

January 14, 2021
File No. 07216156.00

Ms. Tamara Welty
Washington Department of Ecology – Toxics Cleanup Program
Northwest Regional Office
3190 160th Avenue Southeast
Bellevue, WA 98008

Subject: Construction Summary for Repairs to the Landfill Gas Migration Control System at the Eastgate Landfill, Bellevue, Washington

Dear Ms.: Welty

The following provides a summary of construction activities for repair work to the landfill gas (LFG) migration control system at the former Eastgate Landfill. The City of Bellevue owns the Boeing Airfield Park located at 2997 160th Street SE, Bellevue, Washington. The park includes the former Eastgate Landfill which has a LFG migration control systems that has been in operation since the landfill closed in 1986. The City operates and maintains the environmental controls at the landfill subject to the 2008 Environmental Covenant.

This construction summary report is provided as a condition of the Work Plan approved by the Washington State Department of Ecology (Ecology). The repair work was implemented in compliance with the Environmental Protection Plan approved by Public Health - Seattle King County (July 1, 2020) and the Work Plan approved by Ecology (July 14, 2020). The repair work was supervised by John Richards of SCS Engineers (a professional engineer licensed in the State of Washington).

Repairs to the LFG migration control system were necessary to restore vacuum to a segment of the perimeter gas conveyance header pipe (and associated gas extraction wells) on the south and southeastern portion of the landfill, adjacent to the road (SE 30th Place). Differential settlement caused depressions or bellies in the LFG pipe, which resulted in LFG condensate accumulating in the bellies, restricting flow of LFG, and causing a loss of vacuum to the affected gas extraction wells.

Repair of the LFG system in the area involved replacement of the existing LFG pipe with new pipe in a new alignment and grade. The pipe that was replaced is located between the condensate drain Trap CT-6R and the cleanout access port CO-3 as shown on the attached drawings. A new condensate pump station (CT-5R2) was installed at the new low point created with the new pipe alignment and grades to replace the existing condensate drain trap CT-5R.

The construction activities commenced on July 20th, 2020 with exploratory excavation at select locations. The excavation, placement of pipe, and backfill activities occurred the week of July 27, 2020. The condensate pumps were installed in condensate trap CT-6R and new condensate pump station CT-5R2 during the week of September 14, 2020. Surface restoration with seeding and mulching occurred the week of October 5, 2020.



The following activities were implemented for the repair to the LFG migration control system:

1. Secured permit authorizations, including notification to proper parties: Public Health - Seattle King County, Advanta, Boeing, Microsoft, Department of Ecology, and the City of Bellevue.
2. Secured the work area with the installation of temporary fence to encompass the entire work area and prevent unauthorized entry.
3. Installed temporary erosion and sediment control (TESC) features. This included installation of silt fence around surface water features and installation of filter fabric on catch basin inlet grates.
4. Surveyed the alignment and grade for new pipe and components.
5. Located the existing utilities in the vicinity of the proposed work area.
6. Excavated trenches (1.5 feet to 6.0 feet deep) for inspection, repair and installation of new pipe.
 - a. Removed top layer of the final cover system soils and set aside the material for backfill. Excavated the pipe trenches to the required depth and grade.
 - b. In anticipation of encountering waste, provisions were made to manage waste encountered during excavation of the trenches. These provisions included the following:
 - i. Waste encountered would be removed and deposited in a 20- yard container located onsite.
 - ii. Waste would be sampled and analyzed for disposal as MSW, if needed.
 - iii. Waste would be sent to the proper disposal facility.
 - iv. The waste would be managed to prevent generation of leachate by direct loading into a container and covering with a tarp during periods of precipitation.
7. The following was noted during construction activities:
 - a. Waste was not encountered during the excavation process.
 - b. Groundwater was not encountered during the excavation process.
 - c. Methane gas was not detected in the work zone during construction activities.
8. Installed, connected, relocated, or decommissioned pipes, ports, and sumps, including the following:
 - a. 6-inch Dia. HDPE pipe along new alignment and grade (from CT-6R to CO-3).
 - b. 4-inch Dia. HDPE pipe along new alignment and grade (for gas extraction wells EW-4R, EW-3R, EW-2R, EW-18, EW-17, and EW-16).
 - c. 2-inch Dia. HDPE pipe for condensate discharge (in common trench with gas and air pipe).
 - d. 2-inch Dia. HDPE pipe for air supply (in common trench with gas and condensate pipe).
 - e. Decommissioned the abandoned HDPE pipe by cutting pipe and installing plugs with caps.
 - f. Relocated the cleanout access ports to a new high point on pipe grade.
 - g. Installed new condensate pump station (CT-5R2).
 - h. Connected the new pipe to existing condensate drain trap on the west end (CT-6R) and existing cleanout access port on the east end (CO-3).

