

RIVERSIDE HVOC SITE IN SITU GROUNDWATER TREATMENT
CITY OF BOTHELL

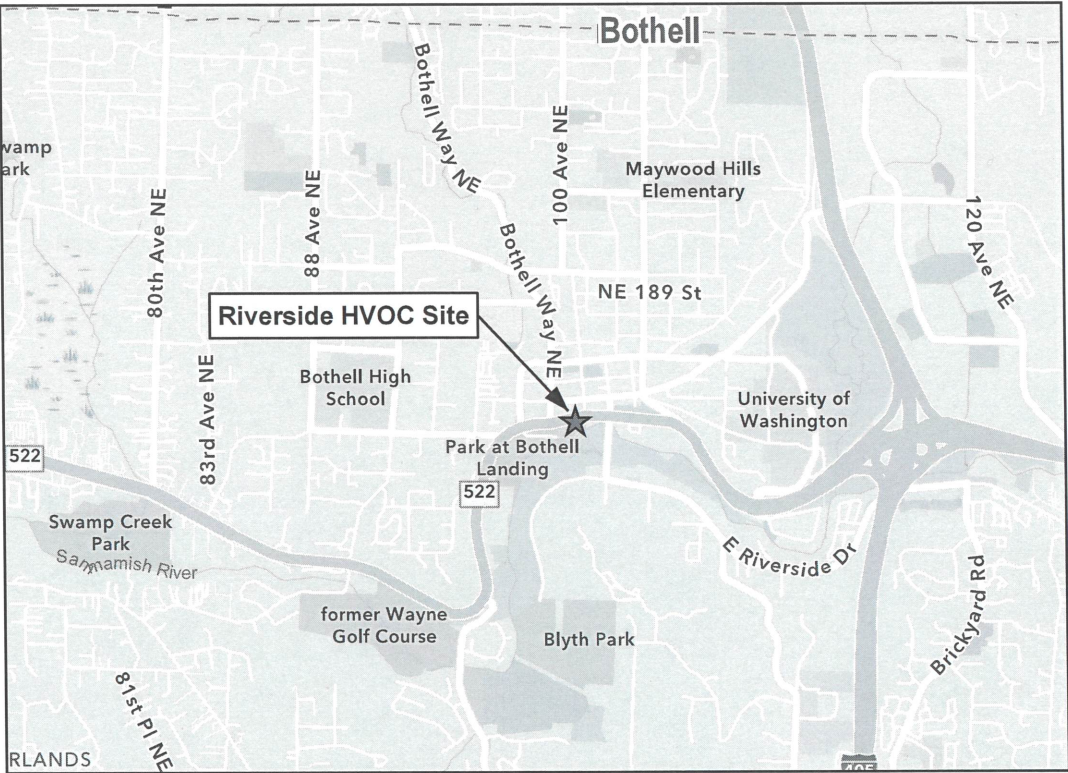
PROJECT NO. 0019.05.T007.ST1

SHEET INDEX

SHEET TITLE NO.	DRAWING NO.	SHEET NO.
COVER SHEET	C-101	1
EXAMPLE TRAFFIC CONTROL PLAN	C-102	2
UTILITY AND WELL PROTECTION AND DECOMMISSIONING PLAN	C-103	3
TEMPORARY EROSION AND SEDIMENT CONTROL (TESC) PLAN	C-104	4
HVOC SOURCE AREA AND UPGRADIENT PLUME INJECTION PLAN	C-105	5
WESTERN PLUME AREA INJECTION PLAN	C-106	6
DOWNGRADIENT PLUME AREA INJECTION PLAN	C-107	7
MONITORING WELL INSTALLATION PLAN	C-108	8

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VICINITY MAP

CITY OFFICIALS:

