Fort Detrick Remedial Investigation/Feasibility Study

Status Update

Fort Detrick Restoration Advisory Board Meeting
May 7, 2009
Fort Detrick, Maryland

Status Update Discussion

- Area A – Building 568 TCE Spill Site
  - Recent Long-Term Monitoring Results
- Area B Groundwater
  - Recent Quarterly Sampling
  - NPL Listing and Status
  - Monitoring Well Drilling and Installation
- Area B Former Disposal Sites
  - Schedule Update
  - Soil Stockpiling Activities

Area A – Building 568 TCE Spill Site

Area A
Building 568 TCE Spill Site

- Selected remedy was “Plume Containment using Groundwater Extraction and Monitoring”, which included:
  - Continued operation of the existing groundwater extraction system in Building 568
  - Long-term monitoring of groundwater every six months since 2002

Building 568 TCE Concentrations Recent Sampling

TCE in groundwater at Building 568 slightly above the 5 µg/L MCL

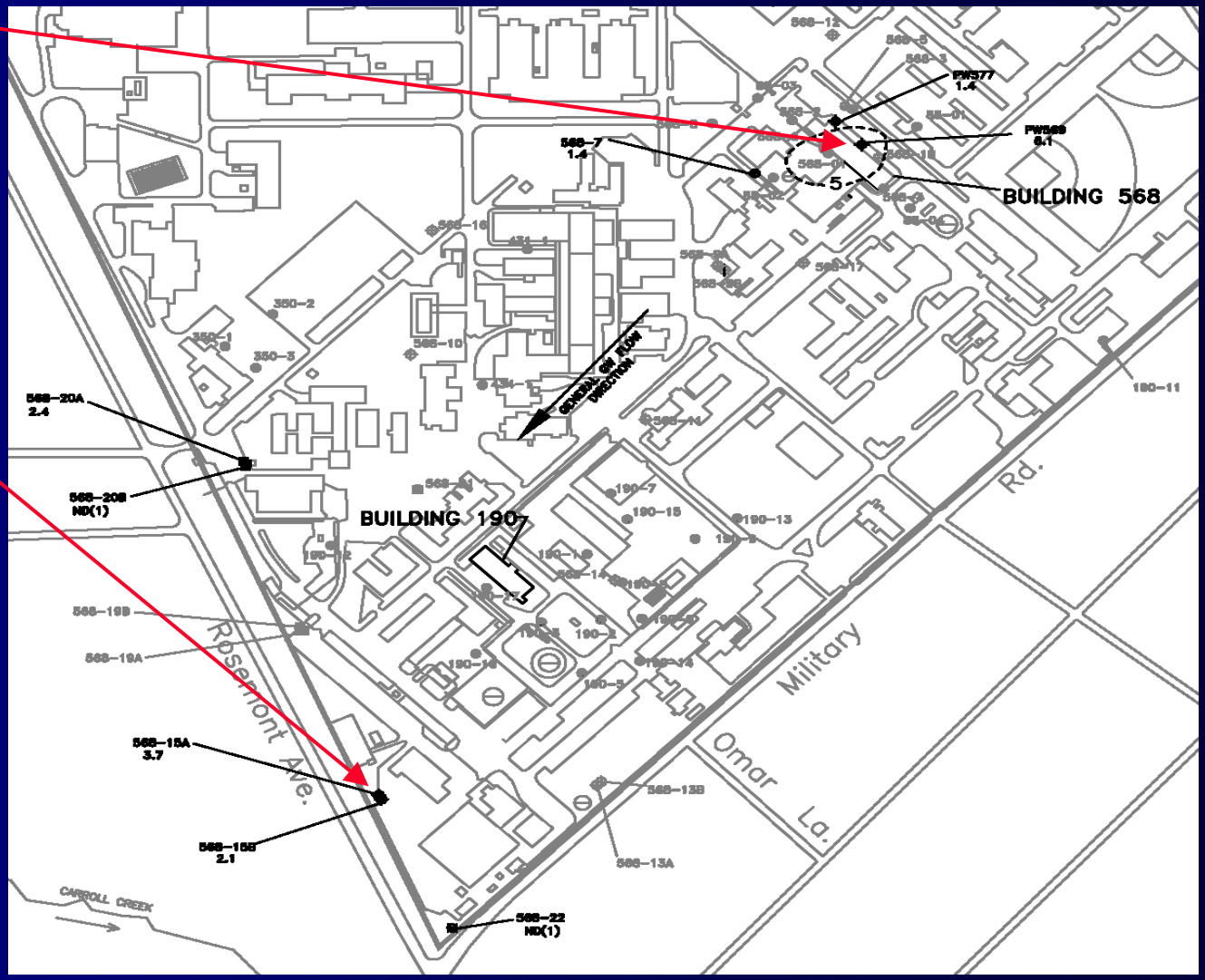
<u>PW 569</u>
Mar 08 – 12 µg/L
Sep 08 – 10 µg/L
Mar 09 – 6.1 µg/L

<u>PW 577</u>
Mar 08 – 2.0 µg/L
Sep 08 – 0.8 µg/L
Mar 09 – 1.4 µg/L

TCE in <u>568-15A</u> has been near the 5 µg/L MCL over the past few years

Mar 06 – 3.8 µg/L
Sep 06 – 5.8 µg/L
Mar 07 – 7.1 µg/L
Oct 07 – 2.4 µg/L
Mar 08 – 5.7 to µg/L
Sep 08 – 2.9 µg/L
Mar 09 – 3.7 µg/L

PCE has also been detected in 568-15A (0.75-1.8 µg/L), possibly indicating a different source



Area A
Building 568 Path Forward

- Once source area TCE concentrations are consistently below MCL (5 µg/L) Army will close site with MDE concurrence
- Well 568-15A will be investigated as part of the Area B groundwater investigation (dye trace study) to determine the source of contamination in this well