Ms. Tamara Welty

January 14, 2021

Page 3

- i. Installed a 2-inch Dia. HDPE pipe for condensate discharge from CT-6R and CT-5R2 to nearby sewer manhole (south of EW-17).
- j. Connected to existing sewer manhole R11-61B.
9. Backfilled pipe trenches and compacted in lifts.
10. Imported general fill for new high points near cleanout access ports CO-3 and CO-5R, as needed.
11. Restored area to grade, broadcast the City of Bellevue standard seed mix over the disturbed areas, and covered with straw mulch.
12. Installed two pumps at condensate drain trap CT-6R and new condensate pump station CT-5R2, including:
 - a. Air supply valve trains.
 - b. Condensate discharge valve trains.
 - c. Low flow pneumatic pumps and associated hoses and fittings.

Construction activities were periodically inspected by Ted Massart and John Richards of SCS Engineers. A final inspection of the piping system was performed prior to backfill to confirm pipe depths and grades. Construction photos of these inspection activities are provided in the record drawings. Based on the construction inspection performed by SCS Engineers, the repairs to the LFG migration control system were performed in general accordance with the drawings and project requirements.

As you review the enclosed information, please contact Stephen Harquail at (503) 867-2369 or Ted Massart (425) 864-2146 if you have questions or comments.

