Commencement Bay.

The US Fish and Wildlife Service (USFWS) announced the listing of Coastal-Puget Sound bull trout (Salvelinus confluentus) as threatened on October 28, 1999. Bull trout occur in the Puyallup River drainage and Commencement Bay.

Other listed species that could occur in Commencement Bay include the humpback whale (Megaptera novaeangliae), Stellar sea lion (Eumetopia jubatus), leatherback sea turtle (Dermochelys coriacea) and bald eagle (Haliaeetus leucocephalus). This list of species is based on information provided by NMFS and USFWS.

The Project will not impact existing habitat nor will it have an adverse impact on water quality or fish life. No work will occur within the water.

c. Is the site part of a migration route? If so, explain.

The Tacoma Tidelands area is part of the Pacific flyway for migrating birds. The Project construction will occur on upland areas adjacent to the Thea Foss Waterway.

d. Proposed measures to preserve or enhance wildlife, if any:

None planned.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

None.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

None.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

Some construction equipment will use fuels that inherently have the potential to be an environmental health hazard if released. The contractor will be required to prepare a spill prevention, control and countermeasure plan for use during construction activities.

Construction activities will generate petroleum-contaminated soil, woodwaste and groundwater. These materials will be contained within controlled areas at the site and during transport to permitted disposal facilities to prevent potential human or ecological exposures or other impacts to human health and/or the environment.

1) Describe special emergency services that might be required.

The potential exists for an accident to occur during construction that would require medical attention and emergency services. Routine fire protection, police and medical aid provided by and/or within the City of Tacoma would be available. Contractors will establish and follow appropriate health and safety plans. No special emergency service needs are anticipated.

2) Proposed measures to reduce or control environmental health hazards, if any:

All applicable state and federal safety guidelines will be adhered to in the implementation of the proposed Project. Contractors will create appropriate health and safety plans during construction. The need for additional measures is not anticipated.

b. Noise

- 1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

The site is located in an industrial area. Noise is not expected to affect the Project.

- 2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Noise will be generated during construction (excavation, backfilling and sheet piling installation) of the remedial areas. However, this noise will be consistent with typical earthwork and sheet pile installation activities and will occur in an industrial area. Construction activities are expected to occur during daylight hours from 7 a.m. to 7 p.m. This project will not affect long-term noise levels.

- 3) Proposed measures to reduce or control noise impacts, if any:

None proposed.

8. Land and Shoreline Use

- a. What is the current use of the site and adjacent properties?

The site area is primarily used for commercial and industrial purposes.

- b. Has the site been used for agriculture? If so, describe.

No.

- c. Describe any structures on the site.

Aboveground structures in the site area include the Nichols Trucking buildings, Tacoma Fixtures building, SuperValu buildings, Johnny's Dock Restaurant and Marina, the former Pick's Cove Marina and Martinac building.

- d. Will any structures be demolished? If so, what?

No.

- e. What is the current zoning classification of the site?

The Project site is zoned "S8" Shoreline and "M2" Heavy Industrial.

- f. What is the current comprehensive plan designation of the site?

High Intensity.

- g. If applicable, what is the current shoreline master program designation of the site?

The "S-8" Shoreline District is designated Urban Environment

- h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

No.

- i. Approximately how many people would reside or work in the completed project?

None.

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any:

None proposed.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The Project is compatible and consistent with the surrounding uses and with current zoning and comprehensive plan designations for this site.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

Not applicable.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

Not applicable.

c. Proposed measures to reduce or control housing impacts, if any:

Not applicable.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

Not Applicable.

b. What views in the immediate vicinity would be altered or obstructed?

None.

c. Proposed measures to reduce or control aesthetic impacts, if any:

None.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Not applicable.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No.

c. What existing off-site sources of light or glare may affect your proposal?

None.

d. Proposed measures to reduce or control light and glare impacts, if any:

None proposed.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

Recreational fishing and boating occur in Thea Foss Waterway; however, there are no recreational opportunities in the immediate vicinity of the proposed Project.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

None needed.

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

None known.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

None known.

c. Proposed measures to reduce or control impacts, if any:

None.

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

The project site is accessible from East "D" Street. East 18th and East 19th Streets bisect the project site and are accessible from East "D" Street.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

Bus stops at "D" Street and 19th Street are serviced by Pierce Transit Routes 60 and 65.

c. How many parking spaces would the completed project have? How many would the project eliminate?

None proposed.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

No.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

Vehicle trips will not change as a result of this Project.

g. Proposed measures to reduce or control transportation impacts, if any:

None proposed.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

No.

b. Proposed measures to reduce or control direct impacts on public services, if any.

None proposed.