Area B Groundwater

Area B Groundwater Quarterly Monitoring

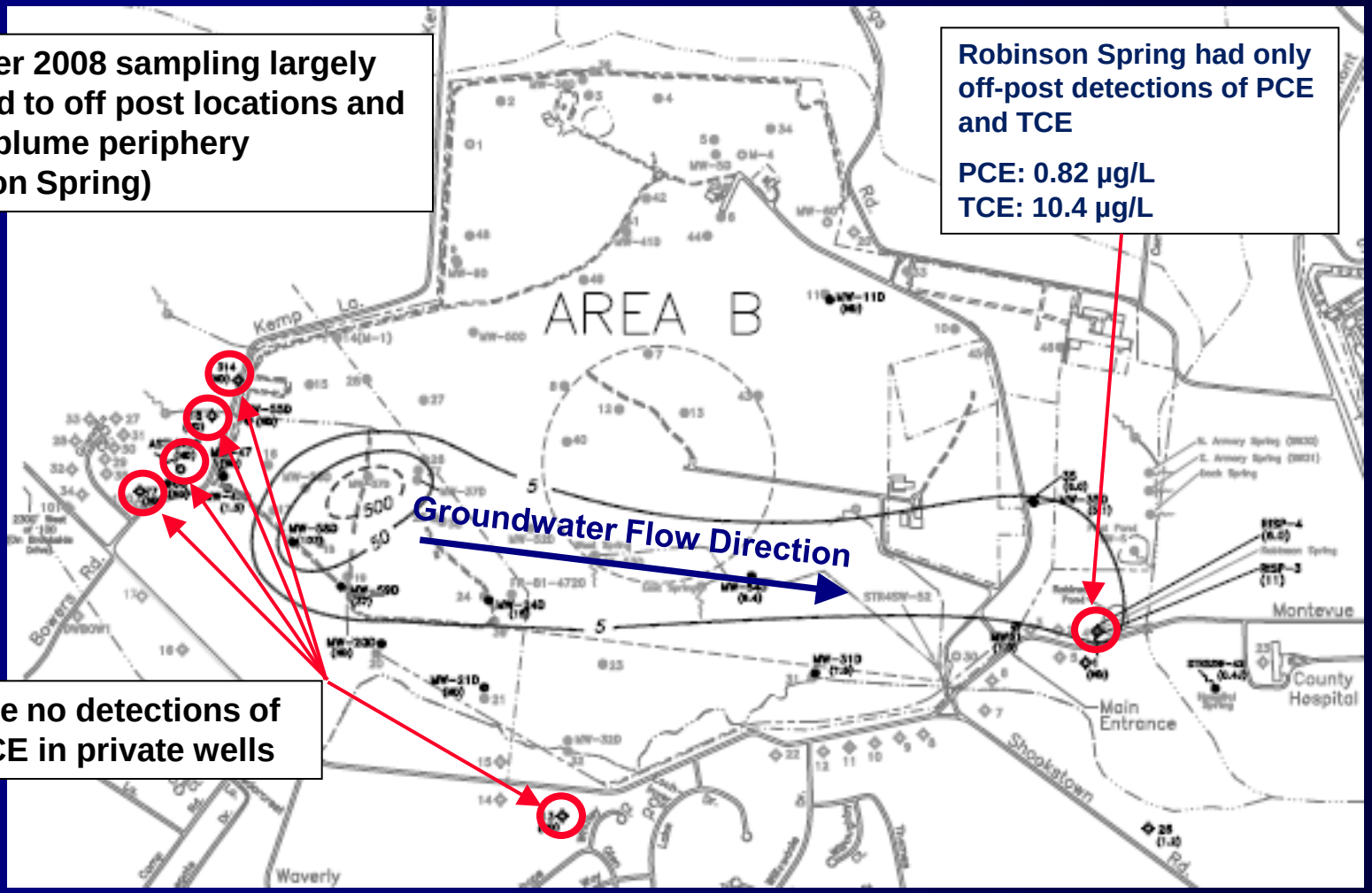
- Recent sampling events include:
  - March 2008 – Sampling locations primarily restricted to on post plume periphery and off post neighboring locations
  - June 2008 – Sampling limited to private wells in use neighboring Area B
  - September 2008 – Sampling limited to private wells in use neighboring Area B, plus two new off post locations
  - ***December 2008 – Sampling limited to private wells in use neighboring Area B***
  - ***March 2009 – Sampling limited to private wells in use neighboring Area B***

December 2008 Sampling

December 2008 sampling largely restricted to off post locations and on post plume periphery (Robinson Spring)

