



Idaho CERCLA Disposal Facility Expansion Project Update

Talley Jenkins

Federal Project Director
ICDF Expansion Project

U.S. Department of Energy, Idaho Operations Office

April 27, 2023



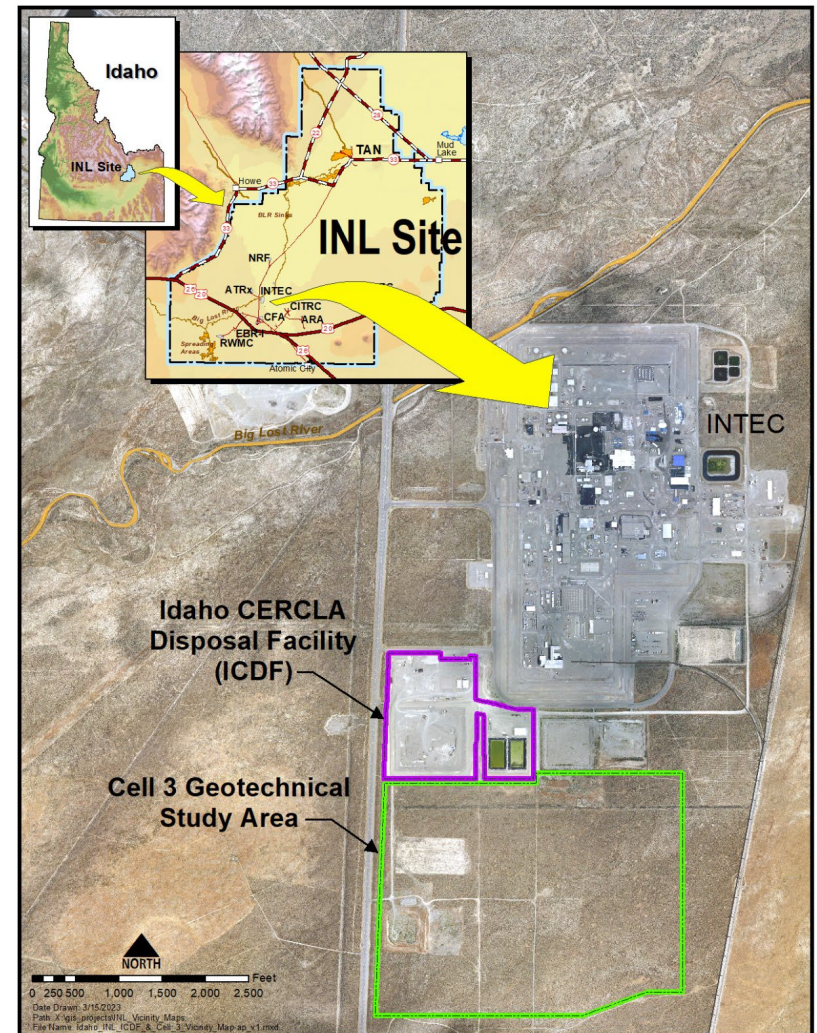
EM Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

Idaho Cleanup Project

ICDF Purpose

- Onsite disposal of WAG 3 (INTEC) and CERCLA generated waste at INL
- Central containment of waste for long-term protection of human health and environment
- Reduces risk of contaminant exposure to human and ecological receptors



ICDF Operational History

End of Fiscal Year	Net Volume of Waste Disposed of at the ICDF Landfill		ICDF Landfill Capacity Filled (%)
	Annual (m ³)	Cumulative (m ³)	
Begin	0.00E+00	0.00E+00	0
2003	3.18E+03	3.18E+03	2
2004	7.34E+04	7.66E+04	22
2005	5.85E+04	1.35E+05	34
2006	2.04E+04	1.55E+05	39
2007	2.76E+04	1.83E+05	47
2008	3.53E+04	2.18E+05	52
2009	2.13E+04	2.40E+05	56
2010	1.70E+04	2.57E+05	60
2011	2.45E+04	2.81E+05	63
2012	2.58E+03	2.84E+05	64
2013	1.30E+01	2.84E+05	64
2014	2.96E+03	2.87E+05	68
2015	3.34E+03	2.90E+05	69
2016	1.75E+03	2.92E+05	70
2017	3.10E+03	2.95E+05	72
2018	1.59E+03	2.97E+05	74
2019	1.54E+03	2.98E+05	73
2020	5.07E+03	3.03E+05	75
2021	3.79E+03	3.07E+05	76
2022	4.04E+03	3.11E+05	77

