

# Perry Memorial Conservation Area Range Complex Renovation, Recycling, and Soil Stabilization

Highway 23 Range – Site Characterization



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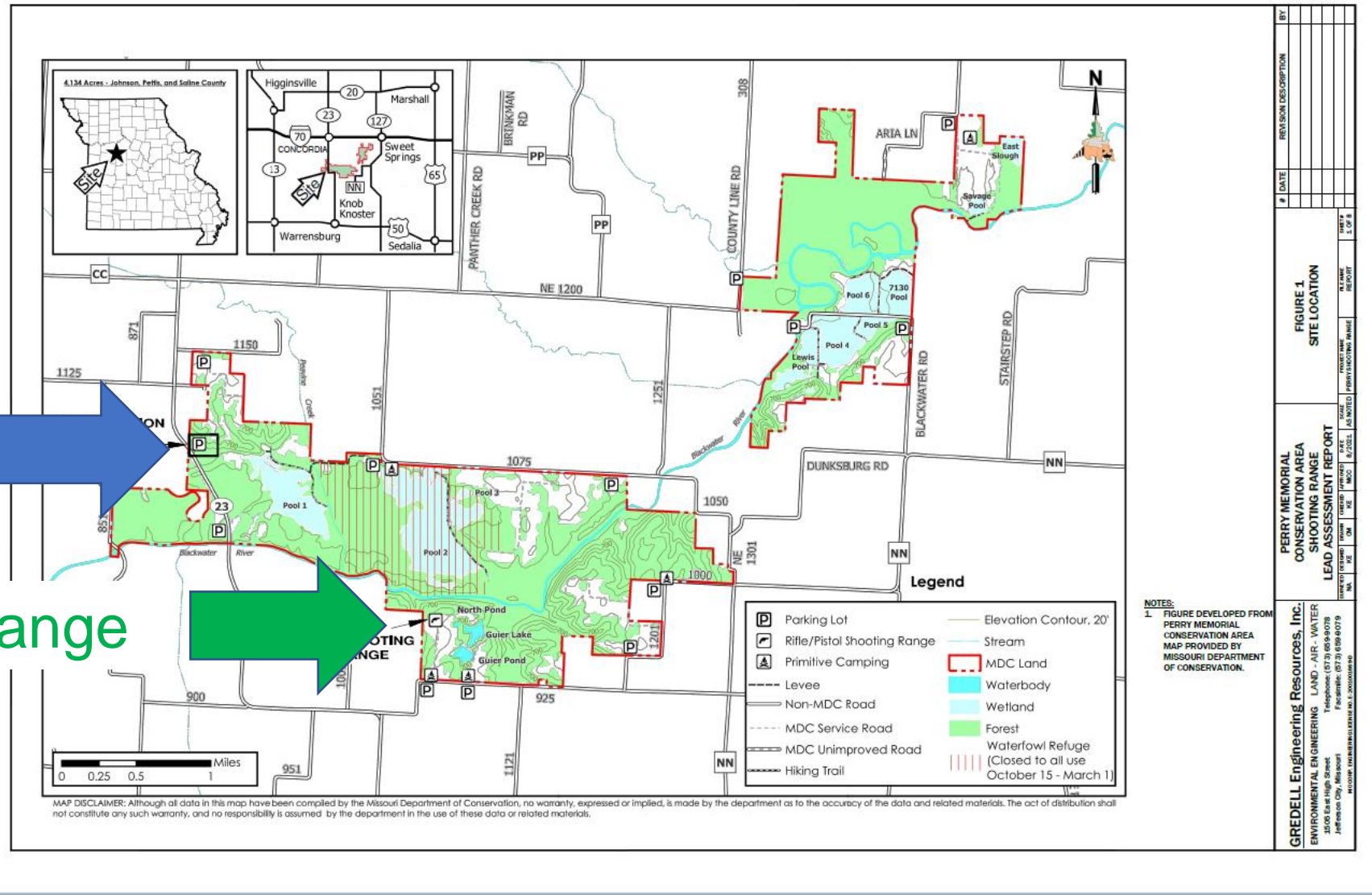
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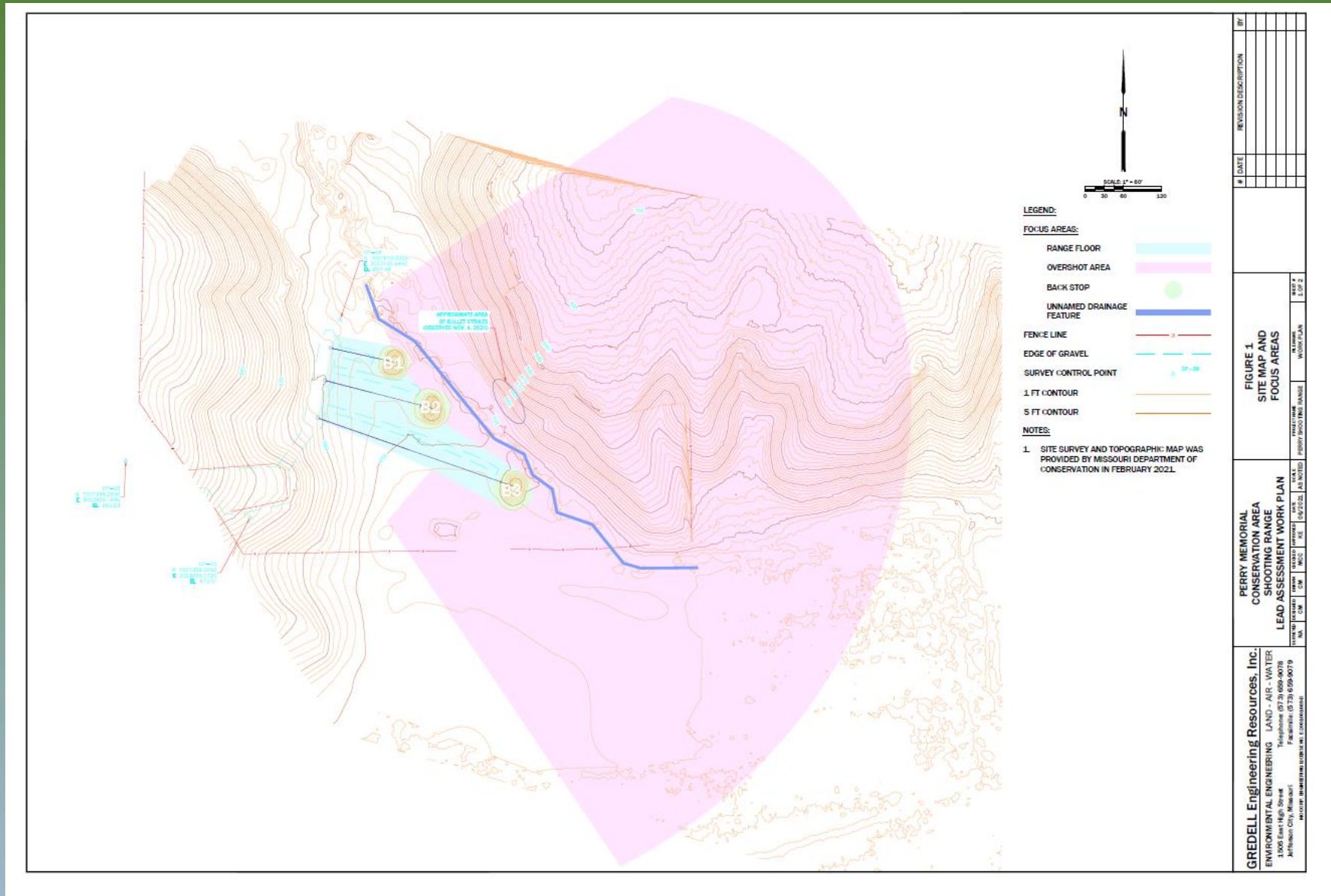
# Site Locations