Robinson Spring had only off-post detections of PCE and TCE

PCE: 0.82 µg/L
TCE: 10.4 µg/L



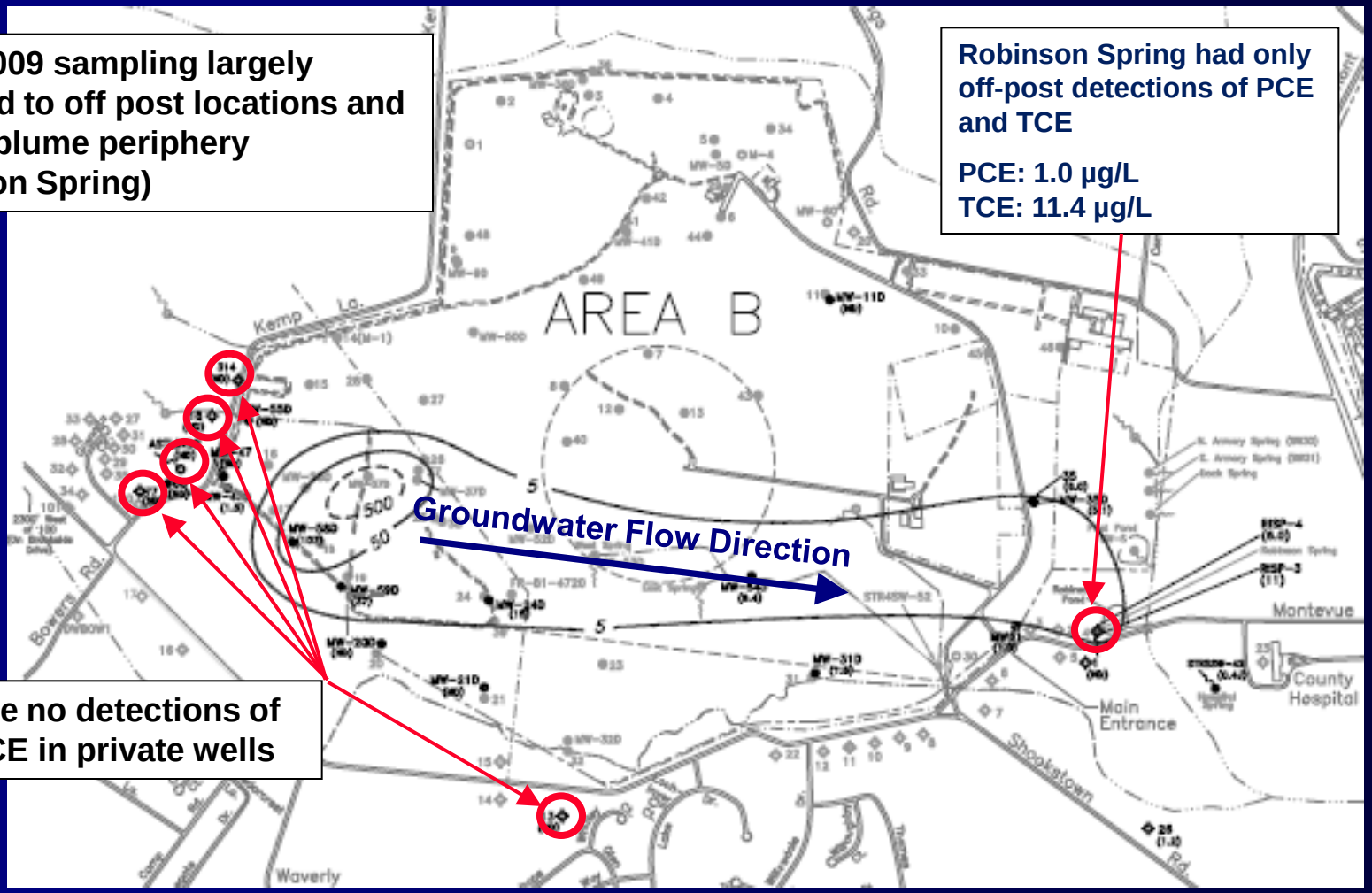
There were no detections of PCE or TCE in private wells

March 2009 Sampling

March 2009 sampling largely restricted to off post locations and on post plume periphery (Robinson Spring)

Robinson Spring had only off-post detections of PCE and TCE

PCE: 1.0 µg/L
TCE: 11.4 µg/L



There were no detections of PCE or TCE in private wells

Area B Groundwater NPL Listing

- In February 2008, the Army submitted a Conceptual Site Model (CSM) to MDE and EPA describing the site conditions.
- MDE and EPA expressed concern that further characterization of groundwater was needed, and proposed the site to be listed on the National Priorities List (NPL).
- As part of the NPL listing, the Agency for Toxic Substances and Disease Registry (ATSDR) performed a Public Health Assessment.
- Listing became official on April 8, 2009

ATSDR Presentation

Area B Groundwater Activities and Path Forward

- March 2008 to Present
  - Army, MDE, and EPA have conducted a series of working meetings to review existing site data so that necessary further work and a work plan can be developed.
- Potential Additional Investigation/Characterization Activities
  - Additional wells
  - Dye trace to characterize deeper groundwater flow
  - Additional spring/seep survey
  - Sediment/surface water sampling
  - Expanded chemical analytical sampling parameters
  - Ecological habitat survey