MAYOR
MASON THOMPSON

DEPUTY MAYOR
JENNE ALDERKS

COUNCIL MEMBERS
PRASAD ANGULURI
CARSTON CURD
BRITTANY MILES
AMANDA DODD
RAMI AL-KABRA

CITY MANAGER
KYLE STANNERT

PUBLIC WORKS DIRECTOR
ERIN LEONHART

APPROVED FOR CONSTRUCTION

 05/14/26
STEVE MORIKAWA CITY ENGINEER

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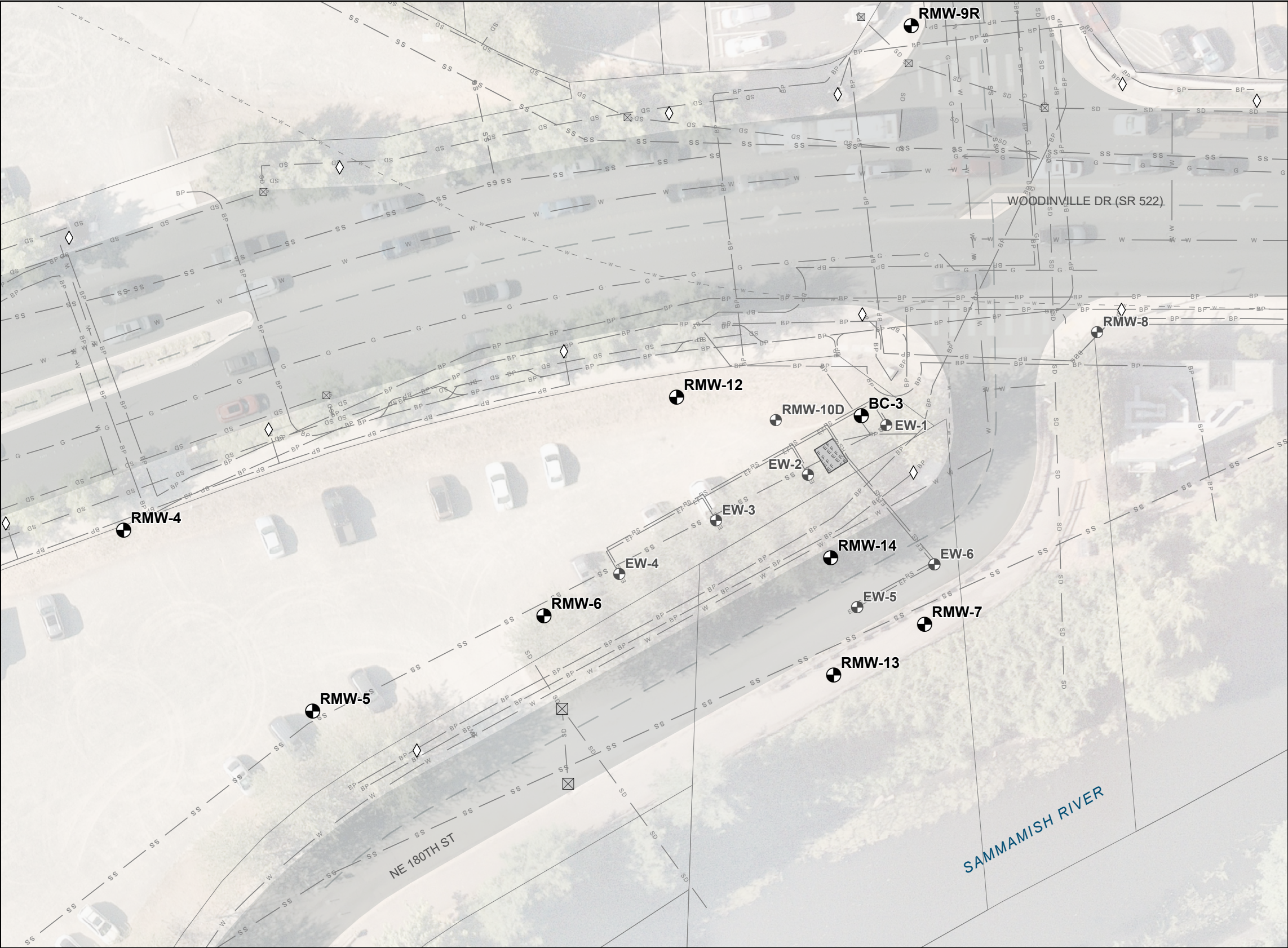
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CITY OF BOTHELL
RIVERSIDE HVOC SITE IN SITU
GROUNDWATER TREATMENT

COVER SHEET

DRAWN:	PROJECT NO:
DESIGN:	SCALE:
CHECKED:	DATE:
DRAWING NO.	C-101
SHEET NO.	1 OF 8



WELLS

- EXISTING MONITORING WELL - PROTECT
- WELL TO BE DECOMMISSIONED

UTILITIES - PROTECT

- SANITARY SEWER LINE
- STORMWATER LINE
- WATER LINE
- GAS LINE
- BURIED POWER
- INSTALL CATCH BASIN FILTER INSERT
- CATCH BASIN
- STREET LIGHT