Sincerely,



Stephen Harquail
Project Manager
SCS Field Services



Ted Massart
Sr. Project Engineer
SCS Engineers



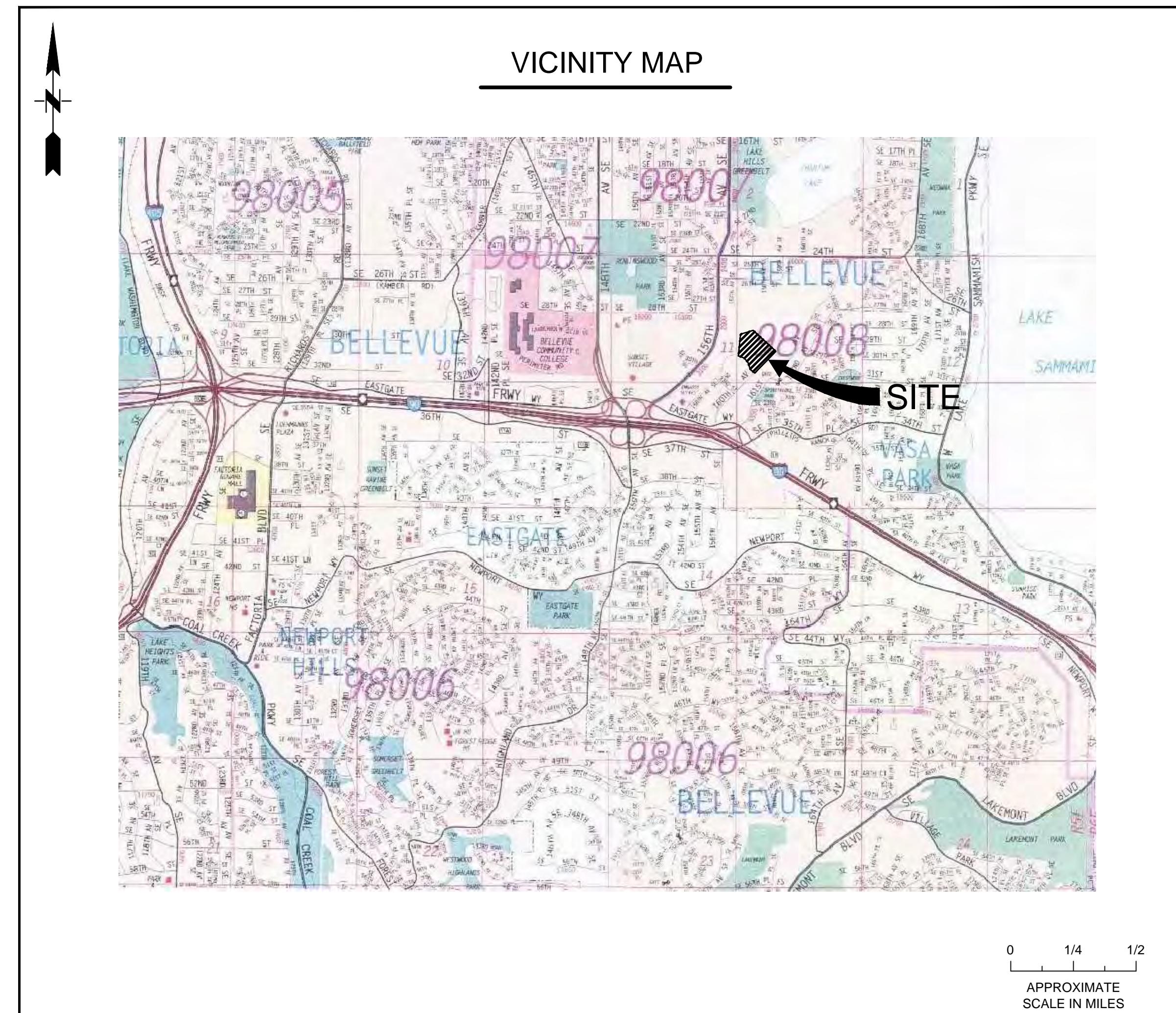
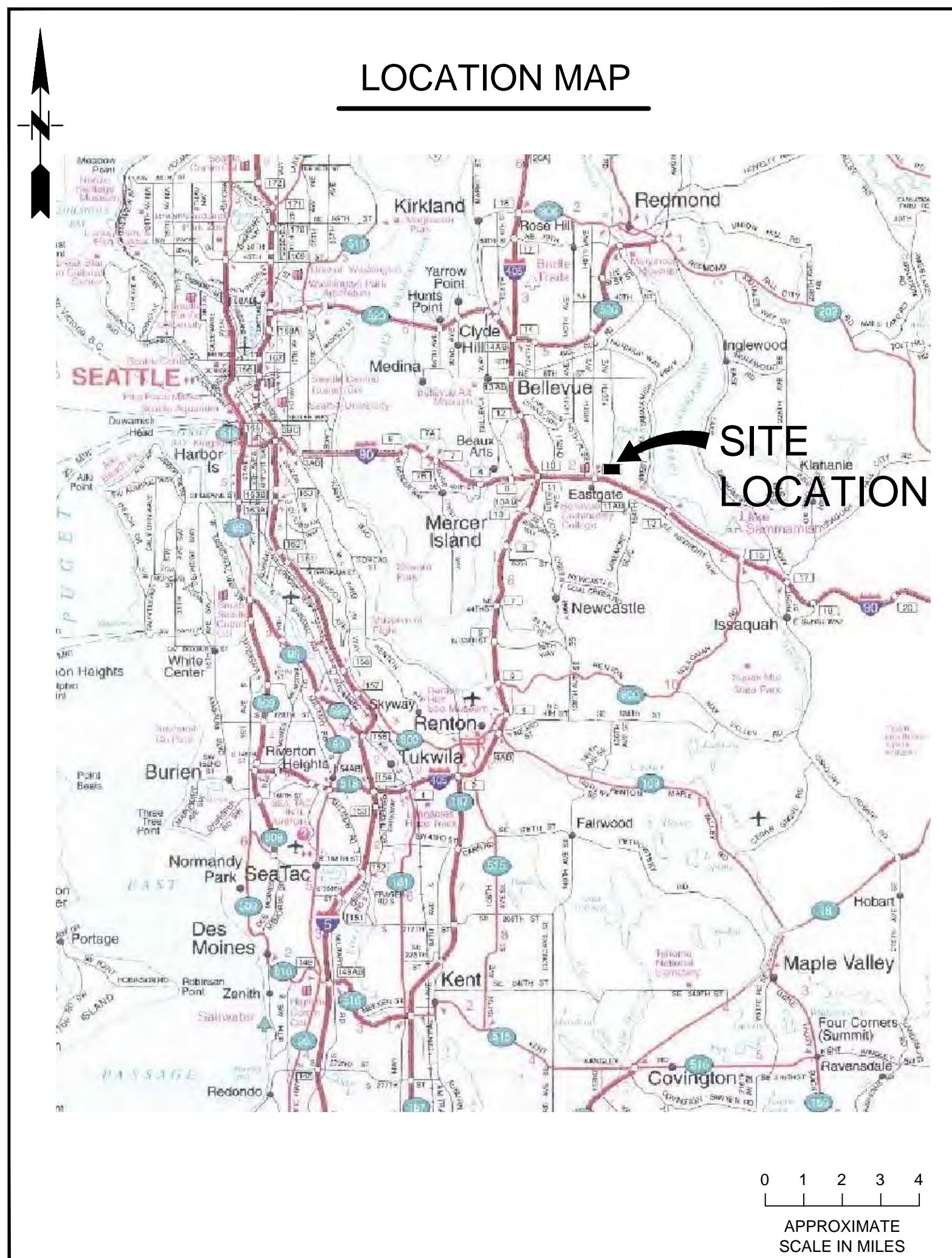
John Richards
Vice President
SCS Engineers

cc: Mark Schwisow – City of Bellevue
Tony Svorinich – SCS Field Services
Greg Helland – SCS Engineers

Attachments:

Record Drawings – Landfill Gas Control System Modifications, Eastgate Landfill, September 18, 2020, SCS Engineers