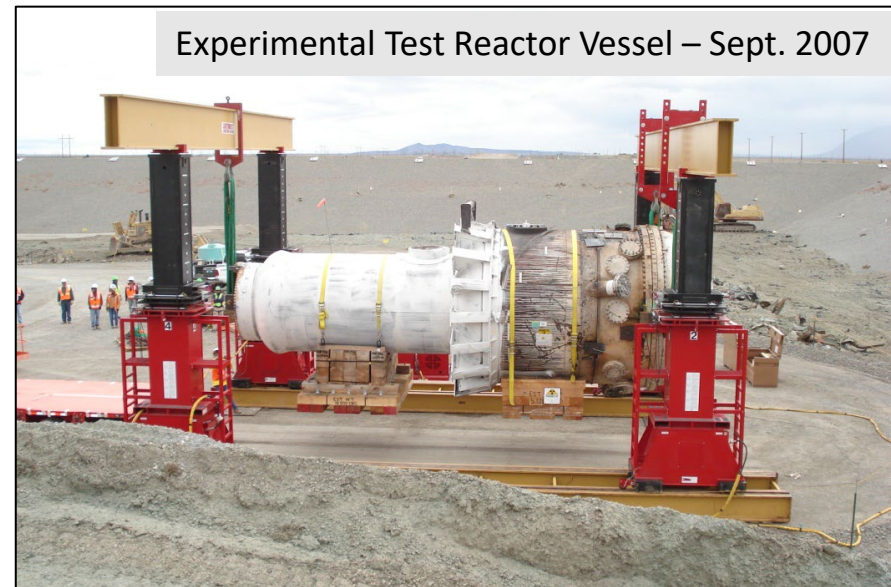


EM Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

Idaho Cleanup Project

ICDF Operational History (cont.)



EM Environmental Management

safety ♦ performance ♦ cleanup ♦ closure

Idaho Cleanup Project

ICDF Operational History (cont.)