PREVIOUSLY DECOMMISSIONED UTILITIES

- ABANDONED WATER LINE

GROUNDWATER REMEDIATION SYSTEM

- BURIED POWER
- EFFLUENT PIPE
- REMEDIATION SYSTEM SHED
- ROAD BOUNDARY AND CENTERLINE
- PARCEL BOUNDARY

- NOTES:
- LOCATIONS OF UTILITIES AND STRUCTURES ARE APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT UTILITIES AND STRUCTURES.
 - CONTRACTOR SHALL REMOVE EXTRACTION PUMPS, ALONG WITH ASSOCIATED DOWN-WELL POWER AND EFFLUENT PIPE WITHIN THE RESPECTIVE VAULTS OF EW-1 THROUGH EW-6.
 - CAP THE DISCONNECTED WATER EFFLUENT PIPE AT THE SIDEWALL USING A COMPRESSION CAP AND PVC GLUE.
 - NO ELECTRICAL JUNCTION BOX IS LOCATED IN THE WELL VAULTS, CAP BURIED POWER LINES WITHIN VAULT USING WATERPROOF WIRE NUTS AND GROUTING. SEAL CONDUIT CONTAINING ELECTRICAL WIRES AT INTERIOR WALL OF VAULT USING HYDRAULIC CEMENT.