LANDFILL GAS CONTROL SYSTEM MODIFICATIONS EASTGATE LANDFILL



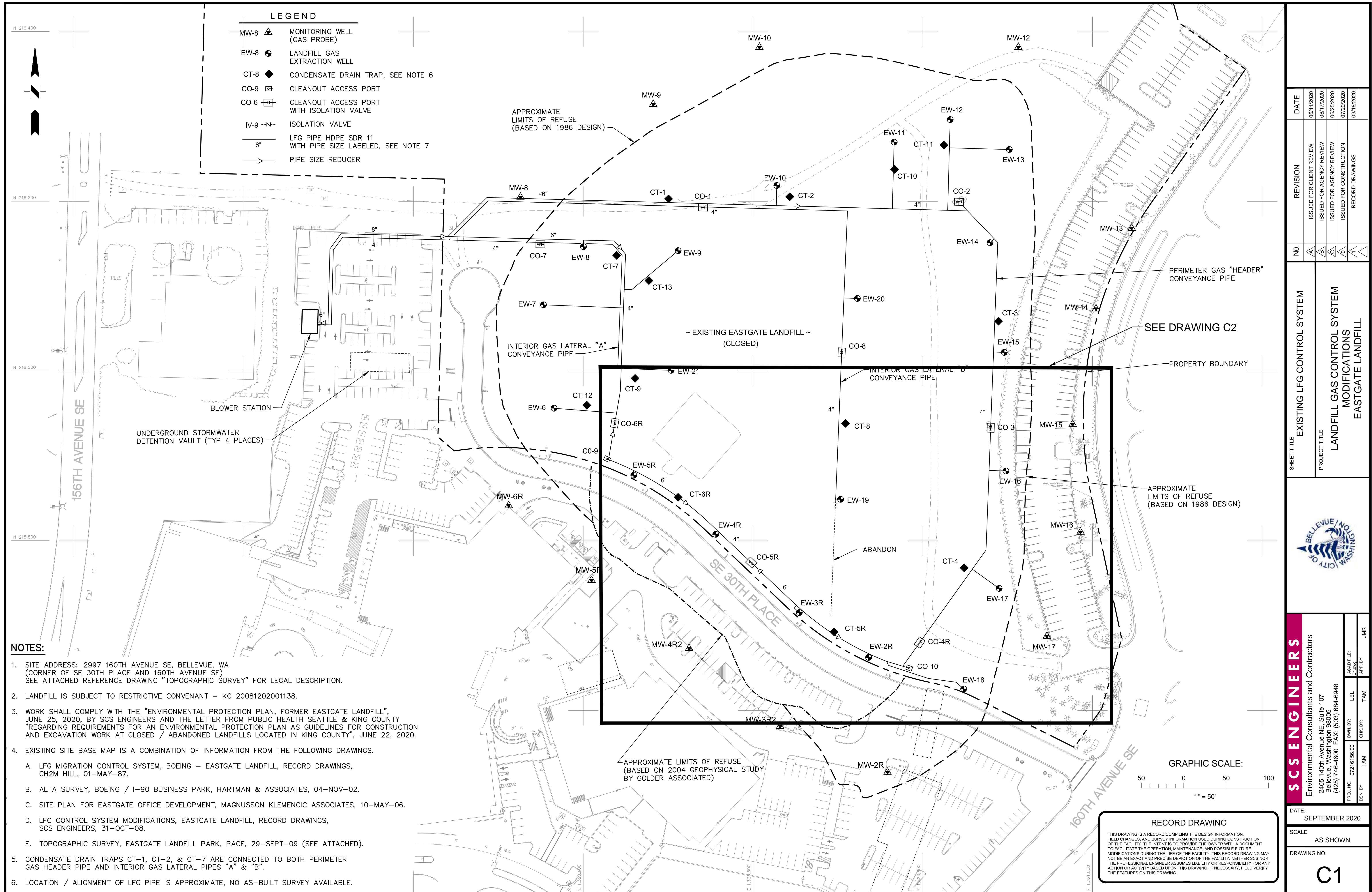
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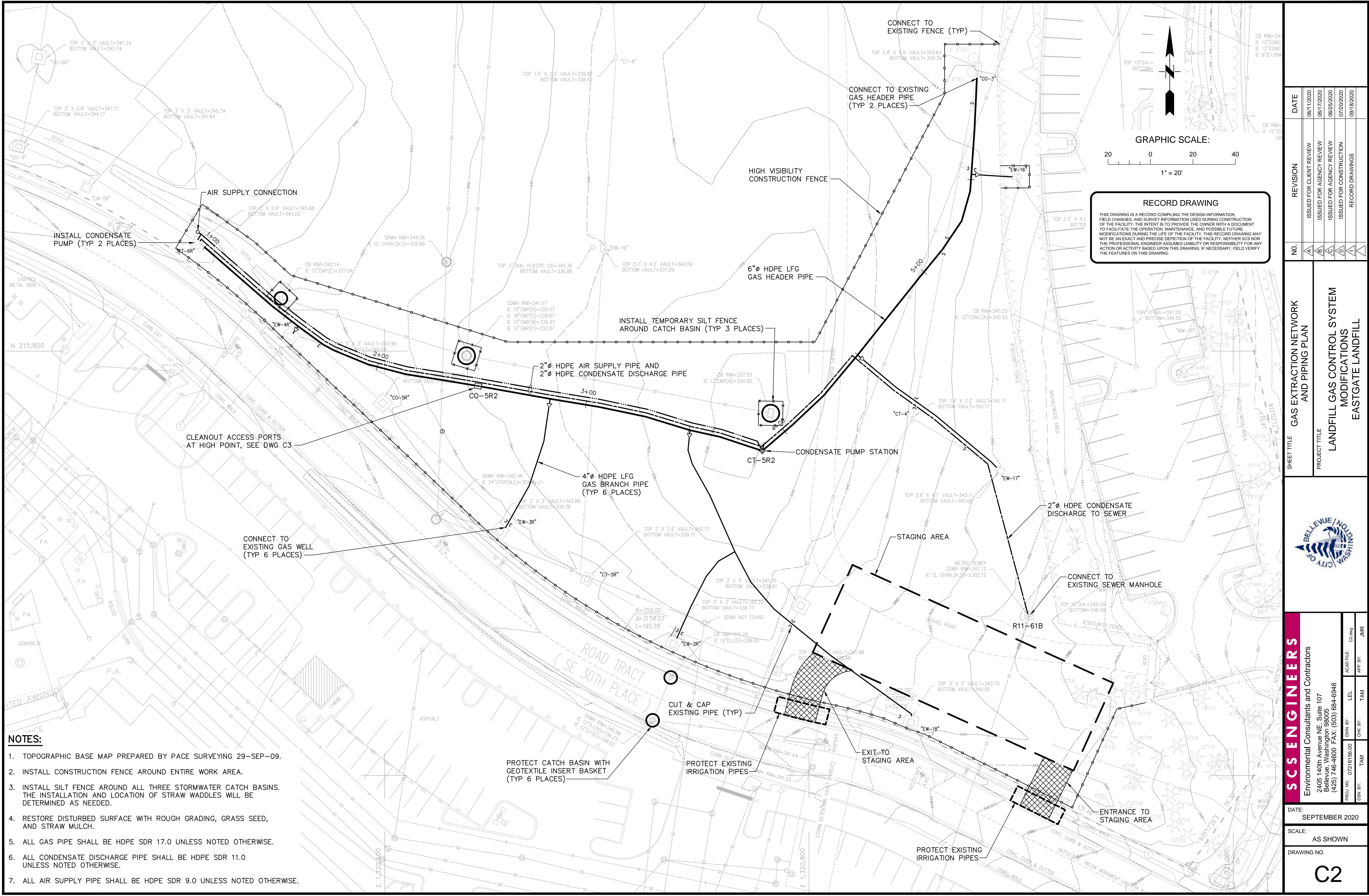
- G1 COVER SHEET
- C1 EXISTING LFG CONTROL SYSTEM
- C2 GAS EXTRACTION NETWORK
AND PIPING PLAN
- C3 GAS AND CONDENSATE
CONVEYANCE PIPE DETAILS
- REFERENCE DRAWING
(TOPOGRAPHIC SURVEY)