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

Utilities services will not be affected or changed as a result of this Project.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

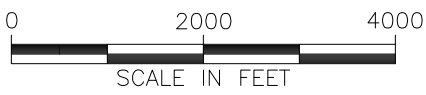
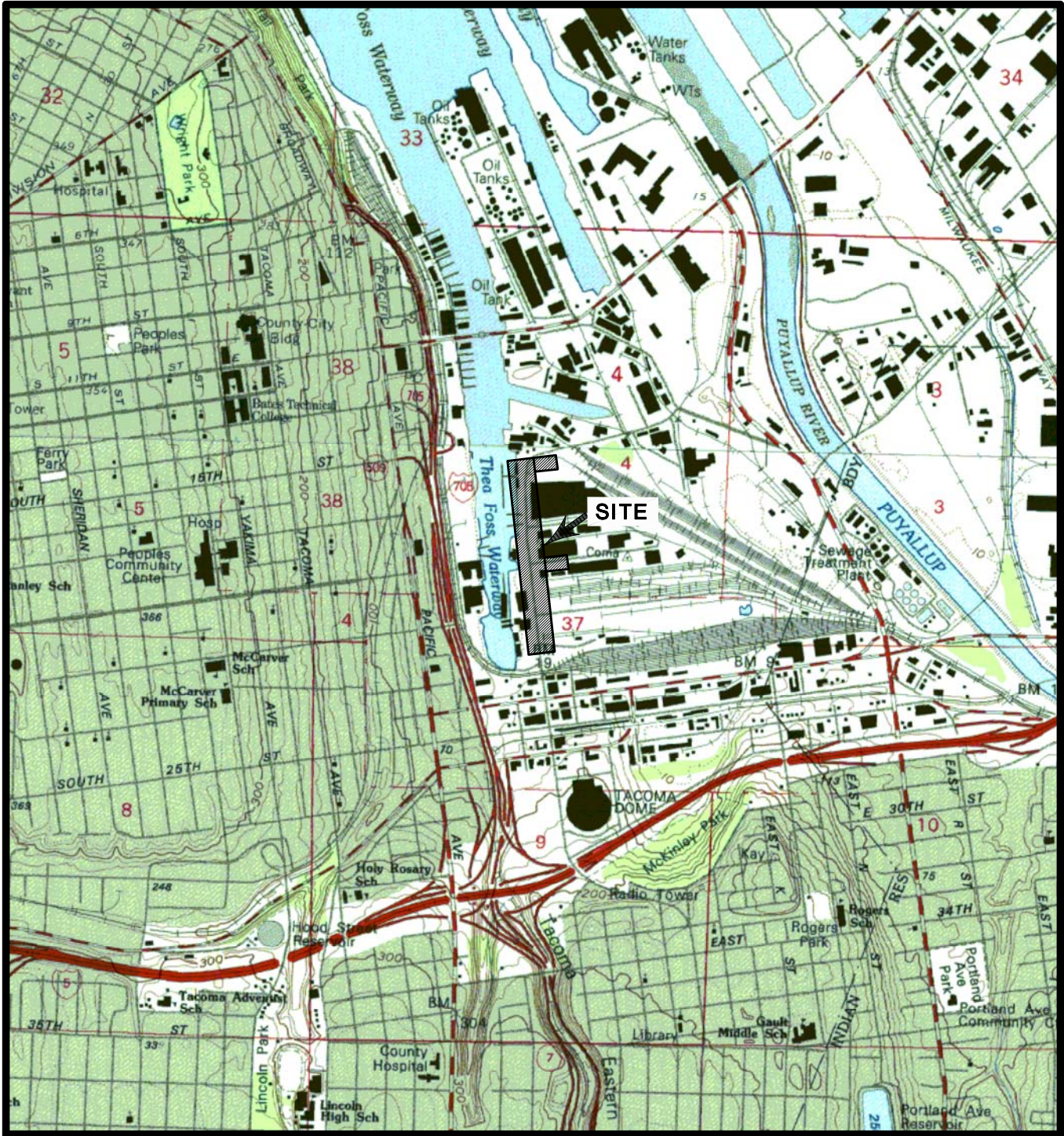
Signature: 

Date Submitted: 5/22/08

01/10/08

JCD:SLF:SCY

TACO\0\0506141\02\CAD\SEPA\050614102_SEPA_FIG-1.dwg



DRAFT



Notes: 1. The locations of all features shown are approximate.

2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document.

Reference: Sure Maps! Raster Maps- USGS based quadrangles.