 - EXTRACTION WELL VAULTS CONTAINING DECOMMISSIONED WELLS WILL BE CLOSED AND LEFT IN PLACE UNTIL REMOVED BY OTHERS.
 - REMAINING GROUNDWATER REMEDIATION COMPONENTS OUTSIDE OF WELL VAULTS TO INCLUDE PIPING, CONDUIT, SHED STRUCTURE, AND ASSOCIATED POWER SUPPLY TO SHED TO BE DECOMMISSIONED AND REMOVED BY OTHERS
 - EXTRACTION PUMPS ARE STUCK INSIDE EXTRACTION WELLS EW-5 AND EW-6 THESE WELLS SHALL BE OVER-DRILLED AND REMOVED ACCORDING TO WAC 173-160-460.
 - EXISTING WELL LOCATIONS WERE SURVEYED BY TRUE NORTH LAND SURVEYING IN 2024.
 - PARCEL DATA OBTAINED FROM CITY OF BOTHELL GEOSPATIAL INFORMATION SYSTEM SERVICES SECTION, 2023.
 - ORTHOIMAGERY OBTAINED FROM NEARMAP, 2023.

ABBREVIATION:
HVOC = HALOGENATED VOLATILE ORGANIC COMPOUND

SCALE IN FEET

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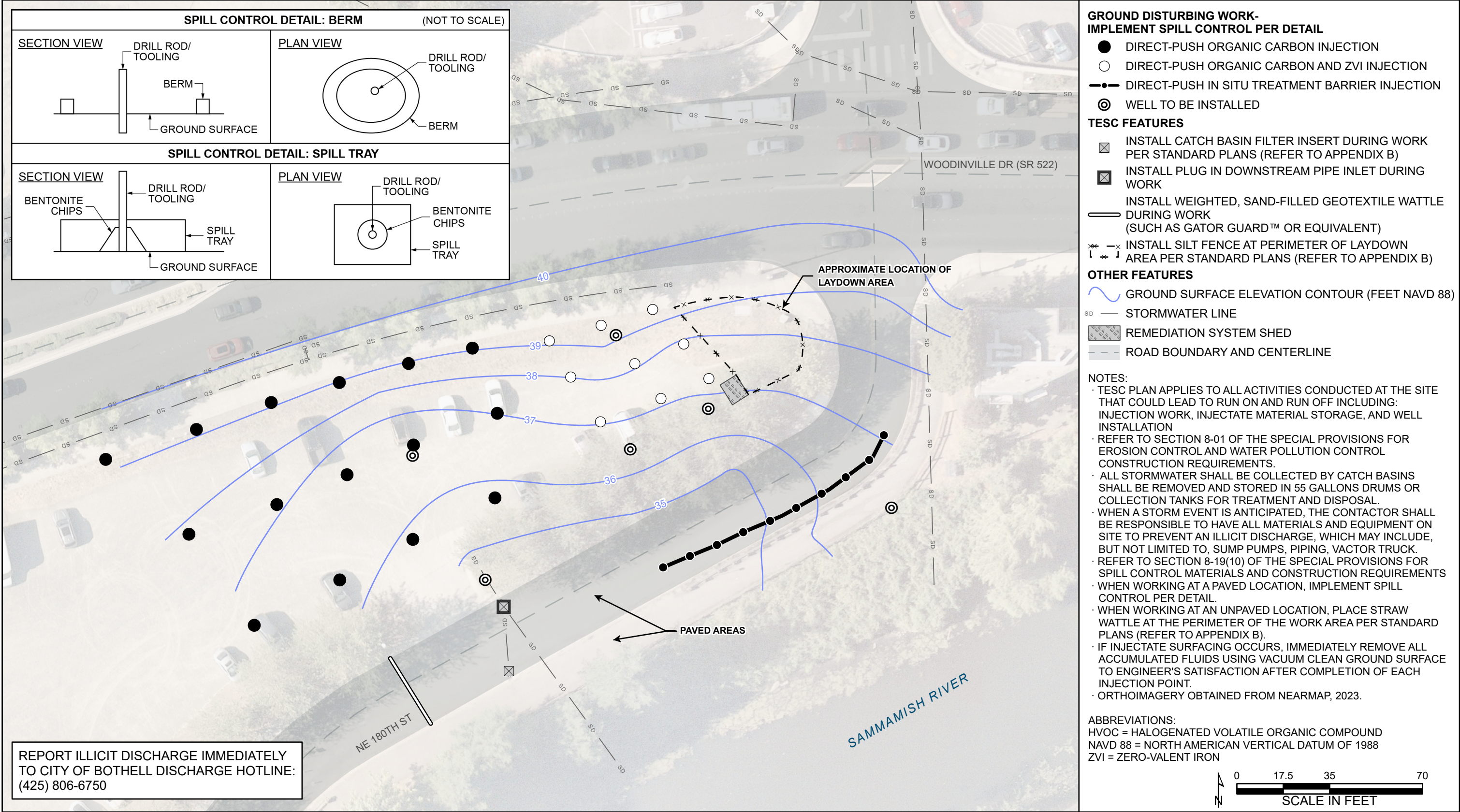
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City of Bothell