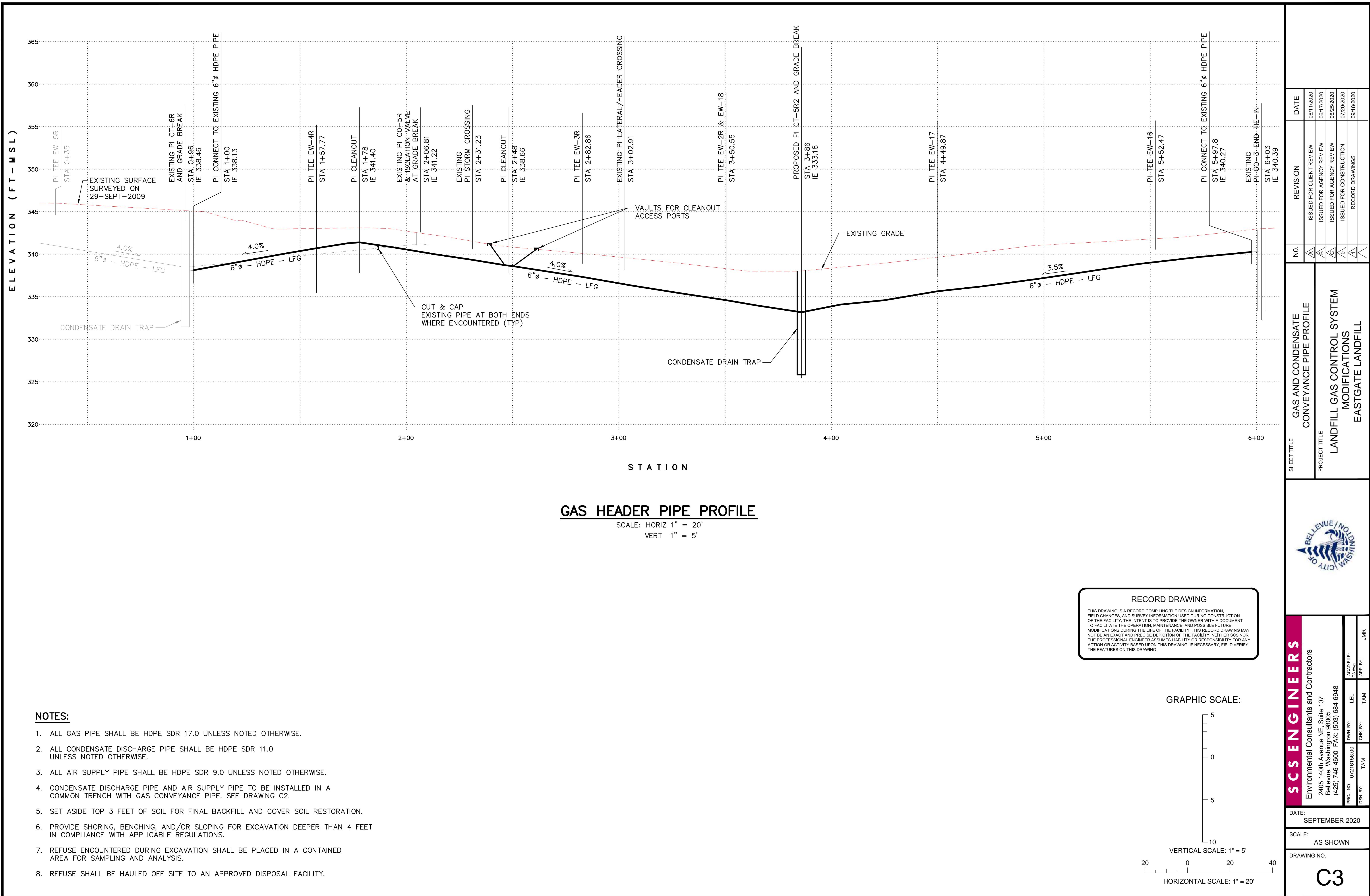
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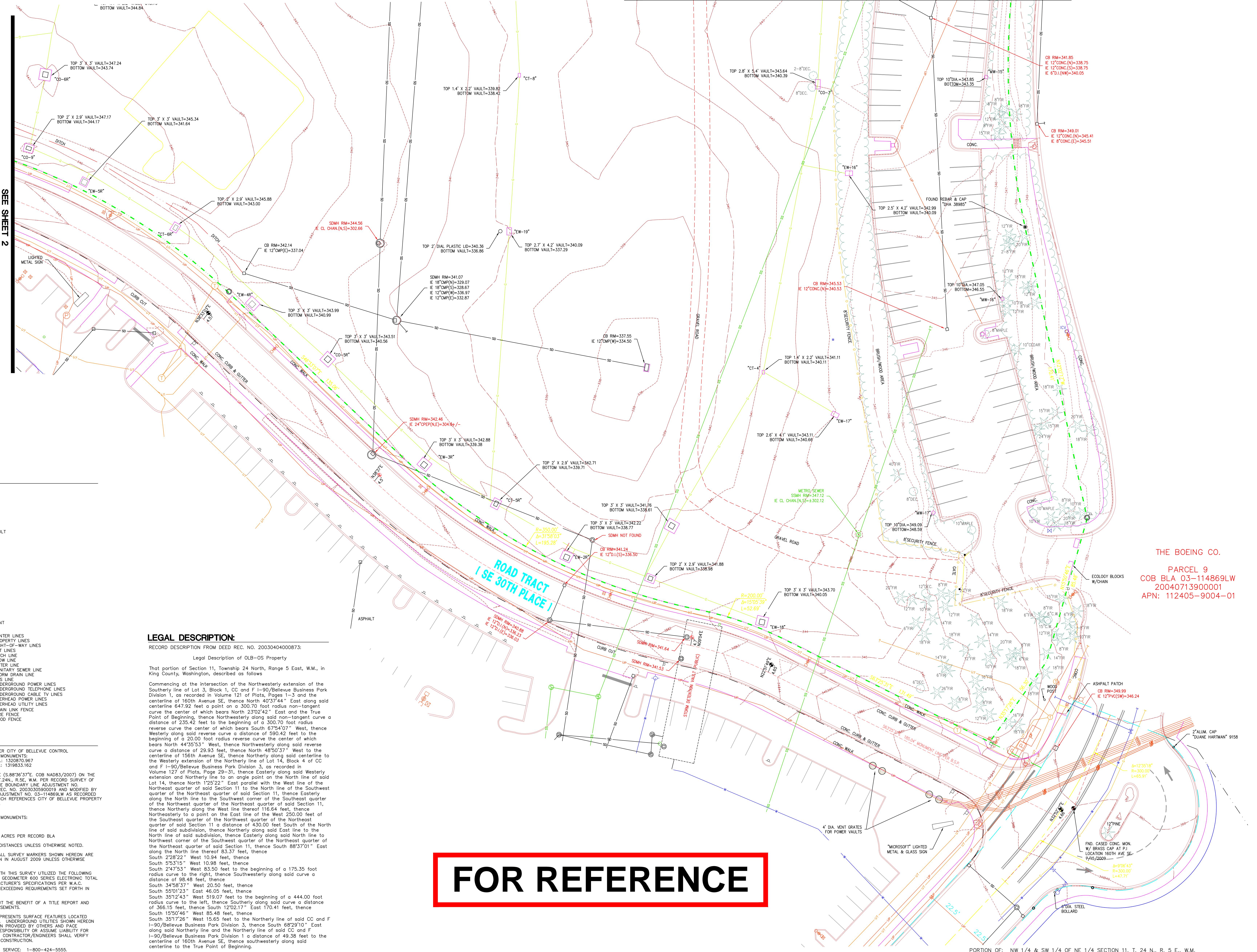
THIS DRAWING IS A RECORD COMPILING THE DESIGN INFORMATION, FIELD CHANGES, AND SURVEY INFORMATION USED DURING CONSTRUCTION OF THE FACILITY. THE INTENT IS TO PROVIDE THE OWNER WITH A DOCUMENT TO FACILITATE THE OPERATION, MAINTENANCE, AND POSSIBLE FUTURE MODIFICATIONS DURING THE LIFE OF THE FACILITY. THIS RECORD DRAWING MAY NOT BE AN EXACT AND PRECISE DEPICTION OF THE FACILITY. NEITHER SCS NOR THE PROFESSIONAL ENGINEER ASSUMES LIABILITY OR RESPONSIBILITY FOR ANY ACTION OR ACTIVITY BASED UPON THIS DRAWING. IF NECESSARY, FIELD VERIFY THE FEATURES ON THIS DRAWING.