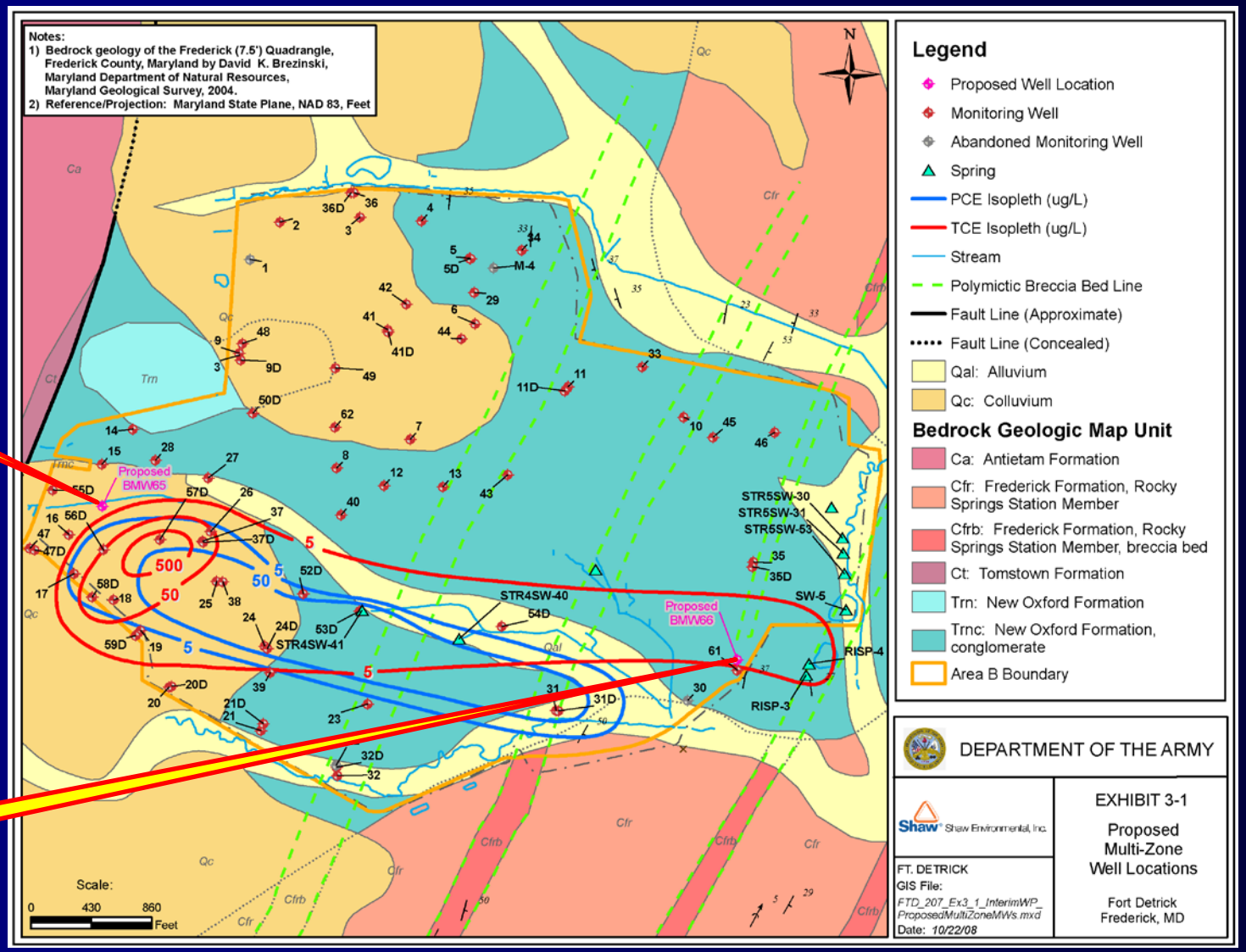
Area B Groundwater Activities and Path Forward

- Current Well Drilling
  - Army has begun an interim data collection effort to gather valuable information regarding how groundwater flows through the bedrock and to what depth.
  - Two wells are currently being installed. Target depth is 325 ft bgs with multiple completions in each well.
  - Sinkholes opened up during the drilling of proposed well BMW65.
  - Data will be used to characterize contamination and deep groundwater flow.
  - Anticipate drilling of wells to be completed by May 15.
- Problems and Lessons Learned
  - Drilling method is being reevaluated.
  - Large voids were encountered that were difficult to isolate during drilling.
  - Need to keep the well bore open for geophysical testing, which modified drilling process.
  - Need to containerize water (> 150, 000 gallons).
  - Need for multiple zone completions.