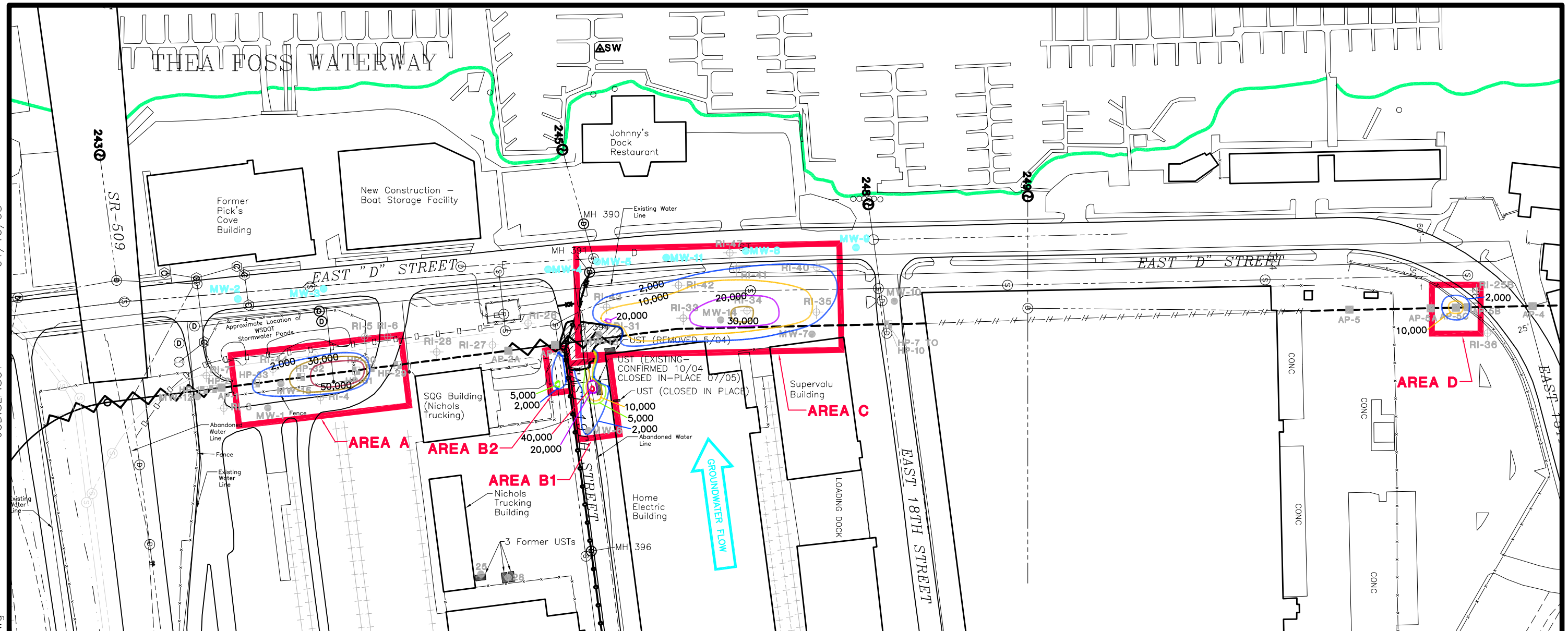
VICINITY MAP

FIGURE 1

01/10/08

JCD:SLF:SCY

TACO\0\0506141\02\CAD\SEPA\050614102_SEPA_FIG-2.dwg



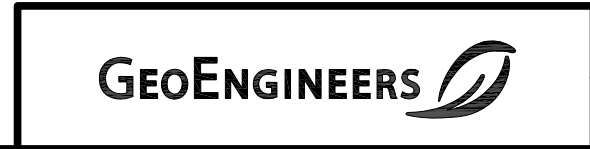
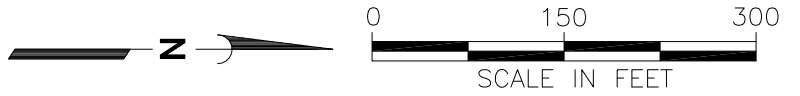
EXPLANATION:

- | | | | | | | | |
|----------------|--|--------------|---|--|---|----------------------------|-------------------------------|
| MW-1 ● | MONITORING WELL | SWA ▲ | STILLING WELL LOCATION | | THEA FOSS SHORELINE | BRPH CONCENTRATIONS | |
| MW-5 ● | MONITORING WELL LOCATION AT THE CONDITIONAL POINTS OF COMPLIANCE | | STORM WATER OUTFALL | | LIMITS OF INTERIM REMEDIAL EXCAVATION | | 2,000 mg/kg |
| RI-42 ⊕ | 2004 REMEDIAL INVESTIGATION BORING | | SEWER MANHOLE | | APPROXIMATE LIMITS OF PROPOSED REMEDIAL AREAS | | 5,000 mg/kg |
| 25 ● | SOIL SAMPLE BY OTHERS | | CATCH BASIN | | | | 10,000 mg/kg |
| HP-31 ■ | 2002 BORING | | STORM WATER MANHOLE | | | | 20,000 mg/kg |
| AP-1 ■ | 2002 PIPELINE ACCESS PIT | | HISTORIC PIPELINE ALIGNMENT | | | | 30,000 mg/kg |
| | | | PIPELINE REMOVED | | | | 40,000 mg/kg |
| | | | PIPELINE GROUTED IN PLACE | | | | 50,000 mg/kg |
| | | | SLIP-LINED STORM DRAIN | | | | mg/kg MILLIGRAMS PER KILOGRAM |
| | | | STORM DRAIN HAS BEEN REPLACED | | | | |
| | | | ABANDONED 15-INCH PLASTIC SANITARY SEWER PIPE | | | | |

Notes: 1. The locations of all features shown are approximate.
 2. This drawing is for information purposes and is intended to assist in showing features discussed in an attached document.

Reference: Drawing created from AutoCAD file, "E.D st-oil line-b.DWG", provided by City of Tacoma.