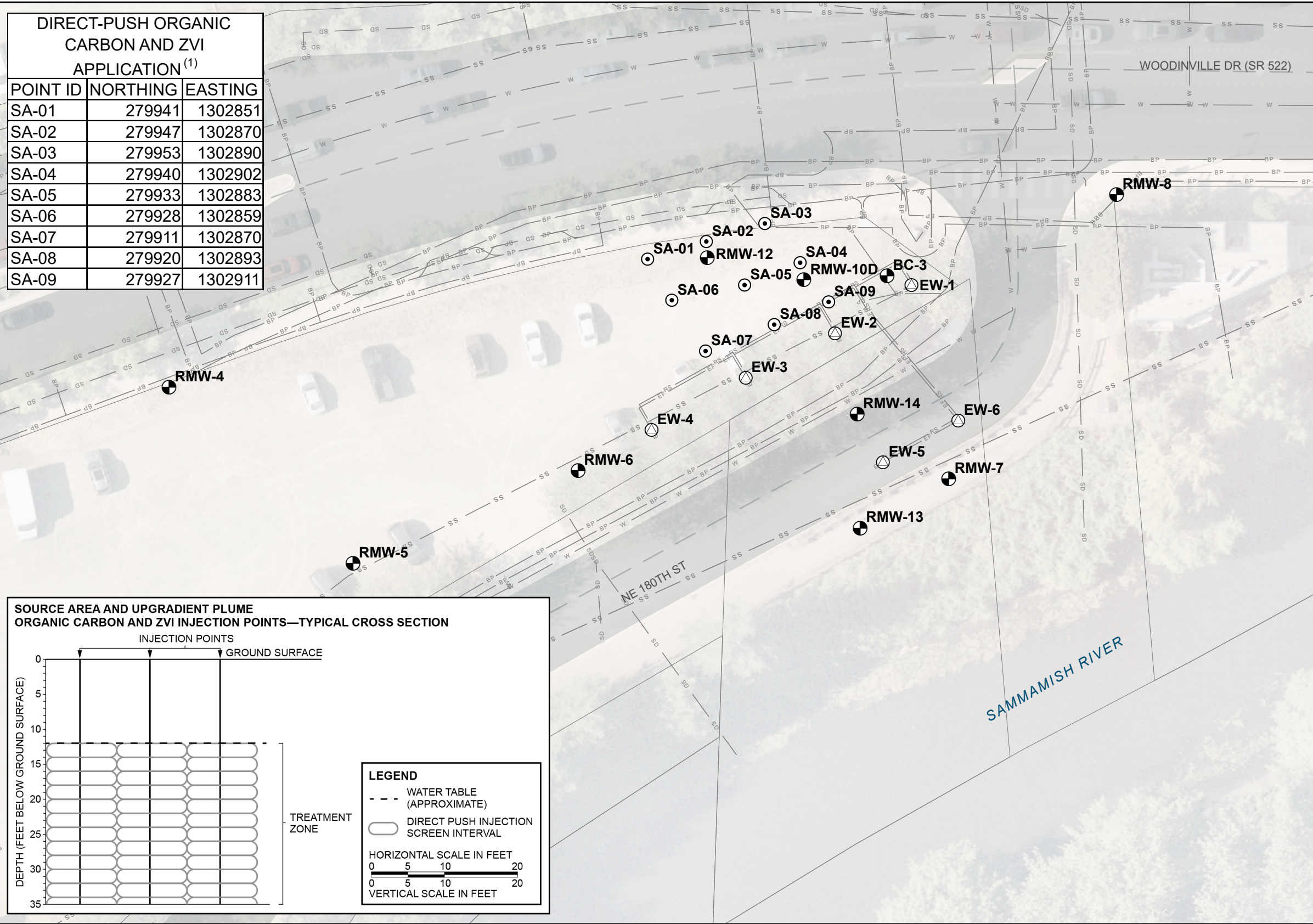
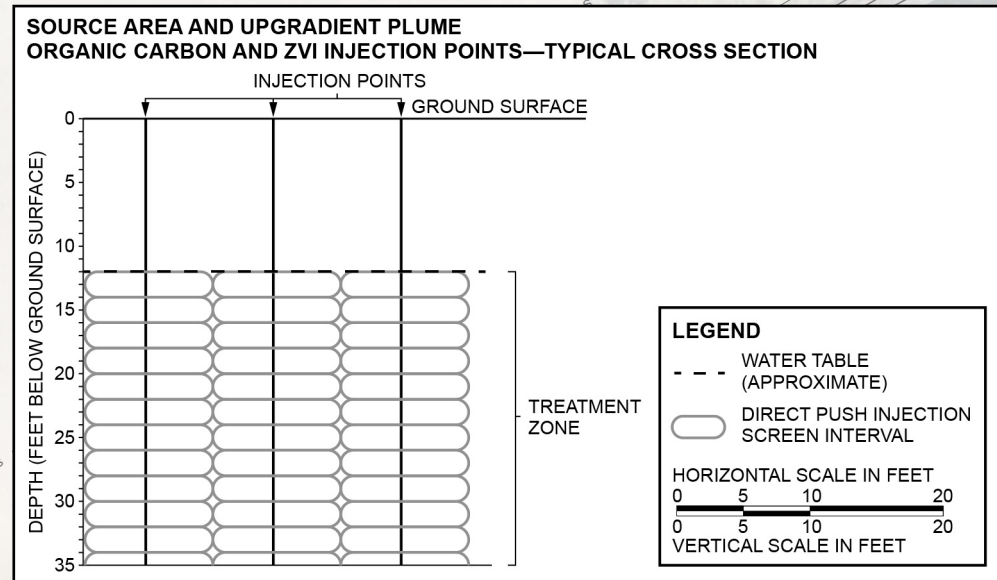
CITY OF BOTHELL
RIVERSIDE HVOC SITE IN SITU
GROUNDWATER TREATMENT