Area B New Well Locations

BMW65

BMW66

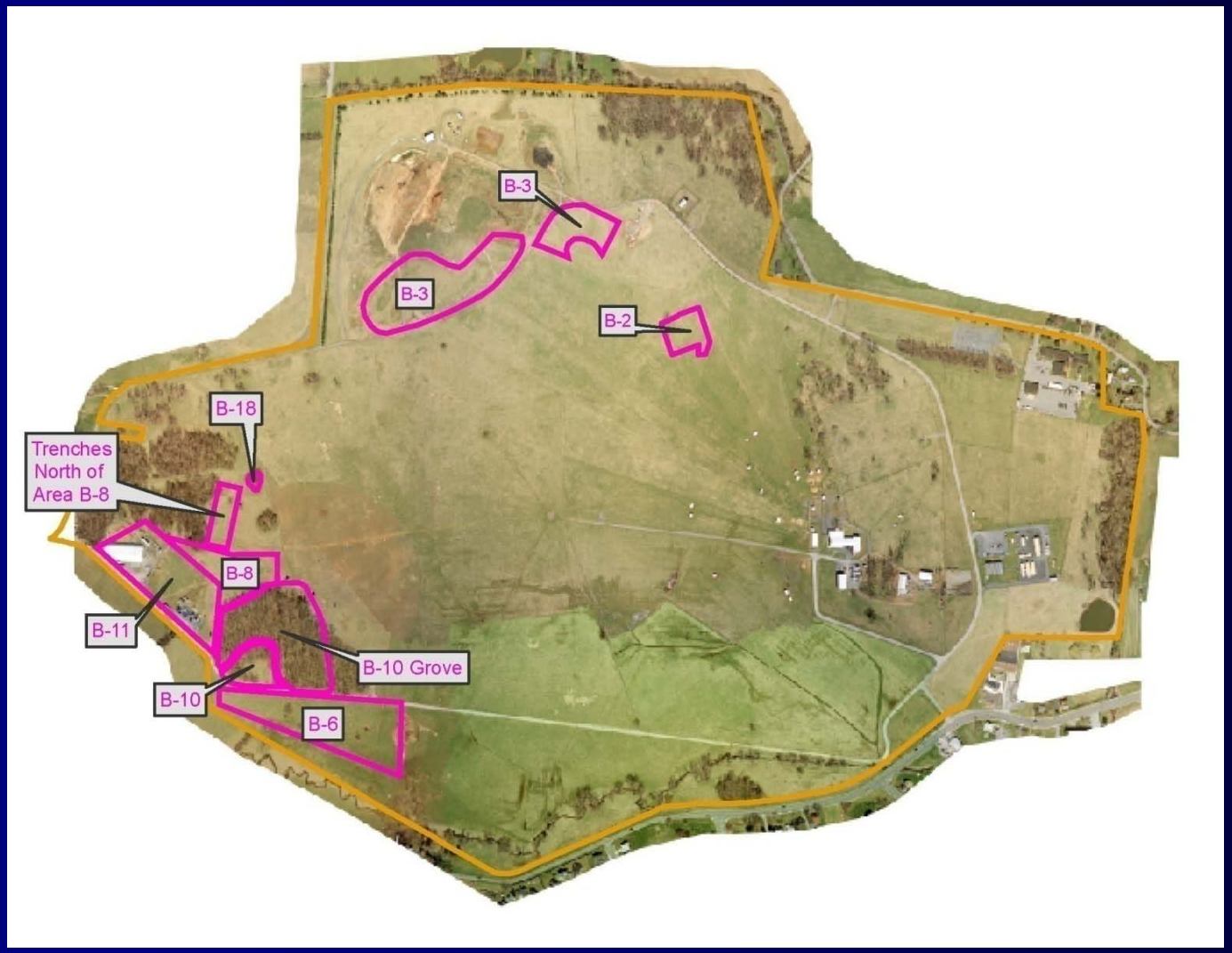


Well Drilling Activities

- Sinkholes opened up during the drilling of proposed well BMW65

Area B Former Disposal Sites

Area B Former Disposal Sites



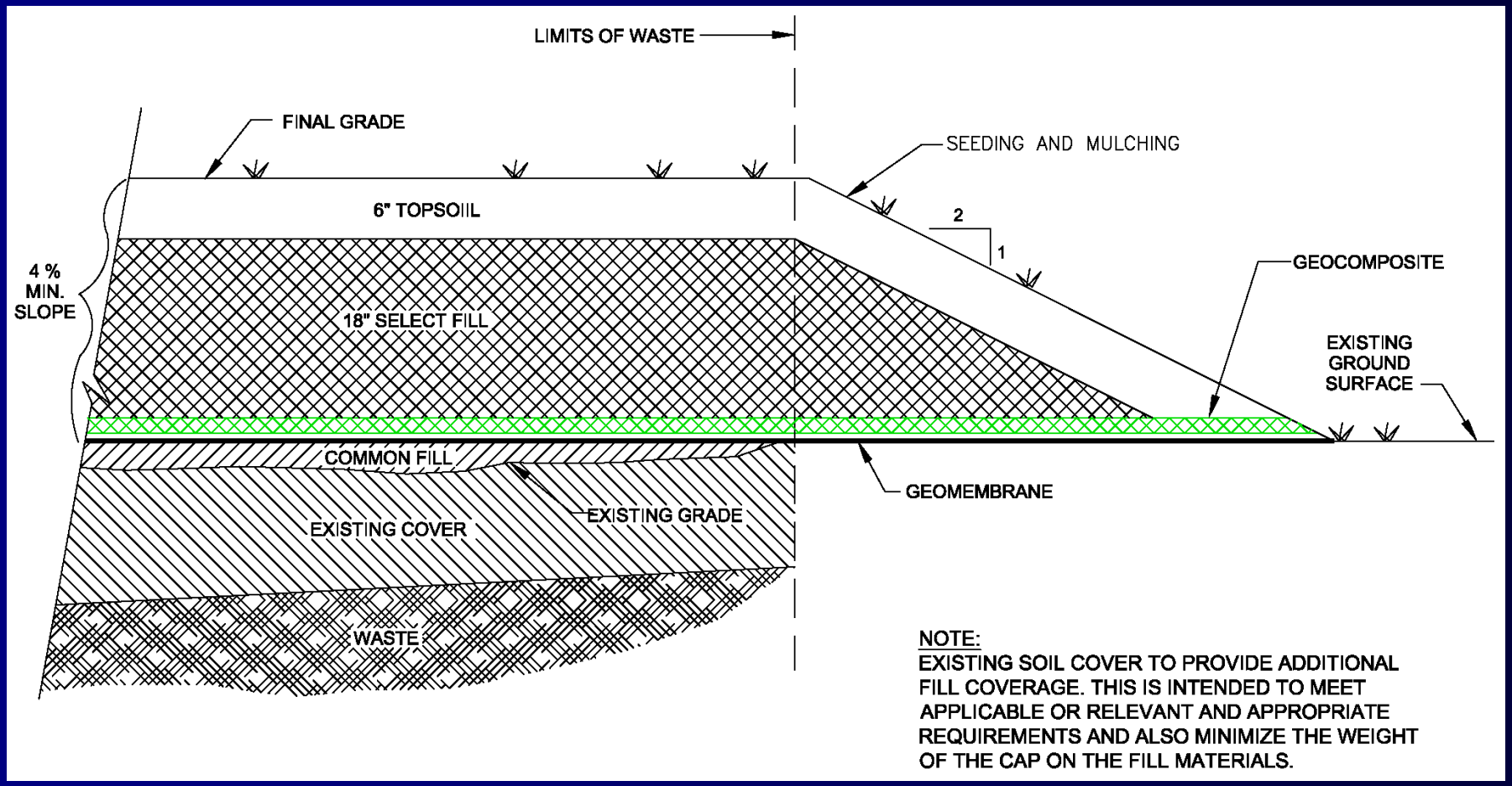
Remedial Strategy for Area B Former Disposal Sites

- Utilize EPA Presumptive Remedy for Landfills B-2, B-3 Inactive, B-6, B-8, Trenches North of B-8, B-10, B-11, and B-18
- Comply with current Code of Maryland Regulation 26.04.07.21 for Sanitary Landfill Closure as a relevant and appropriate requirement, which requires an impermeable cap to minimize infiltration of precipitation