DRAFT

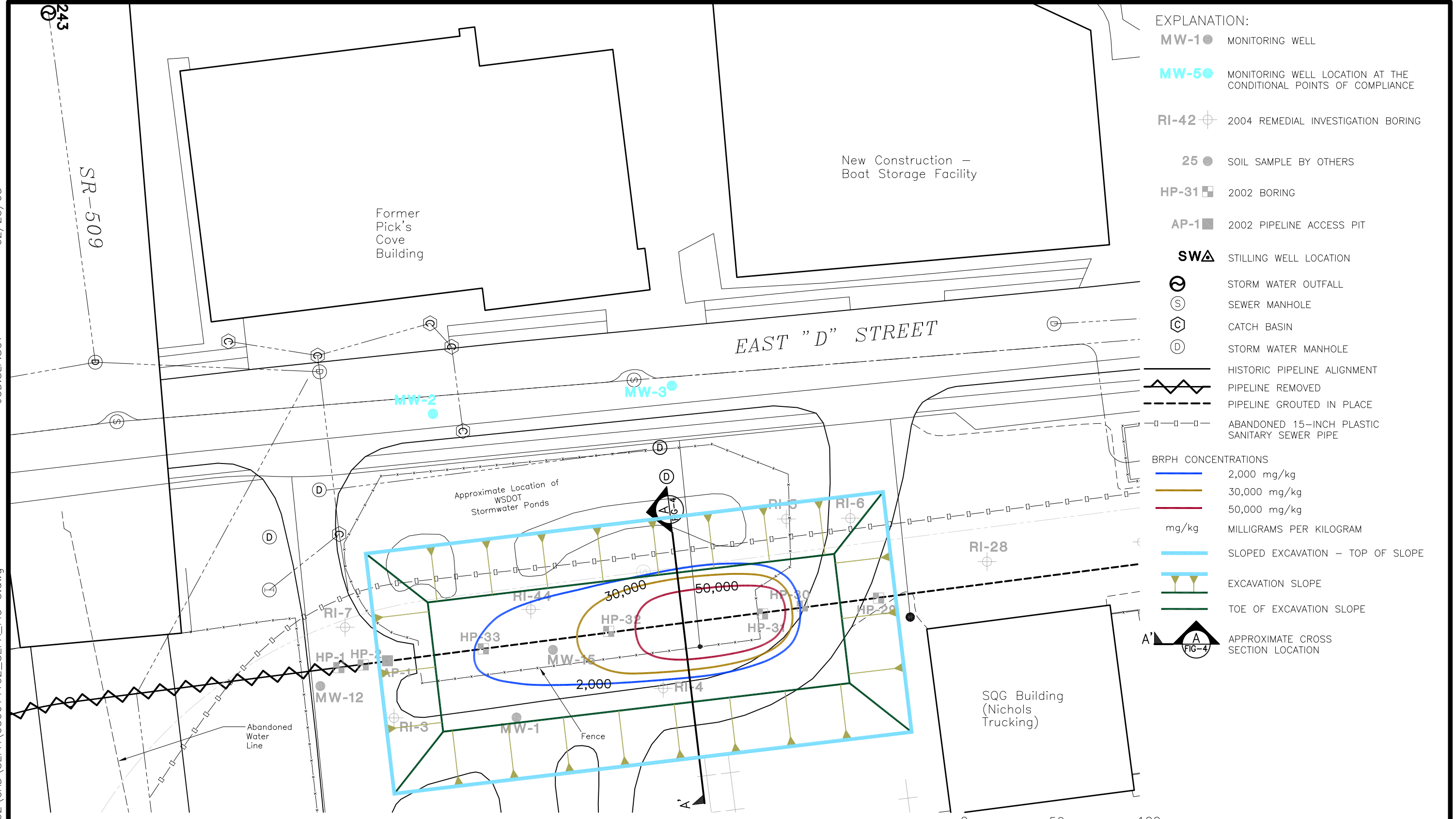


REMEDIAL AREAS
FIGURE 2

02/25/08

JCD:SLF:SCY

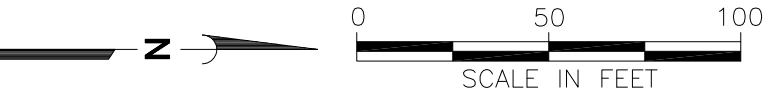
TACO\0\0506141\02\CAD\SEPA\050614102_SEPA_FIG-3.dwg



