WELCOME

Modern Landfill & Archaea Energy Tour

May 25, 2023

MODERN

Who We Are

- Family owned & operated
- Fully integrated solid waste management company based out of Lewiston, NY
  - Collections, transfer station, MRF, portable toilets, landfill
- Started in 1964 with two trucks
- Now over 700 employees and 350 trucks
  Operations in WNY and in southern Ontario, Canada

MODERN

Modern Landfill

- Opened in 1983
- Permitted site life through late 2030's
- 232 acres permitted
- ~169 double composite lined acres constructed
  - Includes 44 acres double composite overfill liner
  - MSE berm
  - ~2,700 LF hydraulic barrier wall constructed in 2022
  - 7.4 acre cell to be constructed in 2023
- ~10 acres capped

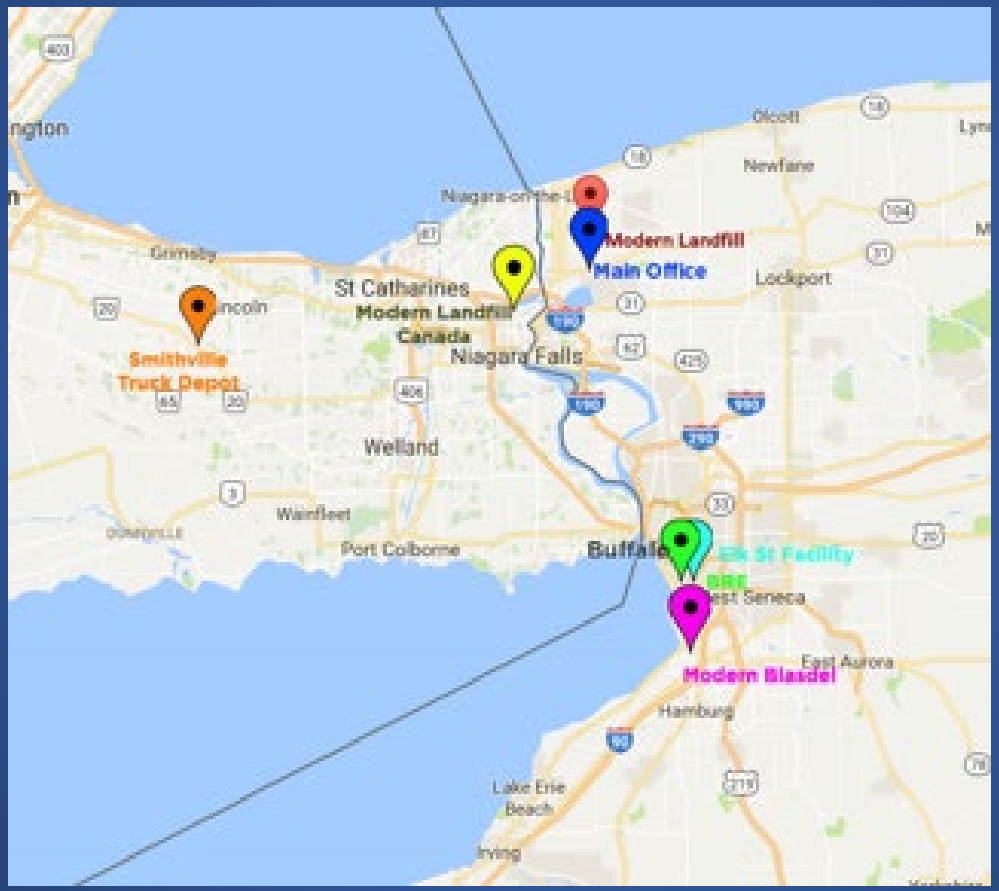
MODERN

Modern Landfill

- Open six days per week (closed on Sundays)
- Accept MSW, non-hazardous industrial wastes, asbestos, C&D debris, contaminated soil, and sludge wastes
- Solidification pits
- MRF
- Residential drop-off