Materials Test Reactor Vessel -Jan. 2011



Advanced Test Reactor Hot Cell #1 - Sept. 2011



Grouting Containers - Feb. 2009



AMWTP Cake Boxes Bins - July 2018



EM Environmental Management

safety ♦ performance ♦ cleanup ♦ closure

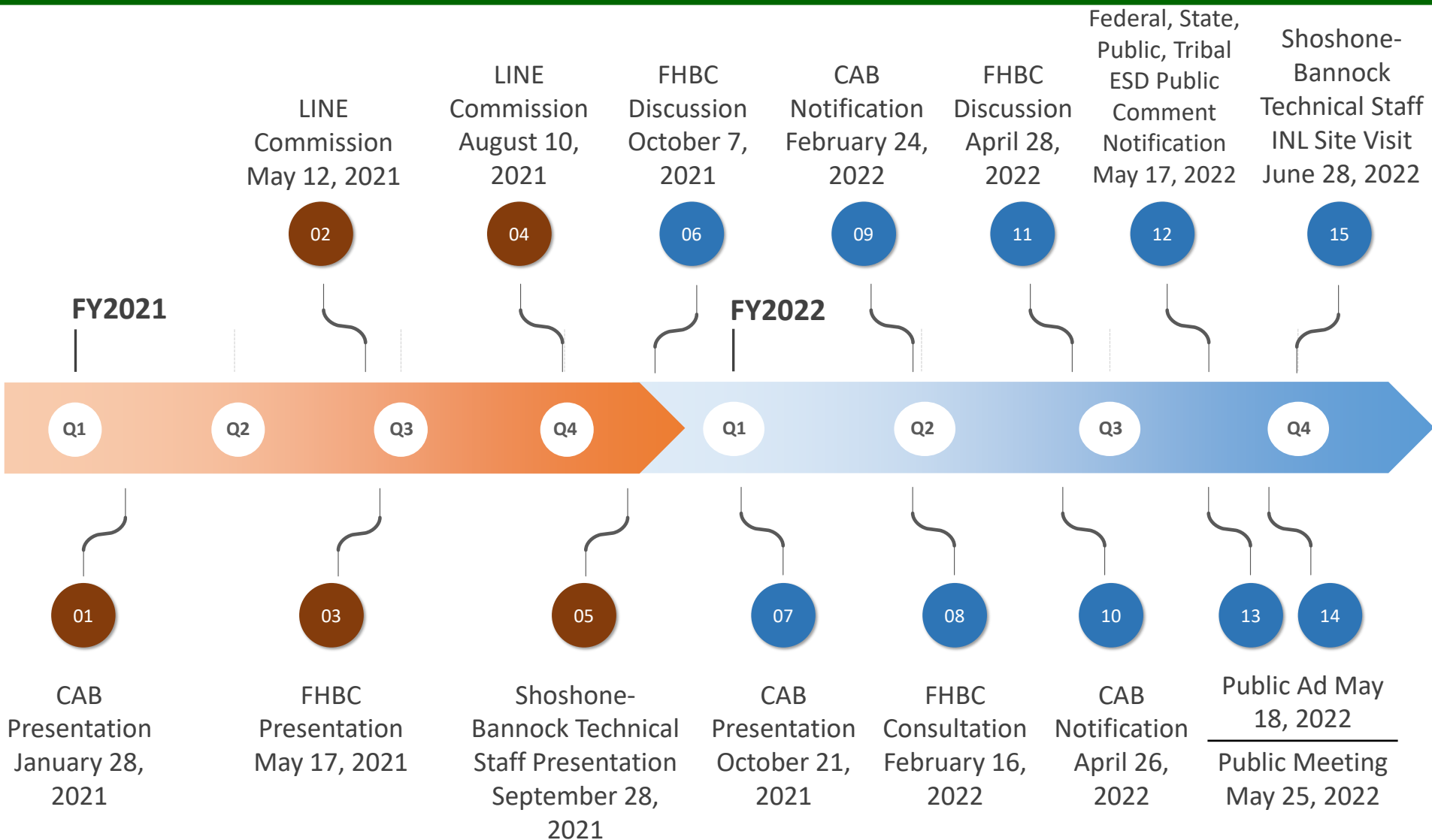
Idaho Cleanup Project

Explanation of Significant Differences (ESD)

- Increase Existing Landfill (Phase 1)
 - Add 140,000 m³ waste capacity for potential use
 - No change in cover/cap design
 - Meets ARARs (Applicable Relevant and Appropriate Requirements)
- Add New Landfill (Phase 2)
 - Same design as existing landfill
 - Adds 530,000 m³ to future disposal capacity
 - Same cover/cap design
 - Meets ARARs
- Extend Operational Life of ICDF Complex
 - From 2025 to 2050