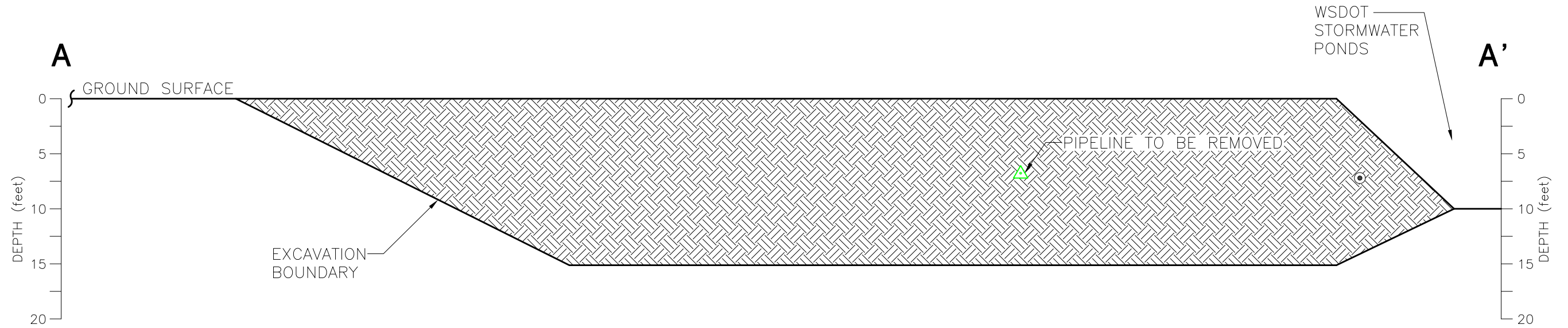
Notes: 1. The locations of all features shown are approximate.
 2. This drawing is for information purposes and is intended to assist in showing features discussed in an attached document.





Reference: Drawing created from AutoCAD file, "E.D st-oil line-b.DWG", provided by City of Tacoma.

DRAFT



	AREA A EXCAVATION/DISPOSAL
	FIGURE 3



- EXPLANATION:
-  6" BNSF OIL PIPELINE (GROUTED IN PLACE)
 -  COMPACTED BACKFILL
 -  PAVEMENT
 -  SEWER LINE - UNKNOWN DEPTH



DRAFT

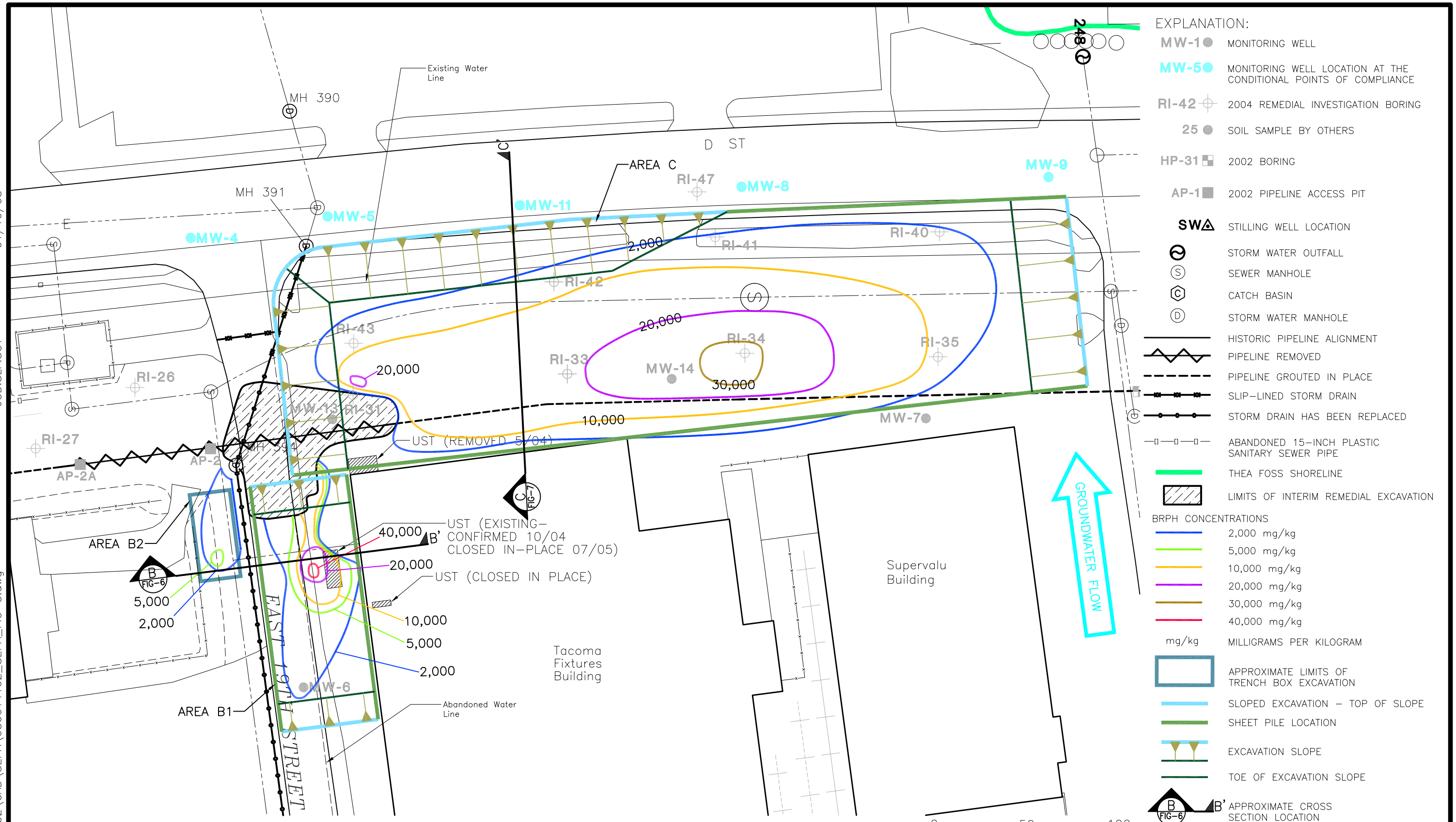
Notes: 1. The locations of all features shown are approximate.
 2. This figure is for informational purposes only. It is intended to assist in the identification of features discussed in a related document. Data were compiled from sources as listed in this figure. The data sources do not guarantee these data are accurate or complete. There may have been updates to the data since the publication of this figure. This figure is a copy of a master document. The master hard copy is stored by GeoEngineers, Inc. and will serve as the official document of record.