Highway 23 Range

New Range



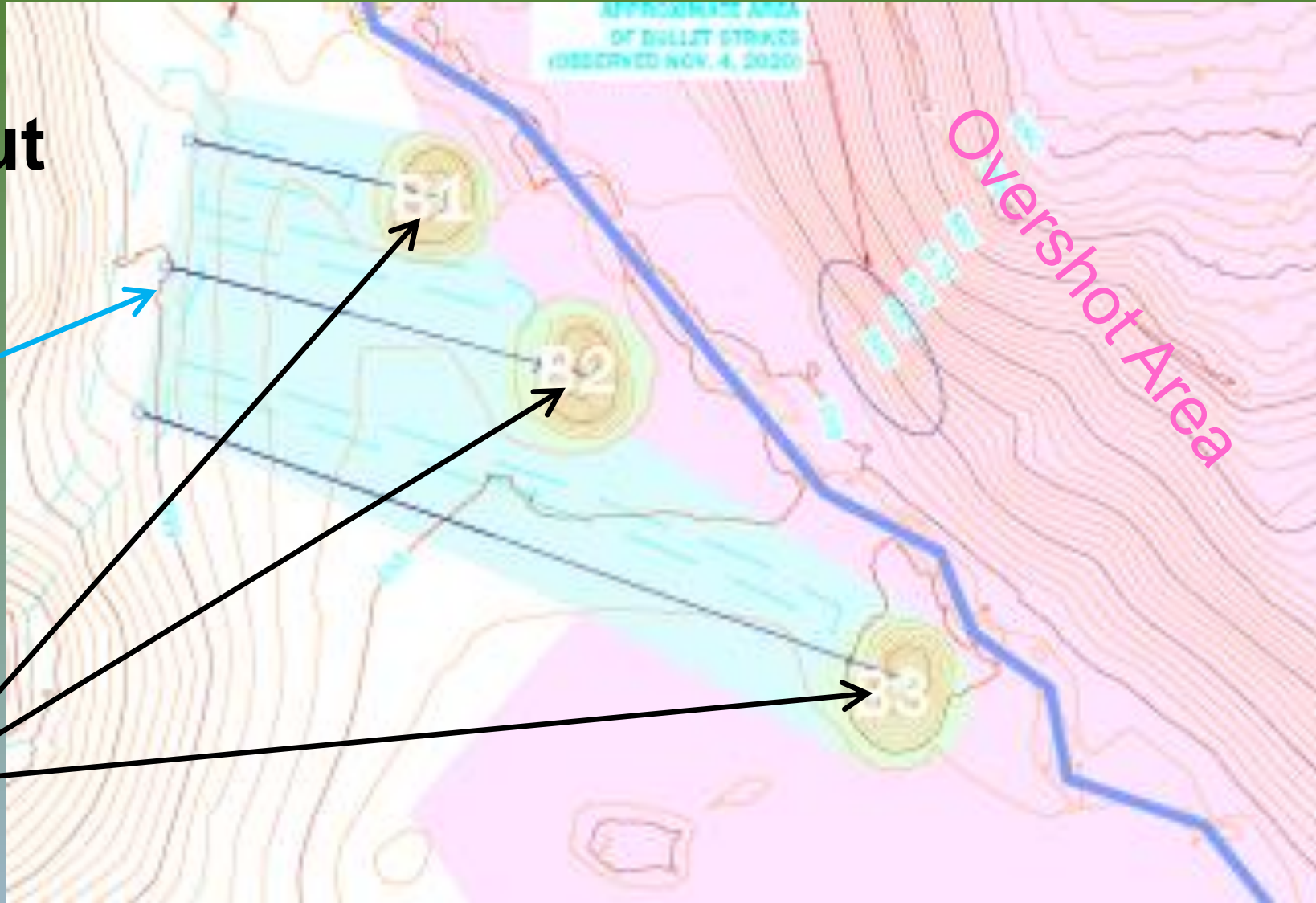
# Hwy 23 Range Layout



# Hwy 23 Range Layout (Zoom)

Range Floor

Backstops





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# Bullet Migration

- Backstop Wear/Erosion
  - Changes Shape
  - Dishes Face
  - Concentrates Bullets