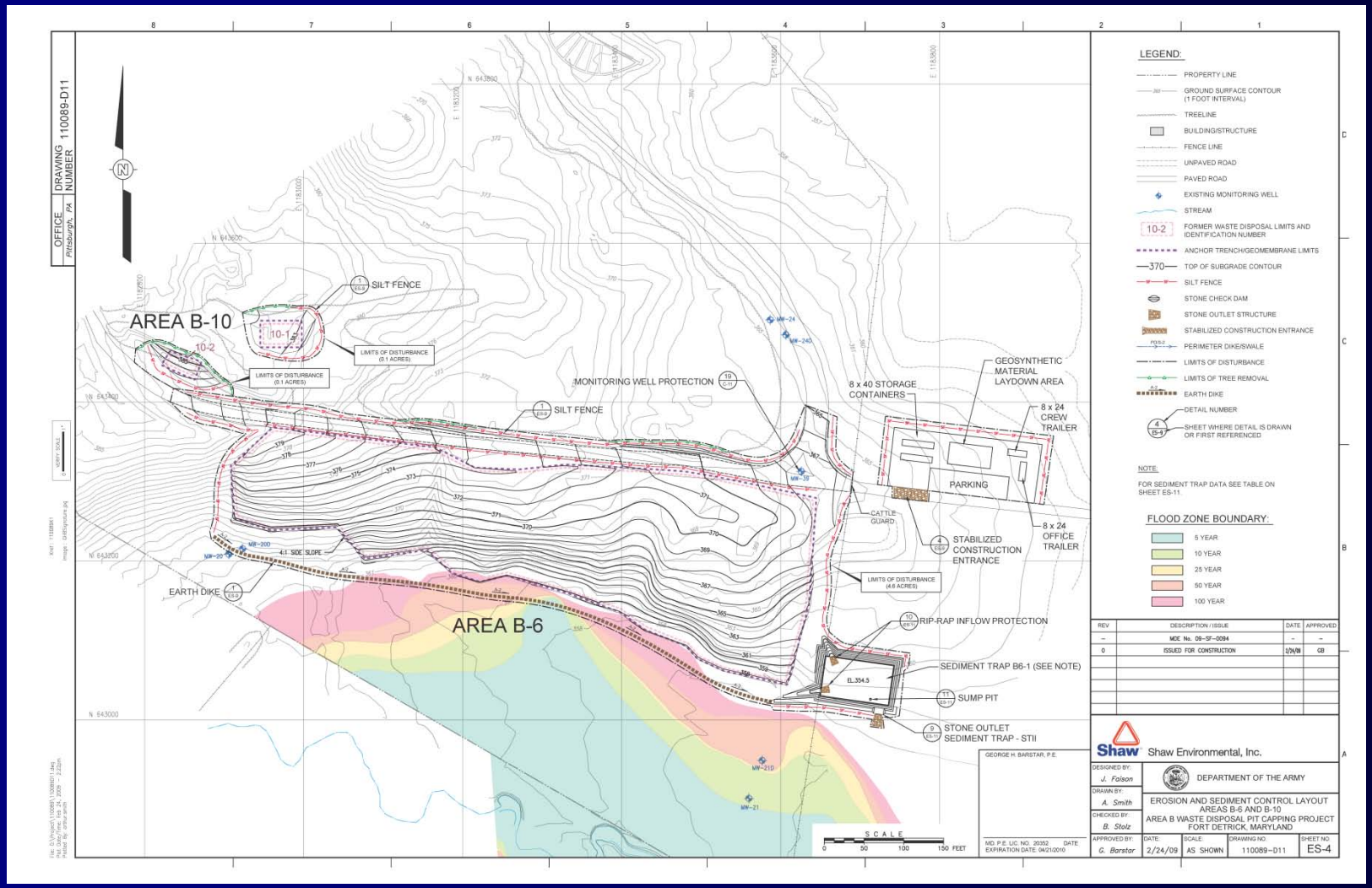
Area B Former Disposal Site Schedule

Site	Remedial Investigation/ Feasibility Study	Proposed Plan Public Comment	Decision Document	Capping Design	Construction
B-2	Finalized Oct 2006	Aug 24 - Sep 23 2007	Signed 21 February 2008	Currently under review by MDE. Anticipate approval by May 30 (Partial comments received from MDE May 1)	June 2009
B-3 Inactive	Finalized Aug 2008	Jan/Feb 2009	Signed by Army March 2009. Concurrence from MDE April 2009.		
B-6	Finalized Feb 2007				
B-8 Trenches North B-8 B-10/B-10 Grove B-11	Finalized Apr 2008				
B-18	March 2008 investigation confirmed buried waste present. Site included with area B-8.				