MODERN

Facility Locations & Service Area

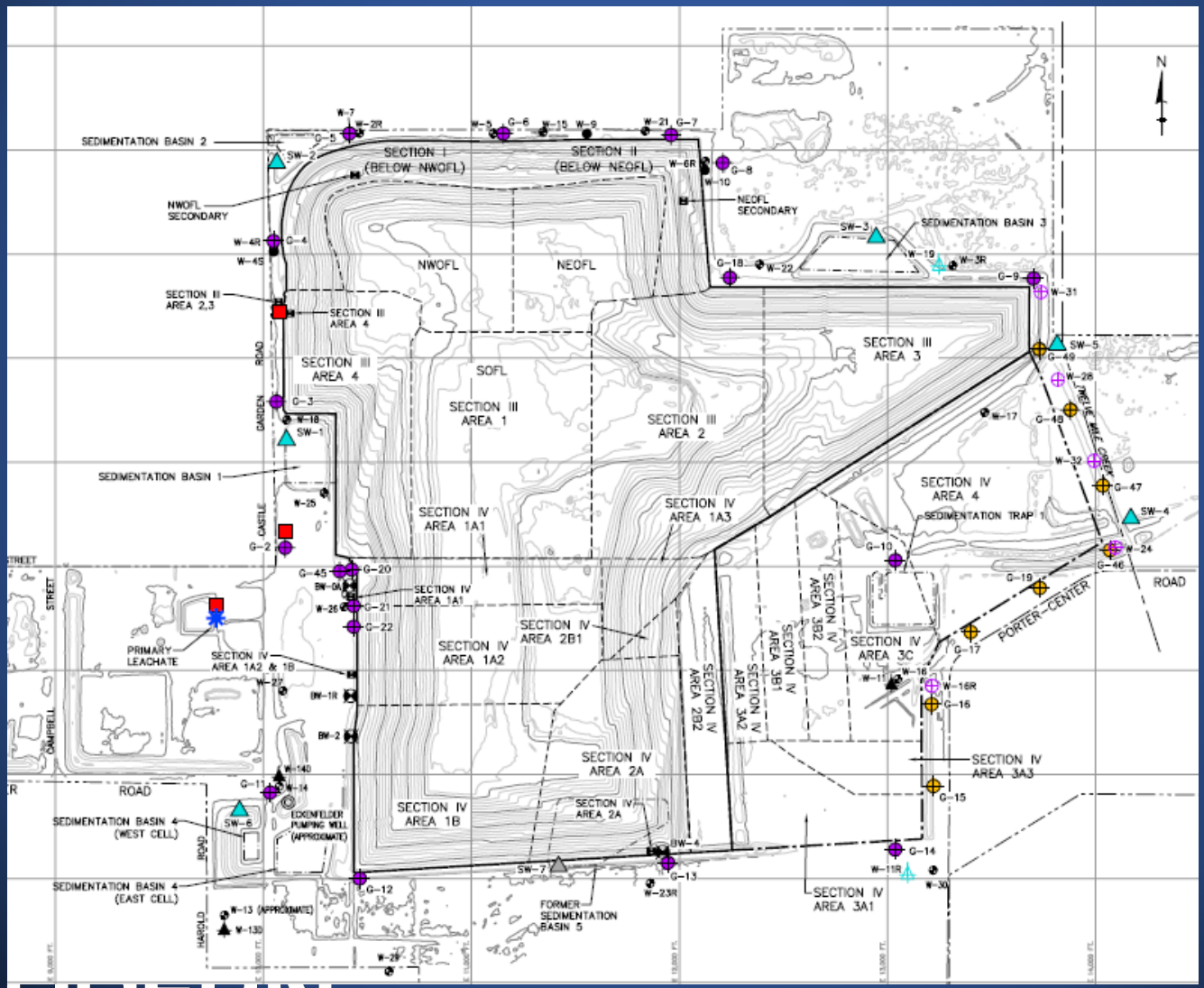


MODERN

Modern Landfill

MODERN

LANDFILL SITE PLAN



MODERN

CONSTRUCTION - 2021

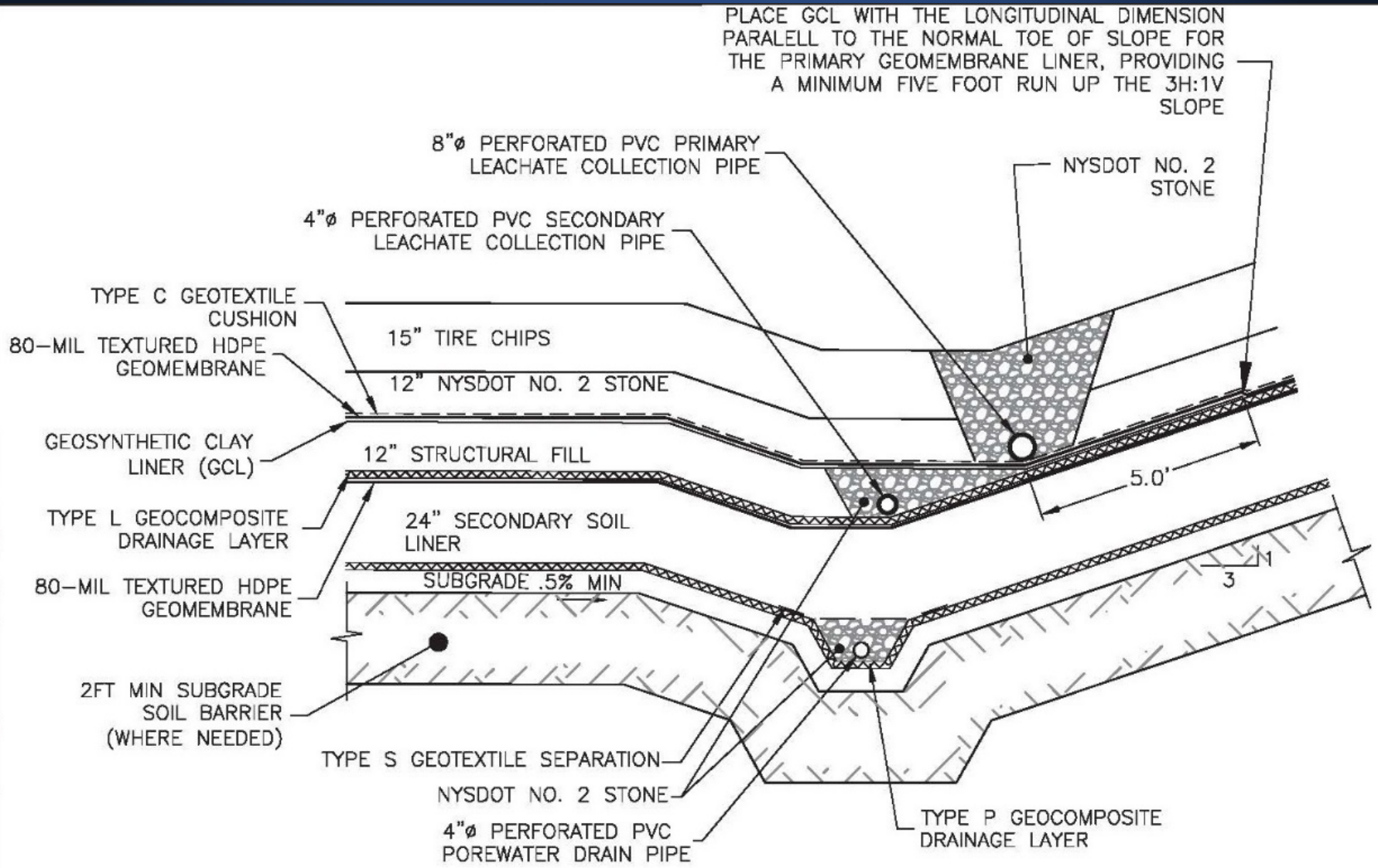
- Section IV Area 2B2 – approx. 6.2 ac cell
- Approx. 250 LF of MSE berm

MODERN

Baseliner construction

- Prepared subgrade
- Porewater collection system
- 24-inch compacted secondary soil liner (clay)
- 80-mil textured HDPE geomembrane
- Secondary leachate collection system
- 12-inch structural fill layer
- Geosynthetic Clay Liner (GCL)
- 80-mil textured HDPE geomembrane
- 16 oz/sy NW cushion geotextile
- Primary drainage layer
  - Stone, TDA

MODERN



DAIGLER ENGINEERING P.C.
.....engineering · science · design.....
1711 GRAND ISLAND BLVD. GRAND ISLAND, NEW YORK 14072