Reference: Drawing created from sketch provided by GeoEngineers' personnel.

	AREA A CROSS SECTION A-A'
	FIGURE 4

JCD:SLF:SCY 01/10/08

TACO\0\0506141\02\CAD\SEPA\050614102_SEPA_FIG-5.dwg



- EXPLANATION:**
- MW-1 ● MONITORING WELL
 - MW-5 ● MONITORING WELL LOCATION AT THE CONDITIONAL POINTS OF COMPLIANCE
 - RI-42 ⊕ 2004 REMEDIAL INVESTIGATION BORING
 - 25 ● SOIL SAMPLE BY OTHERS
 - HP-31 ⊕ 2002 BORING
 - AP-1 ⊕ 2002 PIPELINE ACCESS PIT
 - SWA ⊕ STILLING WELL LOCATION
 - ⊕ STORM WATER OUTFALL
 - ⊕ SEWER MANHOLE
 - ⊕ CATCH BASIN
 - ⊕ STORM WATER MANHOLE
 - HISTORIC PIPELINE ALIGNMENT
 - PIPELINE REMOVED
 - PIPELINE GROUTED IN PLACE
 - SLIP-LINED STORM DRAIN
 - STORM DRAIN HAS BEEN REPLACED
 - ABANDONED 15-INCH PLASTIC SANITARY SEWER PIPE
 - THEA FOSS SHORELINE
 - ▨ LIMITS OF INTERIM REMEDIAL EXCAVATION
- BRPH CONCENTRATIONS**
- 2,000 mg/kg
 - 5,000 mg/kg
 - 10,000 mg/kg
 - 20,000 mg/kg
 - 30,000 mg/kg
 - 40,000 mg/kg
- mg/kg MILLIGRAMS PER KILOGRAM
- ▭ APPROXIMATE LIMITS OF TRENCH BOX EXCAVATION
 - SLOPED EXCAVATION - TOP OF SLOPE
 - SHEET PILE LOCATION
 - EXCAVATION SLOPE
 - TOE OF EXCAVATION SLOPE
- ⊕ APPROXIMATE CROSS SECTION LOCATION

Notes: 1. The locations of all features shown are approximate.
 2. This drawing is for information purposes and is intended to assist in showing features discussed in an attached document.

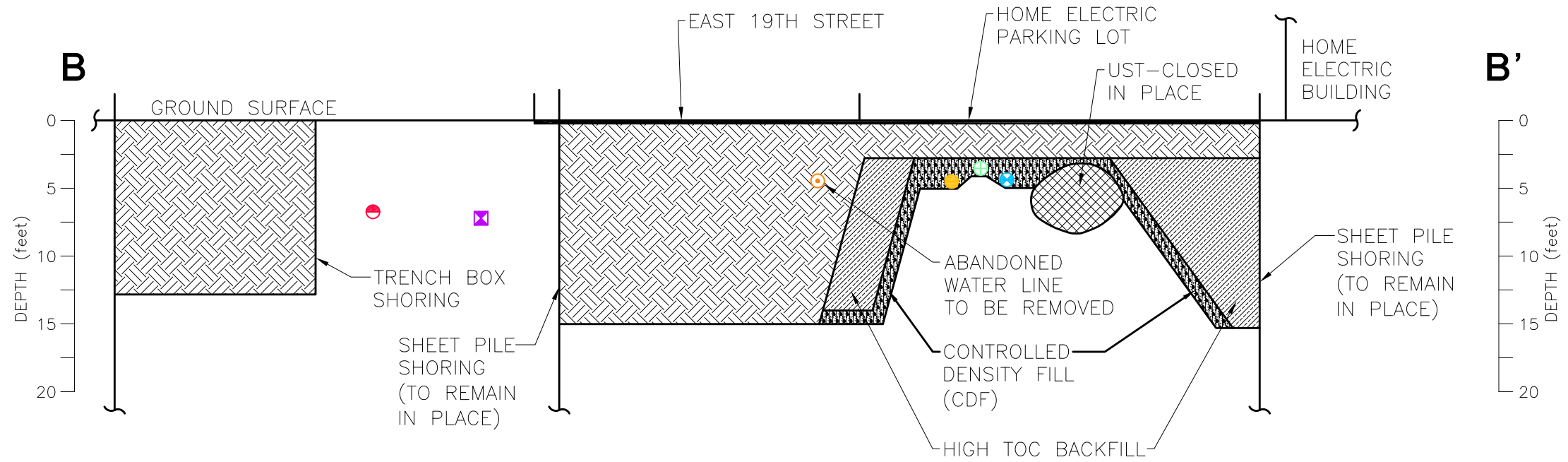
Reference: Drawing created from AutoCAD file, "E.D st-oil line-b.DWG", provided by City of Tacoma.