SHEET TITLE		COVER SHEET		NO.	REVISION	DATE
PROJECT TITLE						
 LANDFILL GAS CONTROL SYSTEM MODIFICATIONS EASTGATE LANDFILL						
SCSS ENGINEERS		Environmental Consultants and Contractors				
DATE: SEPTEMBER 2020		SCALE: AS SHOWN				
DRAWING NO. G1						
PROJ. NO.	07216156.00	DWN. BY:	LEL	ACAD FILE: G1.DWG	APP. BY:	JMR
DSN. BY:	TAM	CHK. BY:	TAM			









CAD/CALC	JD		
DRAWN	DB		
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DATE 9/29/2009
SCALE 1" = 20'
SURVEY TEAM GW/BD/DB
FIELD BOOK 611C, 611D
DWG FILE 9398-SRV.dwg

PROJECT NO.

09398.10



STA 0+80 LOOKING EAST TO CT-6R



STA 1+00 LOOKING EAST



STA 1+50 LOOKING EAST



STA 2+00 LOOKING EAST



STA 2+25 LOOKING EAST



STA 2+40 LOOKING EAST



STA 2+75 LOOKING EAST



STA 2+82 LOOKING SOUTH TO EW-3R



BRANCH PIPE TO EW-3R LOOKING SOUTH



STA 3+20 LOOKING EAST



STA 3+45 LOOKING EAST



STA 3+50 LOOKING SOUTH TO EW-2R & EW-18

PROJECT TITLE LANDFILL GAS CONTROL SYSTEM MODIFICATIONS EASTGATE LANDFILL	SHEET TITLE CONSTRUCTION PHOTOS	NO.	REVISION	DATE
	RECORD DRAWINGS	A		09/18/2020
BELLEVUE / NO. 1 CITY OF WASHINGTON				
SCS ENGINEERS				
Environmental Consultants and Contractors 2405 140th Avenue NE, Suite 107 Bellevue, Washington 98005 (425) 746-4500 FAX: (503) 684-6948	PROJ. NO.: 07216156.00 DSN. BY: TAM CHK. BY: LEL DWN. BY: TAM APF. BY: JMR ACAD FILE: P1-Photos.dwg	DATE: SEPTEMBER 2020	SCALE: AS SHOWN	DRAWING NO. P1



LATERAL PIPE TO EW-2R & EW-18 LOOKING SOUTHEAST



LATERAL PIPE TO EW-2R & EW-18 LOOKING SOUTHEAST



BRANCH PIPE TO EW-2R LOOKING SOUTH



BRANCH PIPE TO EW-2R LOOKING SOUTH



BRANCH PIPE TO EW-18 LOOKING SOUTHEAST



BRANCH PIPE TO EW-18 LOOKING SOUTHEAST



BRANCH PIPE TO EW-18 LOOKING SOUTHEAST



STA 3+86 LOOKING NORTHEAST



STA 4+20 LOOKING NORTHEAST



STA 4+40 LOOKING NORTHEAST



STA 4+50 LOOKING SOUTHEAST TO EW-17



BRANCH PIPE LOOKING SOUTHEAST TO EW-17

S C S ENGINEERS	CONSTRUCTION PHOTOS		REVISION	DATE
	No.	RECORD DRAWINGS		
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			DSN BY: TAM	DYN. BY: LEL
DATE: SEPTEMBER 2020				
SCALE: AS SHOWN				
DRAWING NO.				