**UTILITY AND WELL PROTECTION
AND DECOMMISSIONING PLAN**

DRAWN:	PROJECT NO:
DESIGN:	SCALE:
CHECKED:	DATE:
DRAWING NO. C-103	
SHEET NO. 3 OF 8	



DIRECT-PUSH ORGANIC CARBON AND ZVI APPLICATION ⁽¹⁾		
POINT ID	NORTHING	EASTING
SA-01	279941	1302851
SA-02	279947	1302870
SA-03	279953	1302890
SA-04	279940	1302902
SA-05	279933	1302883
SA-06	279928	1302859
SA-07	279911	1302870
SA-08	279920	1302893
SA-09	279927	1302911

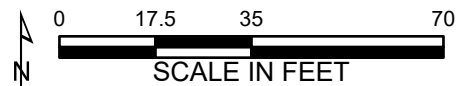


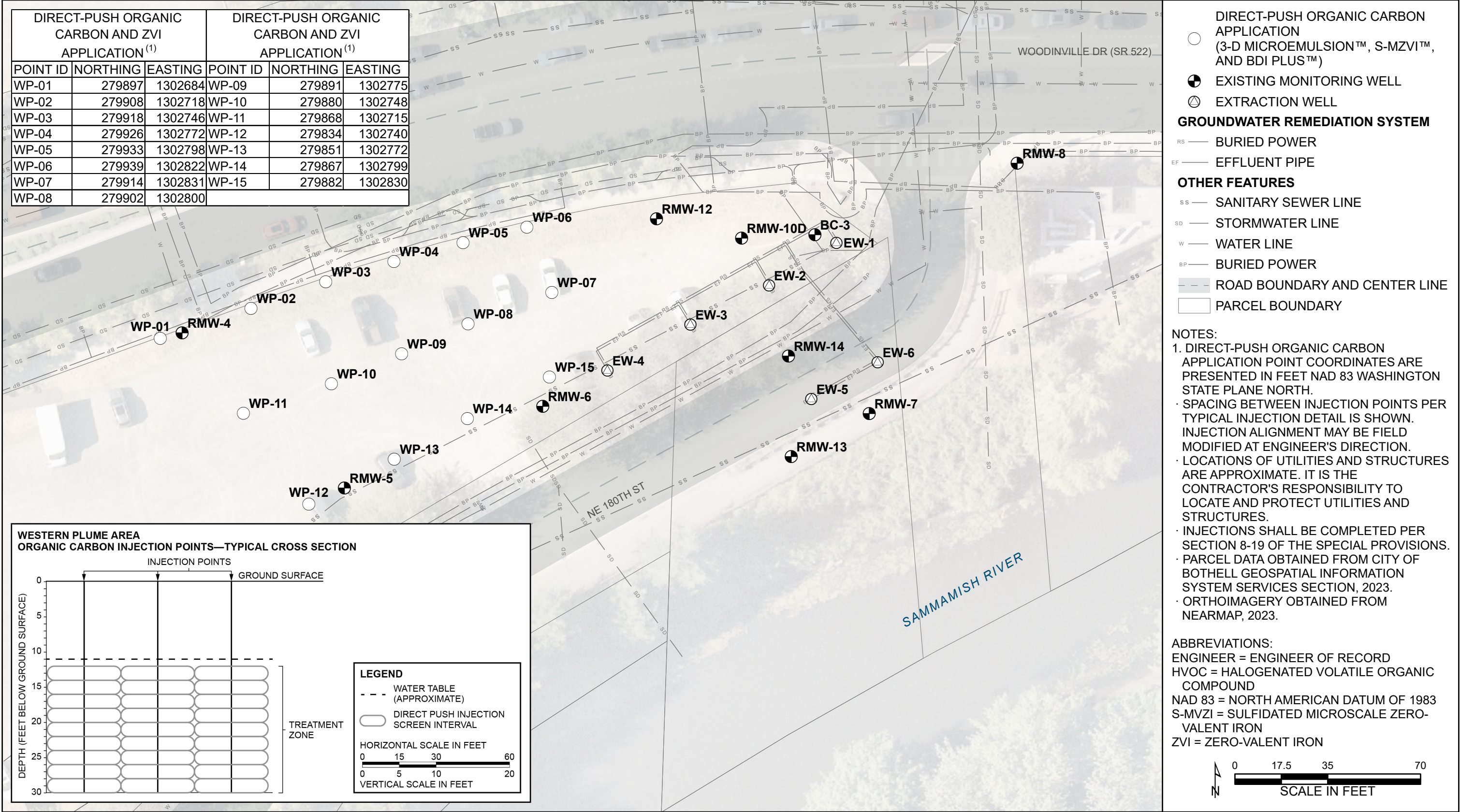
- LEGEND**
-  DIRECT-PUSH ORGANIC CARBON AND ZVI APPLICATION
(3-D MICROEMULSION™, S-MZVI™, AND BDI PLUS™)
-  EXISTING MONITORING WELL
-  EXTRACTION WELL
- GROUNDWATER REMEDIATION SYSTEM**
- RS — BURIED POWER
- EF — EFFLUENT PIPE
- OTHER FEATURES**
- SS — SANITARY SEWER LINE
- SD — STORMWATER LINE
- W — WATER LINE
- BP — BURIED POWER
- — ROAD BOUNDARY AND CENTERLINE
-  PARCEL BOUNDARY

NOTES:

1. DIRECT-PUSH ORGANIC CARBON AND ZVI APPLICATION POINT COORDINATES ARE PRESENTED IN FEET NAD 83 WASHINGTON STATE PLANE NORTH.
- SPACING BETWEEN INJECTION POINTS PER TYPICAL INJECTION DETAIL IS SHOWN. INJECTION ALIGNMENT MAY BE FIELD MODIFIED AT ENGINEER'S DIRECTION.
- LOCATIONS OF UTILITIES AND STRUCTURES ARE APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT UTILITIES AND STRUCTURES.
- INJECTIONS SHALL BE COMPLETED PER SECTION 8-19 OF THE SPECIAL PROVISIONS.
- PARCEL DATA OBTAINED FROM CITY OF BOTHELL GEOSPATIAL INFORMATION SYSTEM SERVICES SECTION, 2023.
- ORTHOIMAGERY OBTAINED FROM NEARMAP, 2023.