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# Bullet Migration

## - Tumbling

- May Reduce Particle Size

Bullet Impacts

...And Tumbles  
over the Backstop

Shooting  
Position

Backstop



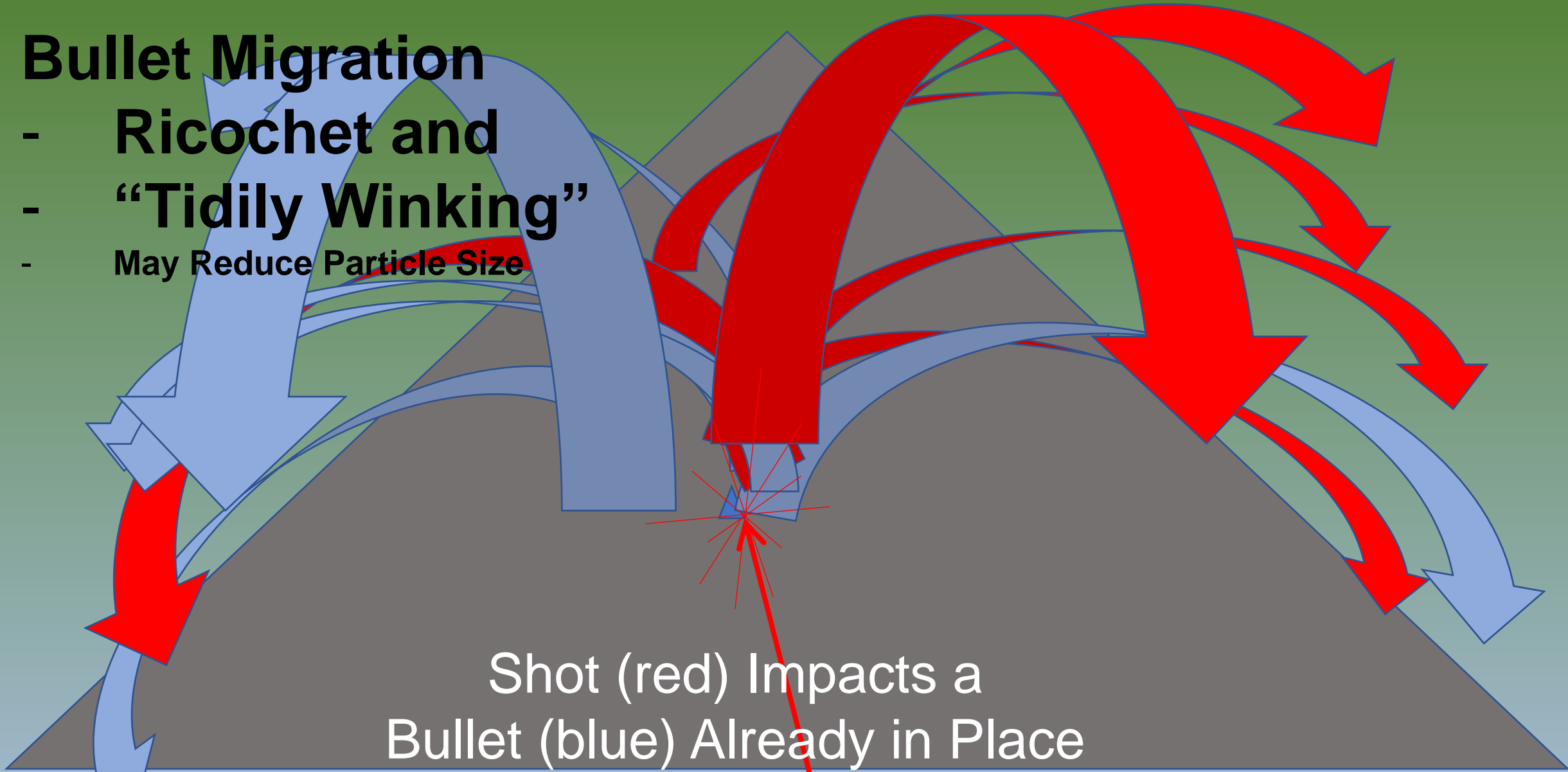
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# Bullet Migration