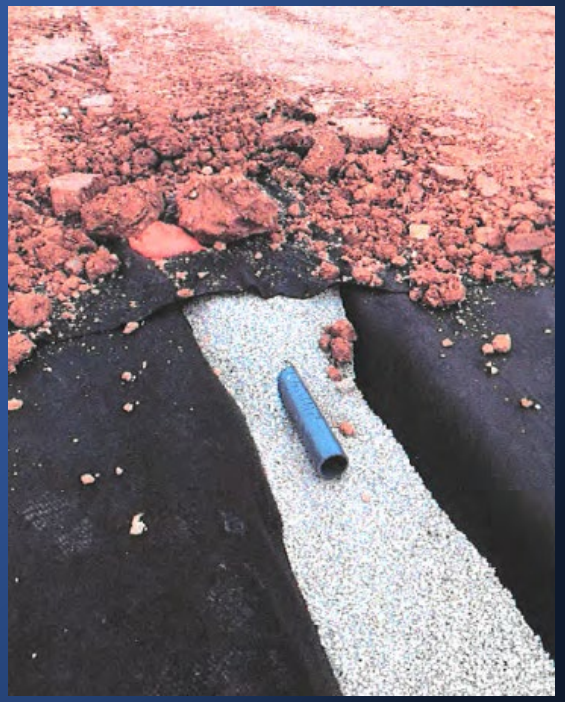
MODERN LANDFILL, INC.		TYPICAL BASELINER DETAIL PROPOSED LANDFILL FOOTPRINT MODIFICATIONS			FIGURE 6-3
SCALE: NOT TO SCALE	REVISION # 0				
August 2008		TOWN OF LEWISTON	NIAGARA COUNTY	NEW YORK	

MODERN

MODERN

Porewater System

- Excavation of trenches
- Installation of porewater geocomposite
- Installation of PVC pipe
- Separator GT



MODERN

Secondary Soil Liner

- Installed in 3 lifts
- Each lift tested:
  - Max. permeability 1x10-7 cm/s
  - Min. 90% max. dry density

MODERN

Secondary Soil Liner

MODERN

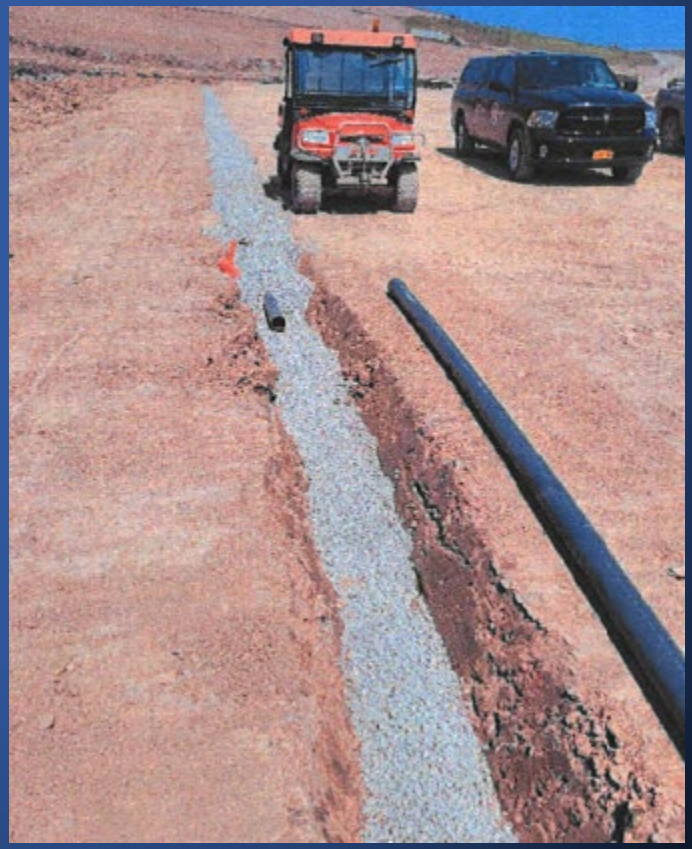
Secondary Geomembrane

- Smooth surface
- Max. particle size of 1 inch

MODERN

Secondary Leachate Collection

- Installation of geocomposite (manually)
- Placement of structural fill
- Installation of PVC pipe