ABBREVIATIONS:
ENGINEER = ENGINEER OF RECORD
HVOC = HALOGENATED VOLATILE ORGANIC
COMPOUND
NAD 83 = NORTH AMERICAN DATUM OF 1983
S-MZVI = SULFIDATED MICROSCALE ZERO-
VALENT IRON
ZVI = ZERO-VALENT IRON





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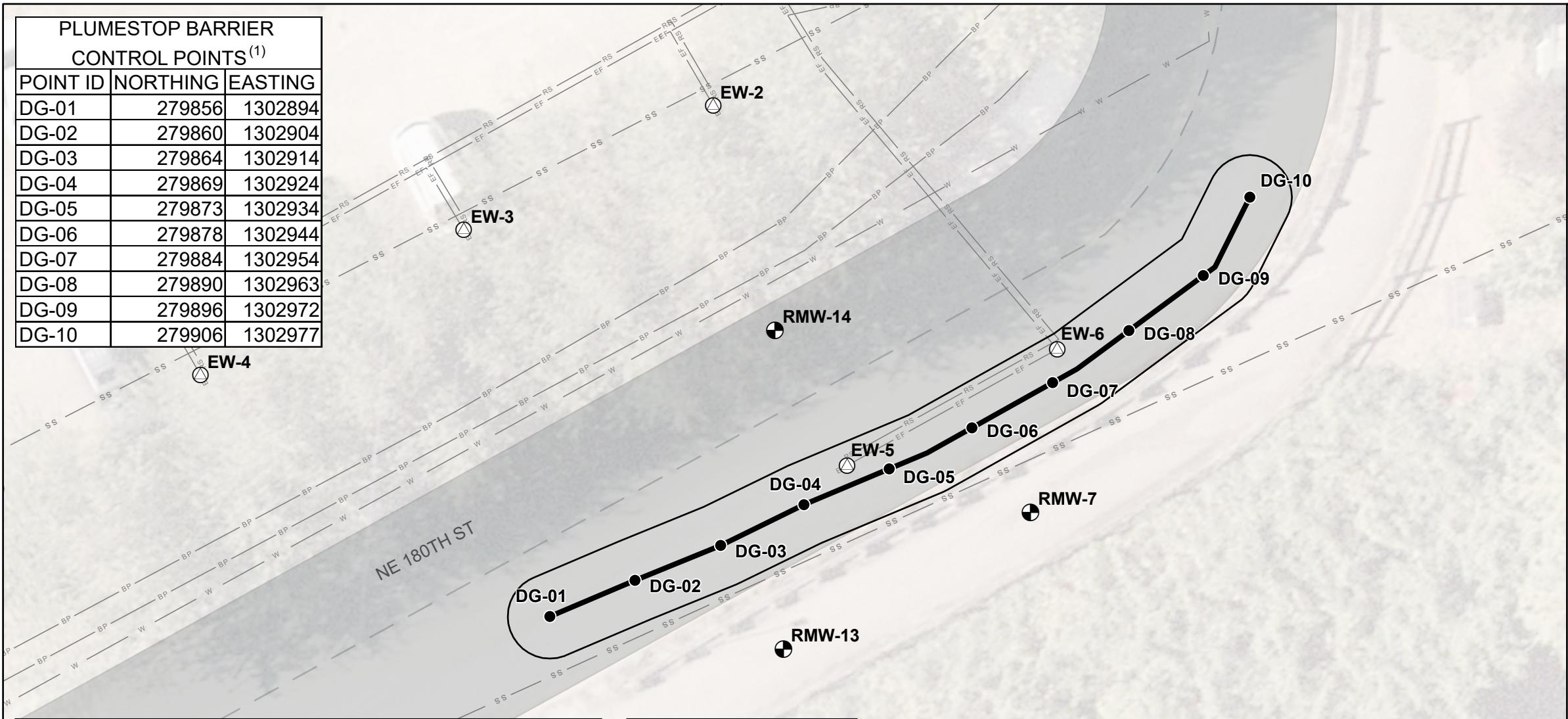
City of Bothell

CITY OF BOTHELL
RIVERSIDE HVOC SITE IN SITU
GROUNDWATER TREATMENT

**WESTERN PLUME
AREA INJECTION PLAN**

DRAWN:	PROJECT NO:
DESIGN:	SCALE:
CHECKED:	DATE:
DRAWING NO. C-106	
SHEET NO. 6 OF 8	

PLUMESTOP BARRIER CONTROL POINTS ⁽¹⁾		
POINT ID	NORTHING	EASTING
DG-01	279856	1302894
DG-02	279860	1302904
DG-03	279864	1302914
DG-04	279869	1302924
DG-05	279873	1302934
DG-06	279878	1302944
DG-07	279884	1302954
DG-08	279890	1302963
DG-09	279896	1302972
DG-10	279906	1302977