ICDF ESD Public & Tribal Engagement Timeline



EM Environmental Management

safety ♦ performance ♦ cleanup ♦ closure

Idaho Cleanup Project

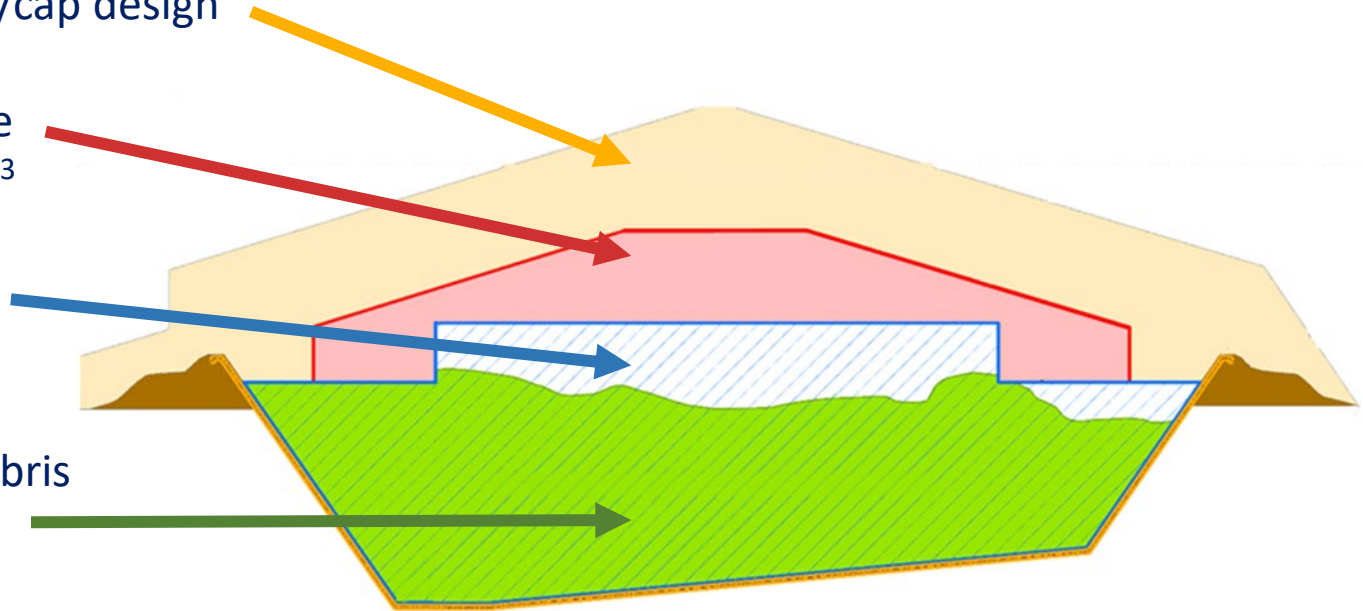
Phase 1 Expansion

- No change in cover/cap design

- Add potential waste capacity $\approx 140,000 \text{ m}^3$

- Remaining disposal capacity $\sim 80,000 \text{ m}^3$

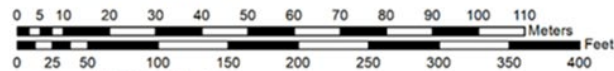
- Placed Soils and Debris Waste $\sim 310,000 \text{ m}^3$



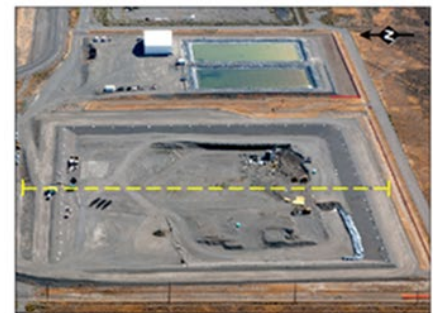
**ICDF Landfill Waste Placement Utilization Profile
(North to South)**

- Existing landfill planned disposal capacity $\approx 390,000 \text{ m}^3$
- Proposed debris waste placement capacity $\approx 140,000 \text{ m}^3$
- Soils and Debris Waste placed as of FY-2019 $\approx 290,000 \text{ m}^3$
- Primary geomembrane liner
- Planned ICDF landfill cover
- Land surface

NOTE: Z-factor has been exaggerated by 4.3 times for illustration purposes.
Vertical datum NGVD-29



GIS Analyst: Dan Mahnami
Date Drawn: 3/15/2021
Path: X:\gis_projects\icdf_maps\Landfill_Utilization_EDP\2020_WPU_EDP\Graphics
File Name: LRI_to_49548_Profile_Scenario_w_Cap_Sep2019-ai_v2.mxd