MODERN

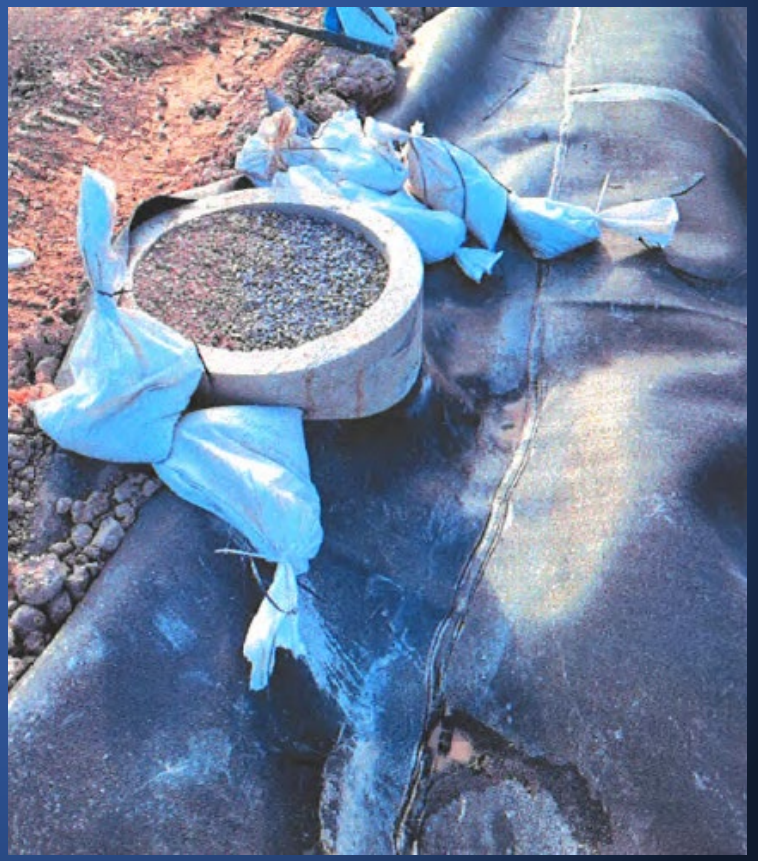
GCL

- Powdered bentonite along seams
- Max. permeability 5x10-9 cm/s
- Needle inspection