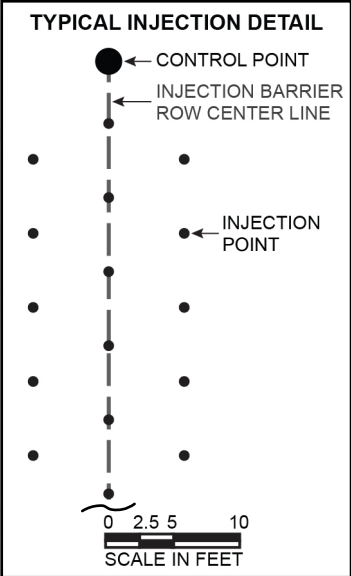
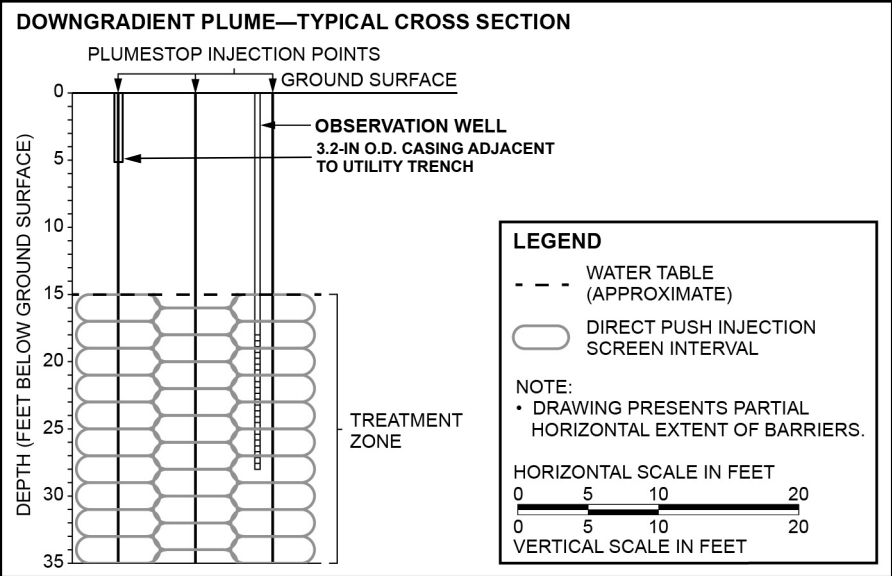
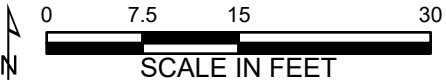
- EXISTING MONITORING WELL
- EXTRACTION WELL
- PLUMESTOP IN SITU TREATMENT BARRIER WITH ORGANIC CARBON AND ZVI (PLUMESTOP™, AQUIFIX™, S-MZVI™, AND BDI PLUS™)
- GROUNDWATER REMEDIATION SYSTEM
 - BURIED POWER
 - EFFLUENT PIPE
- OTHER FEATURES
 - SANITARY SEWER LINE
 - WATER LINE
 - BURIED POWER
 - ROAD BOUNDARY AND CENTER LINE

NOTES:

- PLUMESTOP INJECTION APPLICATION POINT COORDINATES ARE PRESENTED IN FEET NAD 83 WASHINGTON STATE PLANE NORTH.
- SPACING BETWEEN INJECTION POINTS PER TYPICAL INJECTION DETAIL IS 3.5 LATERAL FEET. INJECTION ALIGNMENT MAY BE FIELD MODIFIED AT ENGINEER'S DIRECTION.
- WHEN INJECTING WITHIN 3 FEET OF EXTRACTION SYSTEM TRENCH IN ROADWAY, ADVANCE 3.25-IN O.D. OUTER CASING FROM 0-5 FEET BELOW GROUND SURFACE.
- LOCATIONS OF UTILITIES AND STRUCTURES ARE APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT UTILITIES AND STRUCTURES.
- INJECTIONS SHALL BE COMPLETED PER SECTION 8-19 OF THE SPECIAL PROVISIONS.
- ORTHOIMAGERY OBTAINED FROM NEARMAP, 2023.

ABBREVIATIONS:

ENGINEER = ENGINEER OF RECORD
HVOC = HALOGENATED VOLATILE ORGANIC COMPOUND
NAD 83 = NORTH AMERICAN DATUM OF 1983
S-MZVI = SULFIDATED MICROSCALE ZERO-VALENT IRON
ZVI = ZERO-VALENT IRON



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RIVERSIDE HVOC SITE IN SITU
GROUNDWATER TREATMENT

DOWNGRADIENT PLUME AREA
INJECTION PLAN

DRAWN:	PROJECT NO:
DESIGN:	SCALE:
CHECKED:	DATE:
DRAWING NO.	C-107
SHEET NO.	7 OF 8