DRAFT



**AREAS B1, B2, AND C
EXCAVATION/DISPOSAL**

FIGURE 5



EXPLANATION:

- 8" DUCTILE IRON WATER LINE
 - ⊙ 8" CAST IRON ABANDONED WATER LINE
 - ⊕ 2" GAS LINE
 - ⊠ 16" STORM LINE
 - 12" SEWER LINE
 - ⊕ ABANDONED WATER LINE
 - ▨ BACKFILL HIGH IN TOC
 - PAVEMENT
 - ▩ COMPACTED BACKFILL
- TOC TOTAL ORGANIC CARBON



DRAFT

Notes: 1. The locations of all features shown are approximate.
 2. This figure is for informational purposes only. It is intended to assist in the identification of features discussed in a related document. Data were compiled from sources as listed in this figure. The data sources do not guarantee these data are accurate or complete. There may have been updates to the data since the publication of this figure. This figure is a copy of a master document. The master hard copy is stored by GeoEngineers, Inc. and will serve as the official document of record.

Reference: Drawing created from sketch provided by GeoEngineers' personnel.



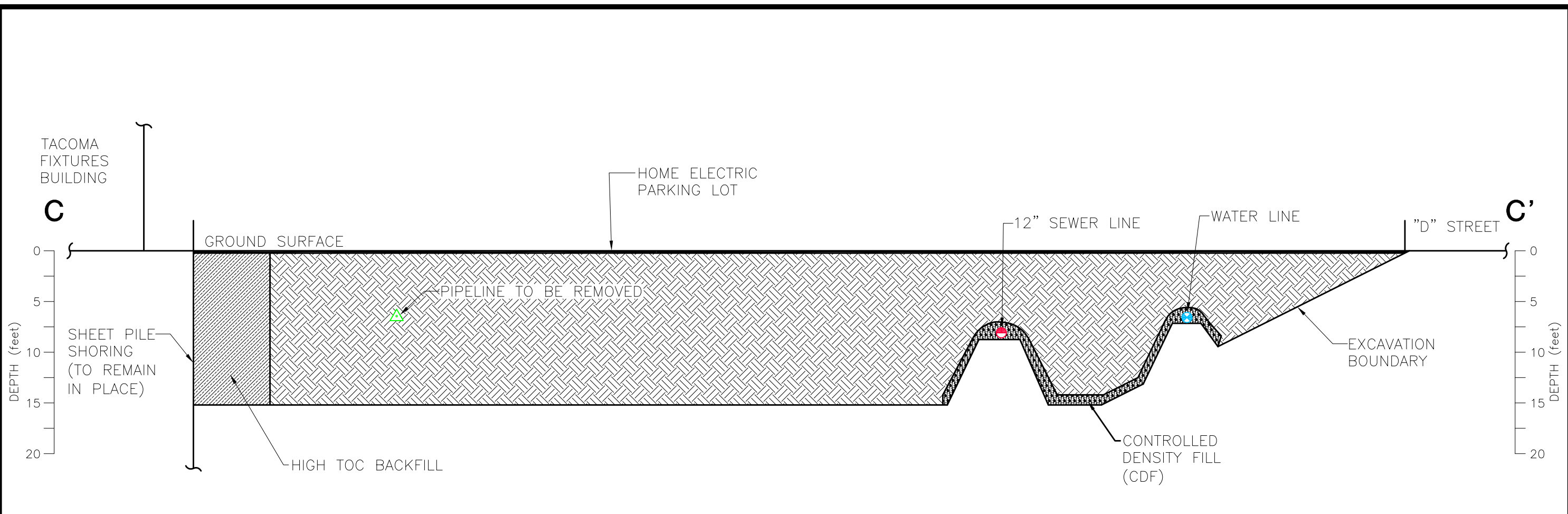
AREA B CROSS SECTION B-B'

FIGURE 6

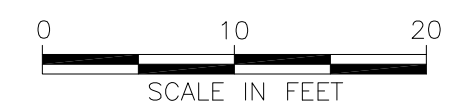
01/10/08

JCD:SLF:SCY

TACO\0\0506141\02\CAD\SEPA\050614102_SEPA_FIG-4_6_7.dwg



- EXPLANATION:
- 6" BNSF OIL PIPELINE (GROUTED IN PLACE)
 - 12" SEWER LINE
 - ABANDONED WATER LINE
 - BACKFILL HIGH IN TOC
 - PAVEMENT
 - COMPACTED BACKFILL
 - TOC TOTAL ORGANIC CARBON