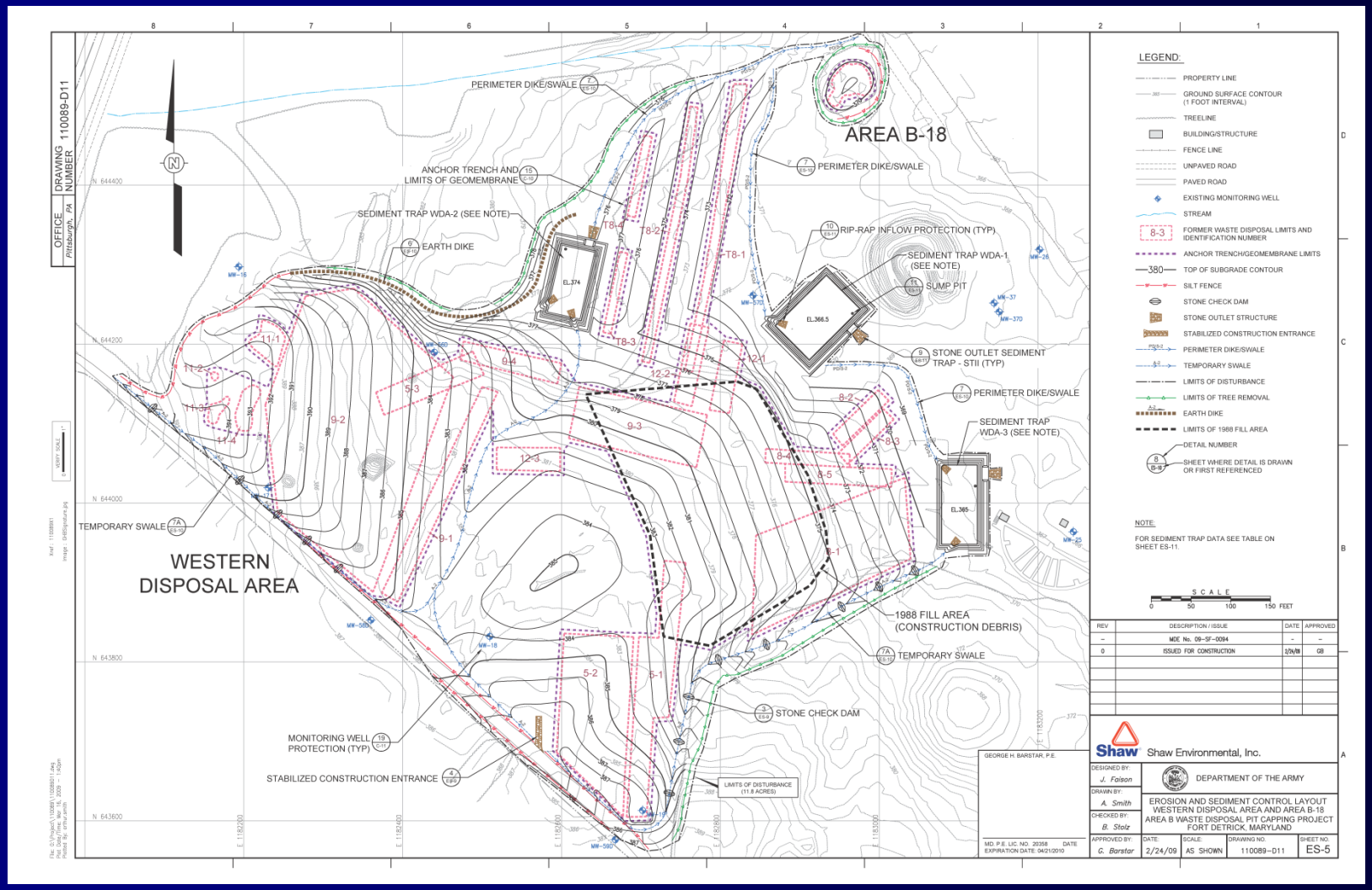
Area B Former Disposal Sites Landfill Cap Design