MODERN

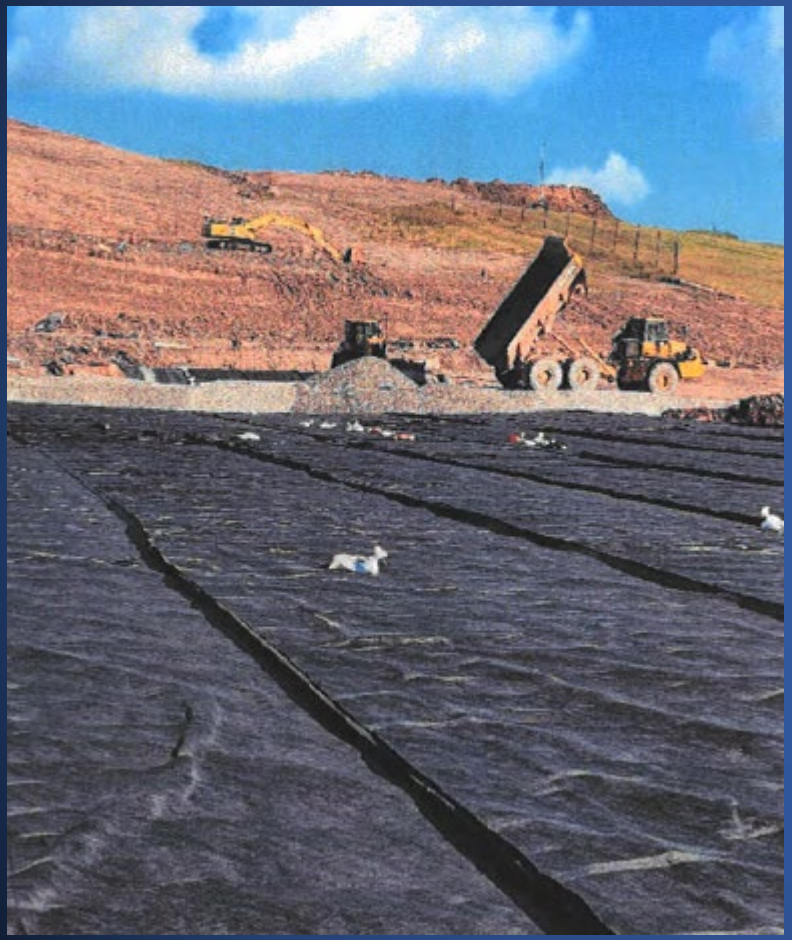
Primary Geomembrane

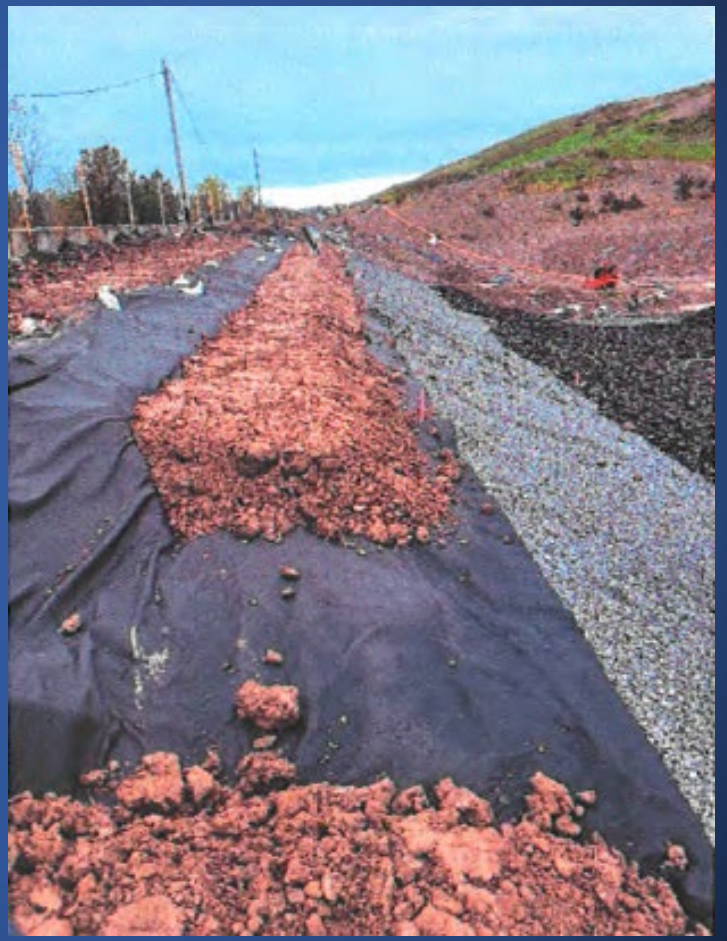
- Fusion and extrusion welding
- Testing and repairs