DRAFT

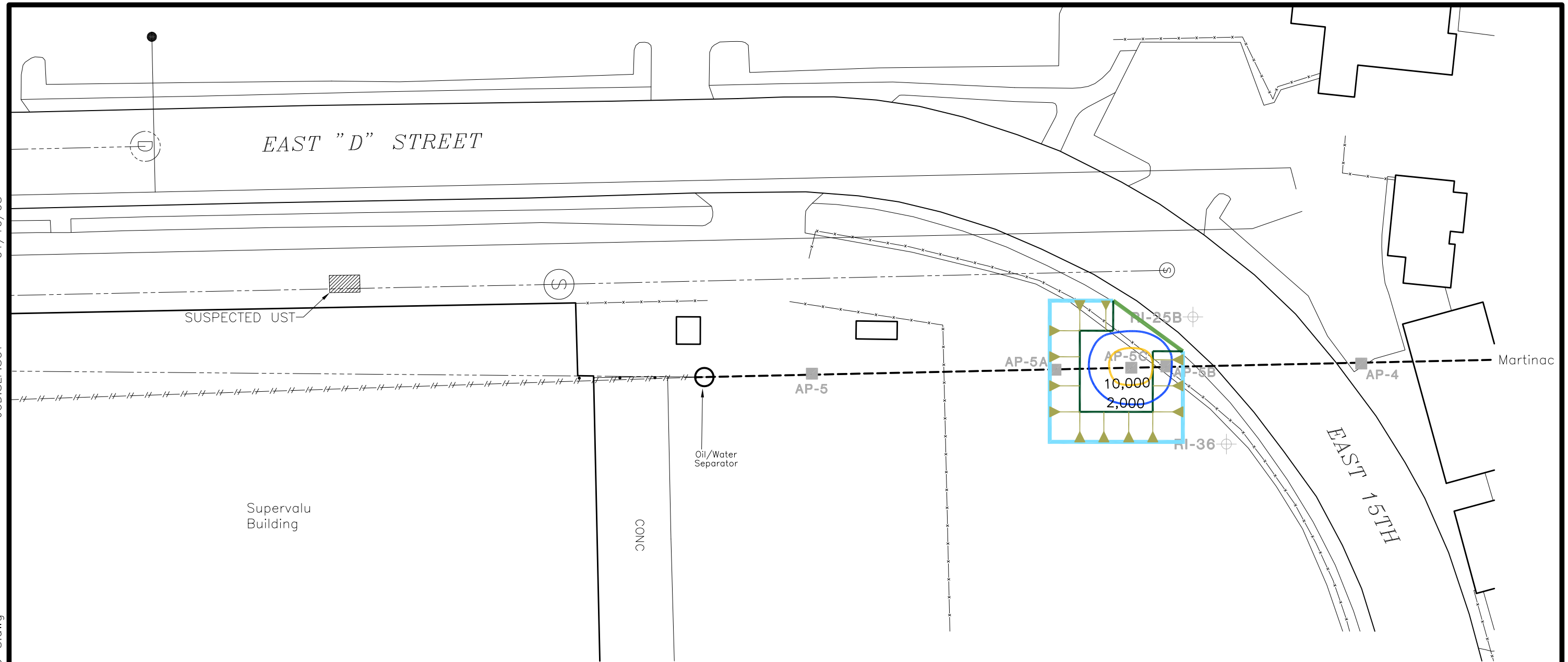
Notes: 1. The locations of all features shown are approximate.
 2. This figure is for informational purposes only. It is intended to assist in the identification of features discussed in a related document. Data were compiled from sources as listed in this figure. The data sources do not guarantee these data are accurate or complete. There may have been updates to the data since the publication of this figure. This figure is a copy of a master document. The master hard copy is stored by GeoEngineers, Inc. and will serve as the official document of record.
 Reference: Drawing created from sketch provided by GeoEngineers' personnel.

	AREA C CROSS SECTION C-C'
FIGURE 7	








01/10/08







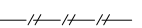
JCD:SLF:SCY

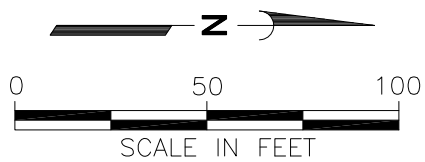
TACO\0\0506141\02\CAD\SEPA\050614102_SEPA_FIG-8.dwg



EXPLANATION:

-  APPROXIMATE LIMITS OF SLOPED EXCAVATIONS
 -  SLOPED EXCAVATION - TOP OF SLOPE
 -  SHEET PILE LOCATION
 -  EXCAVATION SLOPE
 -  TOE OF EXCAVATION SLOPE
- BRPH CONCENTRATIONS
-  2,000 mg/kg
 -  10,000 mg/kg
- mg/kg MILLIGRAMS PER KILOGRAM

-  2004 REMEDIAL INVESTIGATION BORING
-  2002 PIPELINE ACCESS PIT
-  STORM WATER OUTFALL
-  SEWER MANHOLE
-  STORM WATER MANHOLE
-  PIPELINE GROUTED IN PLACE
-  PIPELINE PRESENCE UNKNOWN



Notes: 1. The locations of all features shown are approximate.

2. This drawing is for information purposes and is intended to assist in showing features discussed in an attached document.

Reference: Drawing created from AutoCAD file, E.D st-oil line-b.DWG", provided by Port of Tacoma.



AREA D
EXCAVATION/DISPOSAL

FIGURE 8

DRAFT