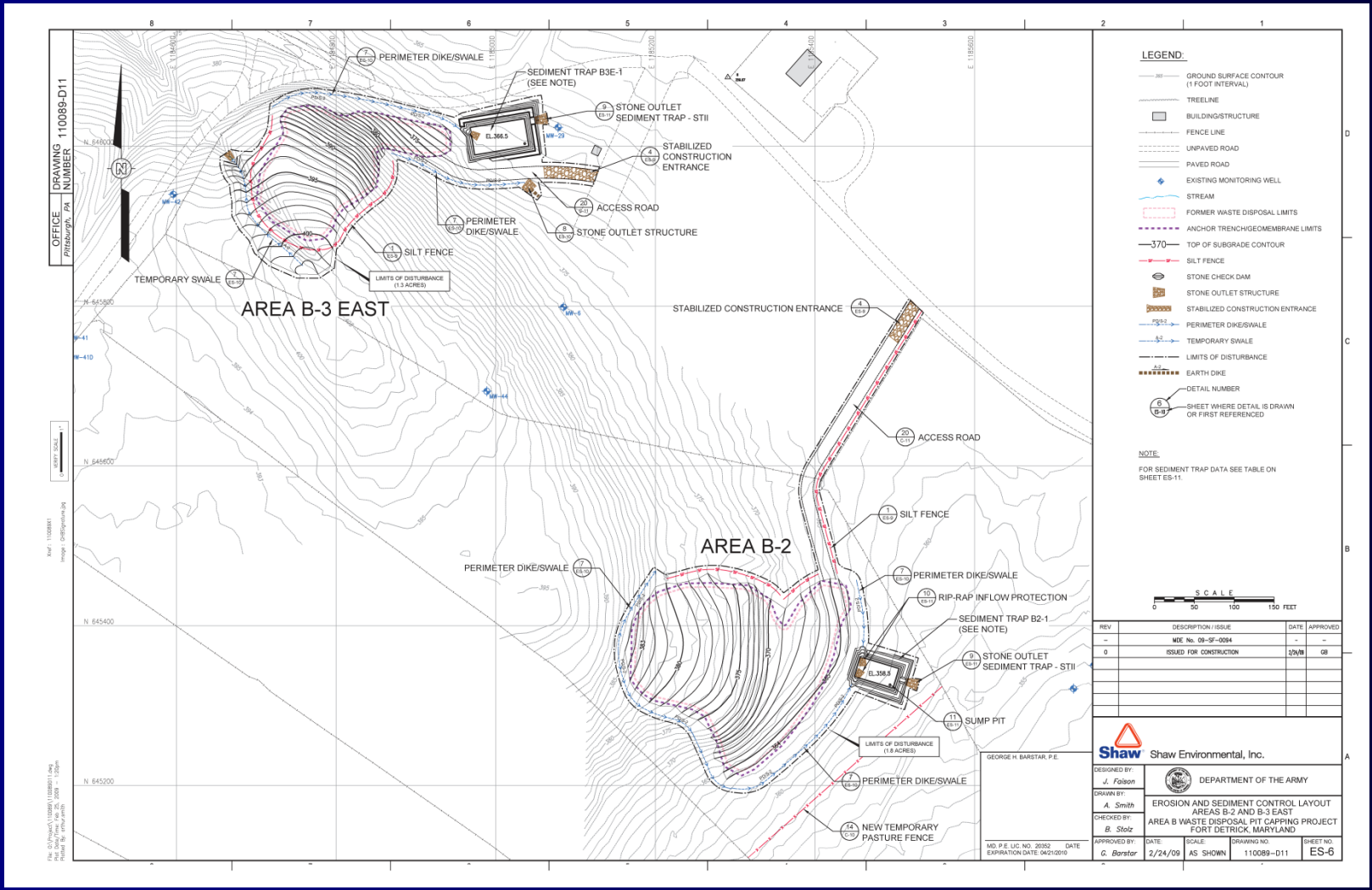
Area B-6
Capping Plan



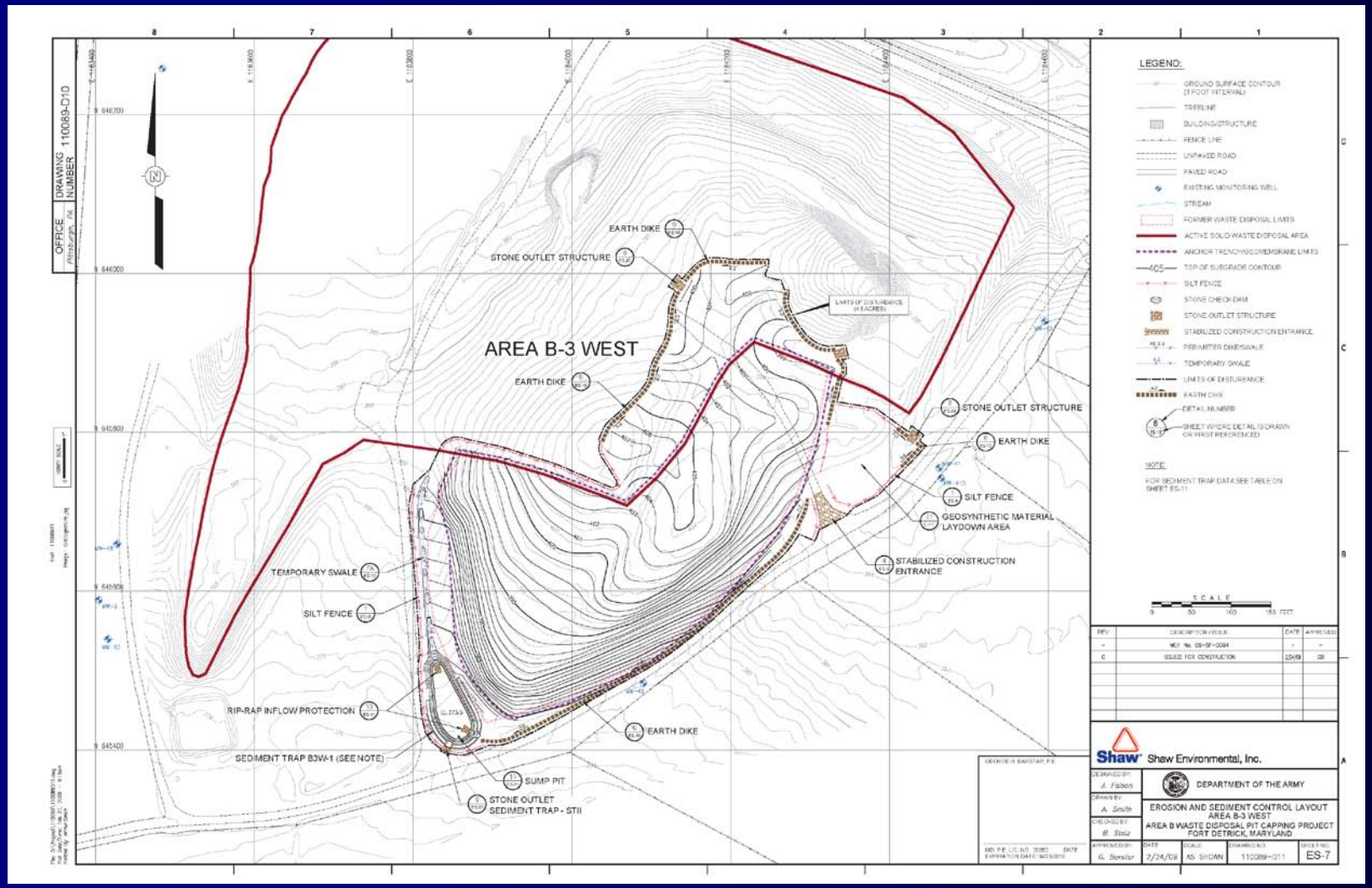
Western Disposal Area Capping Plan



Areas B-2/B-3 East Capping Plan



Area B-3 West Capping Plan



Soil Stockpiling Activities

Soil Stockpiling Activities

- Currently, soil to be used in the construction of the landfill caps is being stockpiled onsite in Area B
- Stockpile Schedule
  - Started in March installing erosion controls
  - At end of March, started accepting soil delivery
  - Soil stockpiling will continue until end of May
  - Approximately 150,000 tons of crushed stone and soil will be stockpiled
- Construction Schedule
  - Installation of erosion controls will begin in June
  - To maintain schedule, work will take place concurrently on more than one disposal area
  - Areas B-2 and B-3 will be initial caps. Should be complete by end of June.
  - Area B-6 will start in July
  - WDA will start in August
  - Cap construction will be complete by end of September 2009