MODERN

GEOTEXTILE, STONE, TDA





MODERN

MSE Berm Construction

MODERN

MSE Berm Construction

MODERN

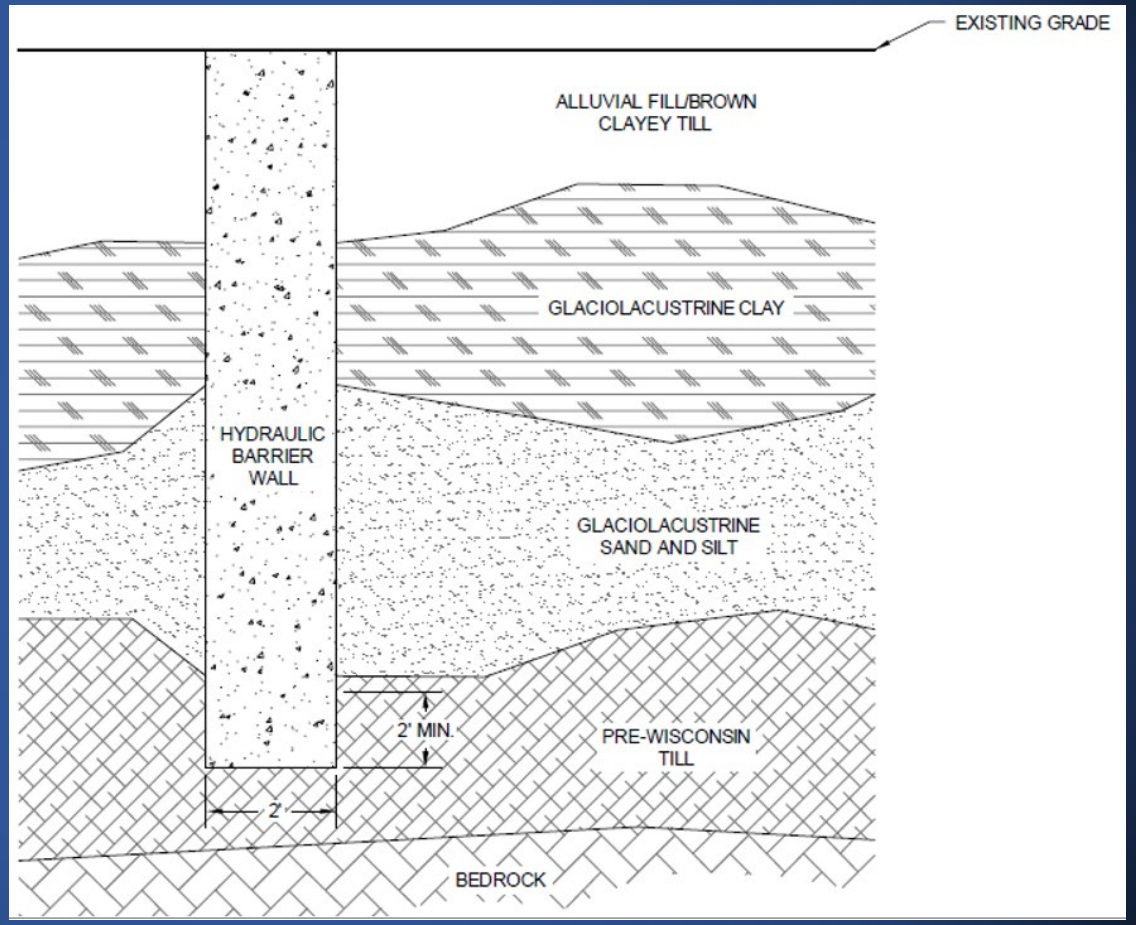
Construction – 2022

- 2,687 LF of Hydraulic Barrier Wall (HBW)
- $1+ million project
  - Water
  - Surveying
  - Working platform
  - Spoils removal, site restoration
  - Stormwater, E&S, dust controls

MODERN

WHY HBW?

- Glaciolacustrine sand and silt layer is transmissive
- With shallow GW table, dewatering efforts may be ineffective in future cells



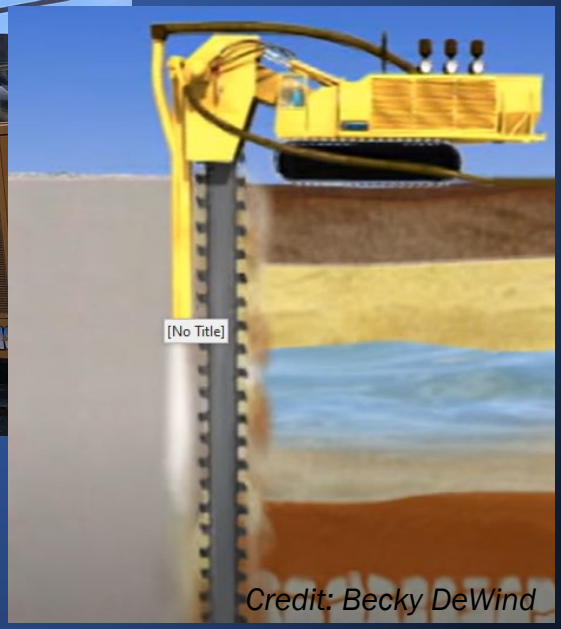
MODERN

Hydraulic Barrier Wall

- Installed by DeWind using One-Pass Trenching System
- Blended in-situ soils with added source water, cement, and bentonite (as needed)
- Max. permeability of 1x10-6 cm/s and compressive strength of 20 psi (at 28 days)
- Approx. 2 ft wide and keyed at least 2 ft into underlying dense till
- Average 1 ft per minute

MODERN

Hydraulic Barrier Wall



Credit: Becky DeWind

MODERN

Hydraulic Barrier Wall

MODERN

QUESTIONS?

MODERN