Profile Cross-section (September 22, 2019)



EM Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

Idaho Cleanup Project

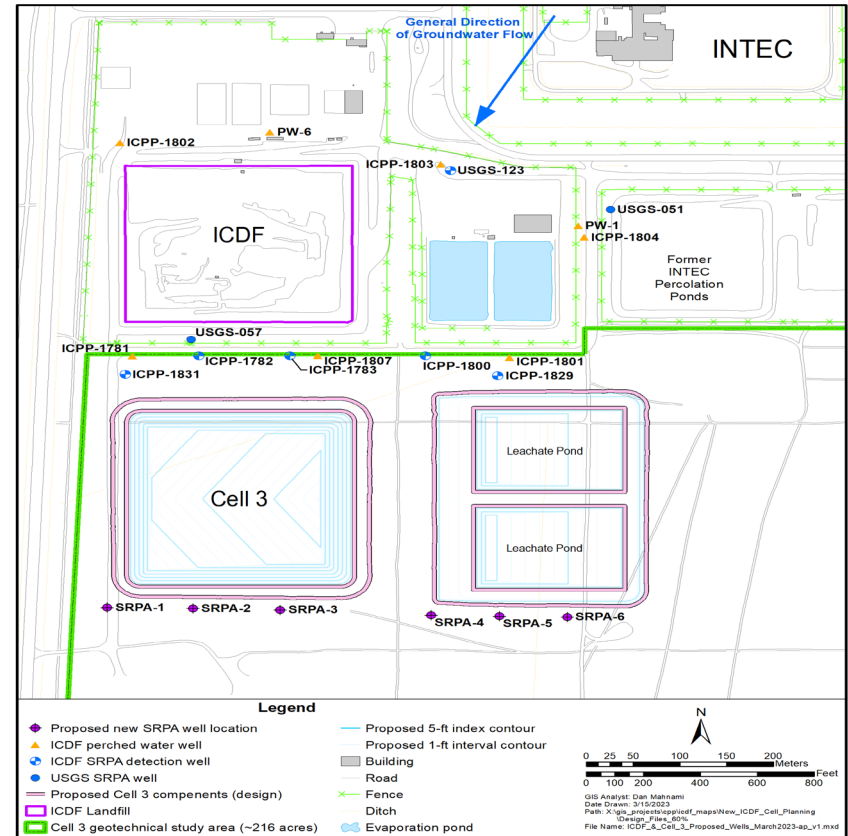
Phase 2 Expansion

- Design
 - Conceptual Design Report (November 2022)
 - 60% Design for Site Preparation (April 2023)
 - 60% Design for Landfill and Evaporation Ponds Construction (June 2023)
 - Remedial Design/Construction Work Plan (RD/CWP) for Landfill and Evaporation Pond Construction (September 2023)
- Construction
 - Site Preparation Activities (August 2023)