P2



BRANCH PIPE LOOKING SOUTHEAST TO EW-17



STA 4+65 LOOKING NORTHEAST



STA 5+00 LOOKING NORTHEAST



STA 5+20 LOOKING NORTHEAST



STA 5+40 LOOKING NORTH



STA 5+52 LOOKING EAST TO EW-16



STA 5+75 LOOKING NORTH



STA 6+00 AT CO-3



STA 6+00 LOOKING SOUTH



STA 5+60 LOOKING SOUTH



STA 5+25 LOOKING SOUTHWEST



STA 5+00 LOOKING SOUTHWEST



STA 4+75 LOOKING SOUTHWEST



STA 4+55 LOOKING SOUTHWEST



STA 4+15 LOOKING SOUTHWEST



VIEW LOOKING WEST TO CT-5R2



STA 3+86 LOOKING WEST



STA 3+70 LOOKING WEST



STA 3+55 LOOKING WEST



STA 3+20 LOOKING WEST



STA 3+10 LOOKING WEST



STA 2+85 LOOKING WEST



STA 2+50 LOOKING WEST



STA 2+20 LOOKING WEST

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	APF BY:	△	△	
	JMR	△	△	
Environmental Consultants and Contractors	2405 140th Avenue NE, Suite 107 Bellevue, Washington 98005 (425)746-4500 FAX: (503) 684-6948	DYN. BY:	L.E.L.	
PROJ. NO. 07216156.00	CHK. BY:	TAM	APF. BY:	
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DATE: SEPTEMBER 2020	07216156.00	PI-1-Photos.dwg		
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STA 1+90 LOOKING WEST



STA 1+78 LOOKING WEST



STA 1+65 LOOKING WEST



STA 1+57 LOOKING WEST TO CT-6R



CT-5R2



CT-5R2



CT-5R2



6"Ø GAS, 2"Ø CONDENSATE & 2"Ø AIR SUPPLY PIPE



CONDENSATE PIPE CONNECTION TO SEWER PIPE



CT-5R2



CT-5R2



SDR OF 2"Ø CONDENSATE & AIR SUPPLY PIPE

PROJECT TITLE	CONSTRUCTION PHOTOS			REVISION	DATE
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LANDFILL GAS CONTROL SYSTEM MODIFICATIONS EASTGATE LANDFILL					09/18/2020
BELLEVUE / NO. 1 WASHINGTON CITY					
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DSN. BY:	TAM	CNC BY:	PROJ. NO.:		
DATE: SEPTEMBER 2020					
SCALE: AS SHOWN					
DRAWING NO.					



SDR OF 2"Ø CONDENSATE & AIR SUPPLY PIPE



2"Ø AIR SUPPLY, 2"Ø CONDENSATE & 6"Ø GAS PIPE



6"Ø GAS, 2"Ø CONDENSATE & 2"Ø AIR SUPPLY PIPE



6"Ø GAS, 2"Ø CONDENSATE & 2"Ø AIR SUPPLY PIPE



2"Ø AIR SUPPLY, 2"Ø CONDENSATE & 6"Ø GAS PIPE



6"Ø GAS, 2"Ø CONDENSATE & 2"Ø AIR SUPPLY PIPE



6"Ø GAS, 2"Ø CONDENSATE & 2"Ø AIR SUPPLY PIPE



CONDENSATE PUMP STATION CT-5R2
WITH PNEUMATIC PUMP



CONDENSATE DRAIN TRAP CT-6
WITH PNEUMATIC PUMP

PROJECT TITLE	CONSTRUCTION PHOTOS			REVISION	DATE
	No.	RECORD DRAWINGS	09/18/2020		
LANDFILL GAS CONTROL SYSTEM MODIFICATIONS EASTGATE LANDFILL					
BELLEVUE / NOLLY WASHINGTON					
SCS ENGINEERS					
Environmental Consultants and Contractors 2405 140th Avenue NE, Suite 107 Bellevue, Washington 98005 (425)746-4800 FAX: (503) 684-6948	PROJ. NO.: 07216156.00	DRAWN BY: CNC BY: TAM	LEL P1 - Photo drawing	ACAD FILE: P1 - Photo drawing	JMR APF. BY:
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