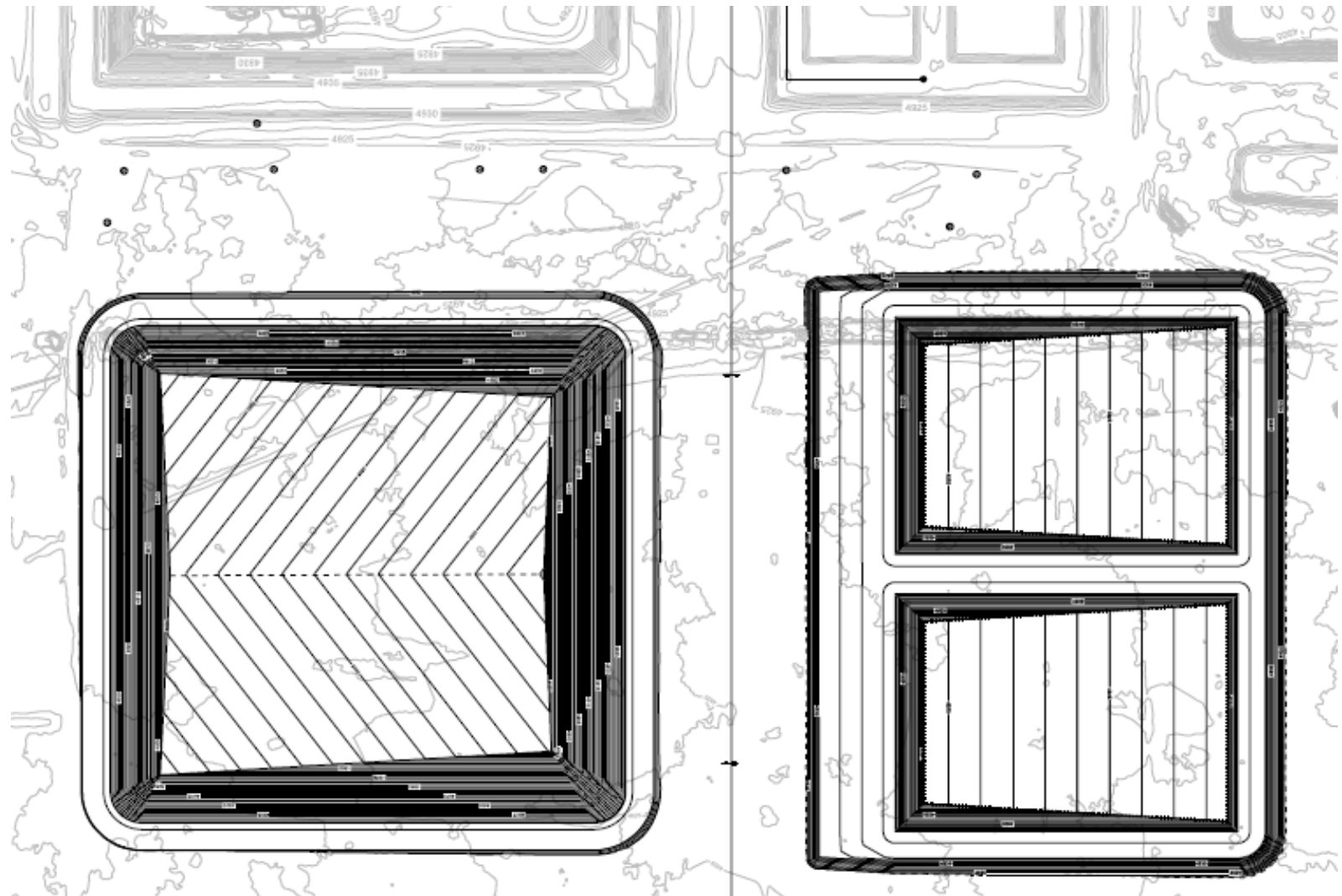


ICDF Cell 3 Design

- Located near existing ICDF facilities (reusing existing infrastructure)
- ICDF Cell 3 will be directly south of Landfill Cells 1&2 (same size as previous and lowered berm height)
- New Evaporation Ponds directly south of existing evaporation ponds (increased size for leachate management)
- All four evaporation ponds will be interconnected for efficient leachate/water management



Orientation of the ICDF Landfill Cell 3 and New Evaporation Ponds



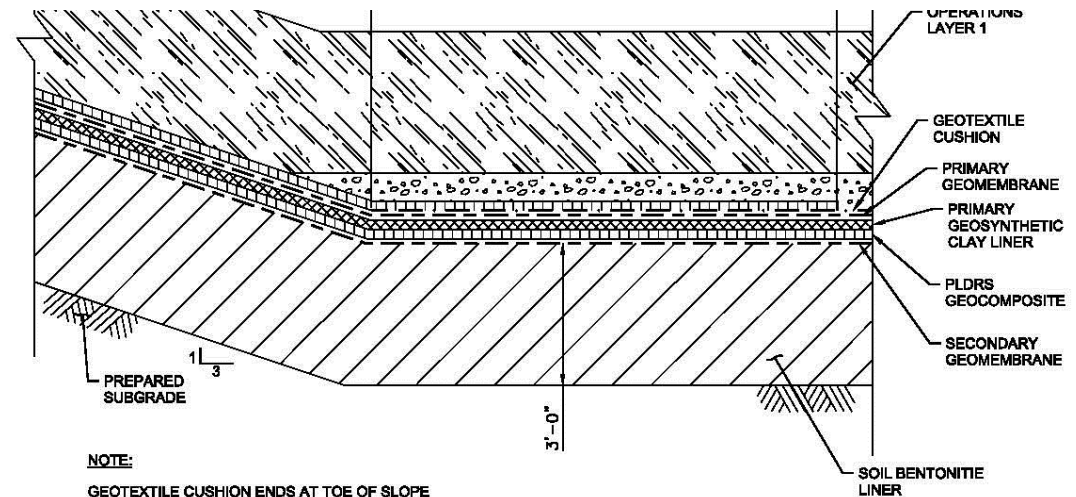
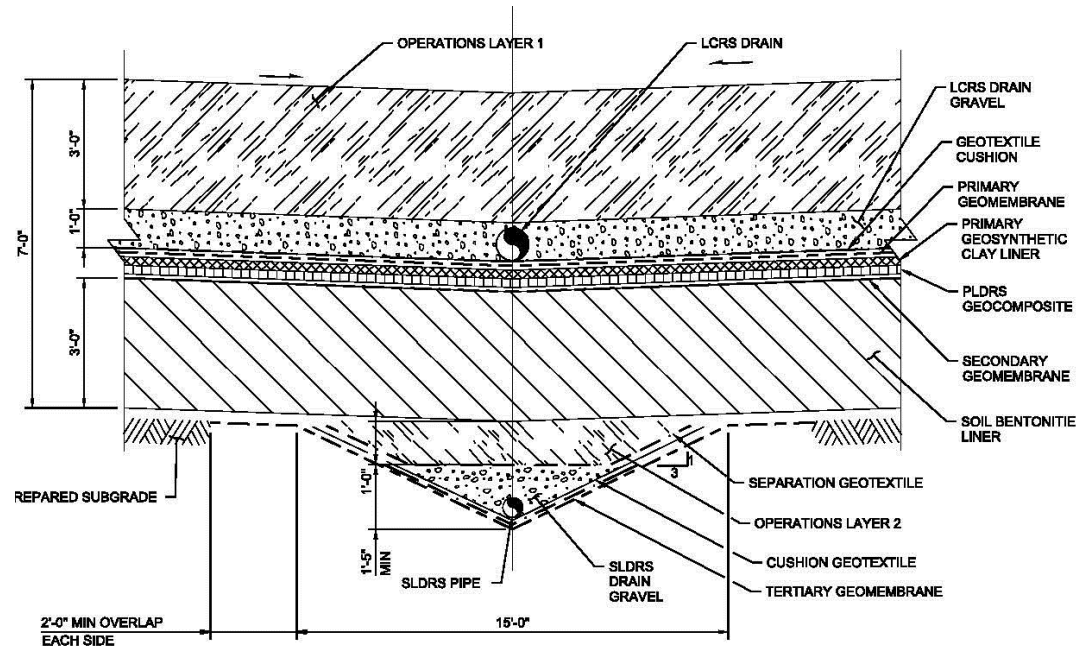
EM Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

Idaho Cleanup Project

Landfill Cell 3 Liner System

- Exceeds Resource Conservation and Recovery Act (RCRA) Subtitle C requirements
 - Additional geomembrane and geosynthetic clay liner materials
 - Secondary Leachate Detection and Recovery System
- Liner System Operates Better than Required
 - Allowable Action Leakage Rate is ~1,700 gallons per day (from LCRS into PLDRS)
 - Actual Leakage has been ~400 gallons per year



EM Environmental Management

safety ♦ performance ♦ cleanup ♦ closure

Idaho Cleanup Project

Questions?