- Ricochet and
- “Tidily Winking”
- May Reduce Particle Size



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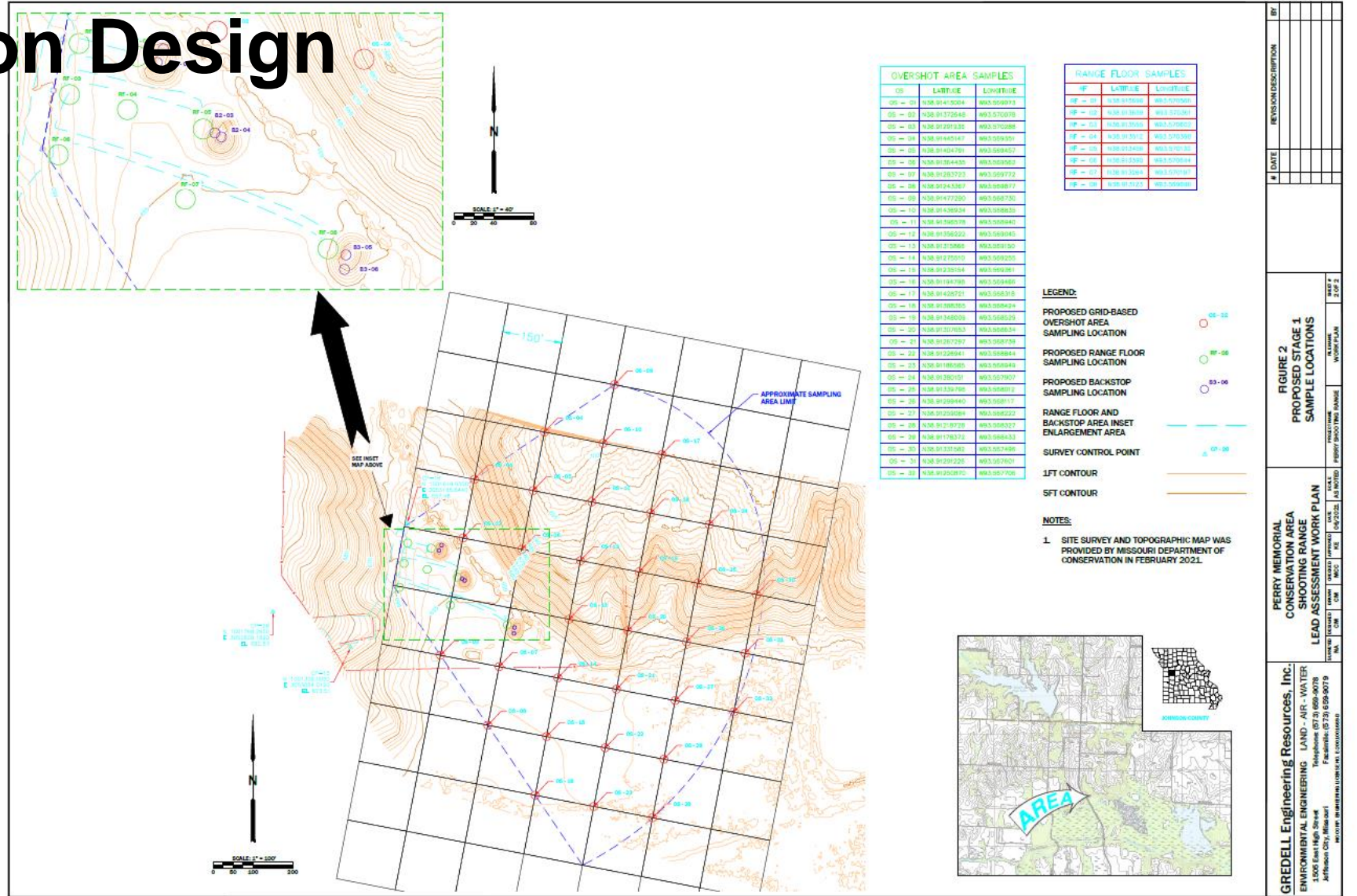
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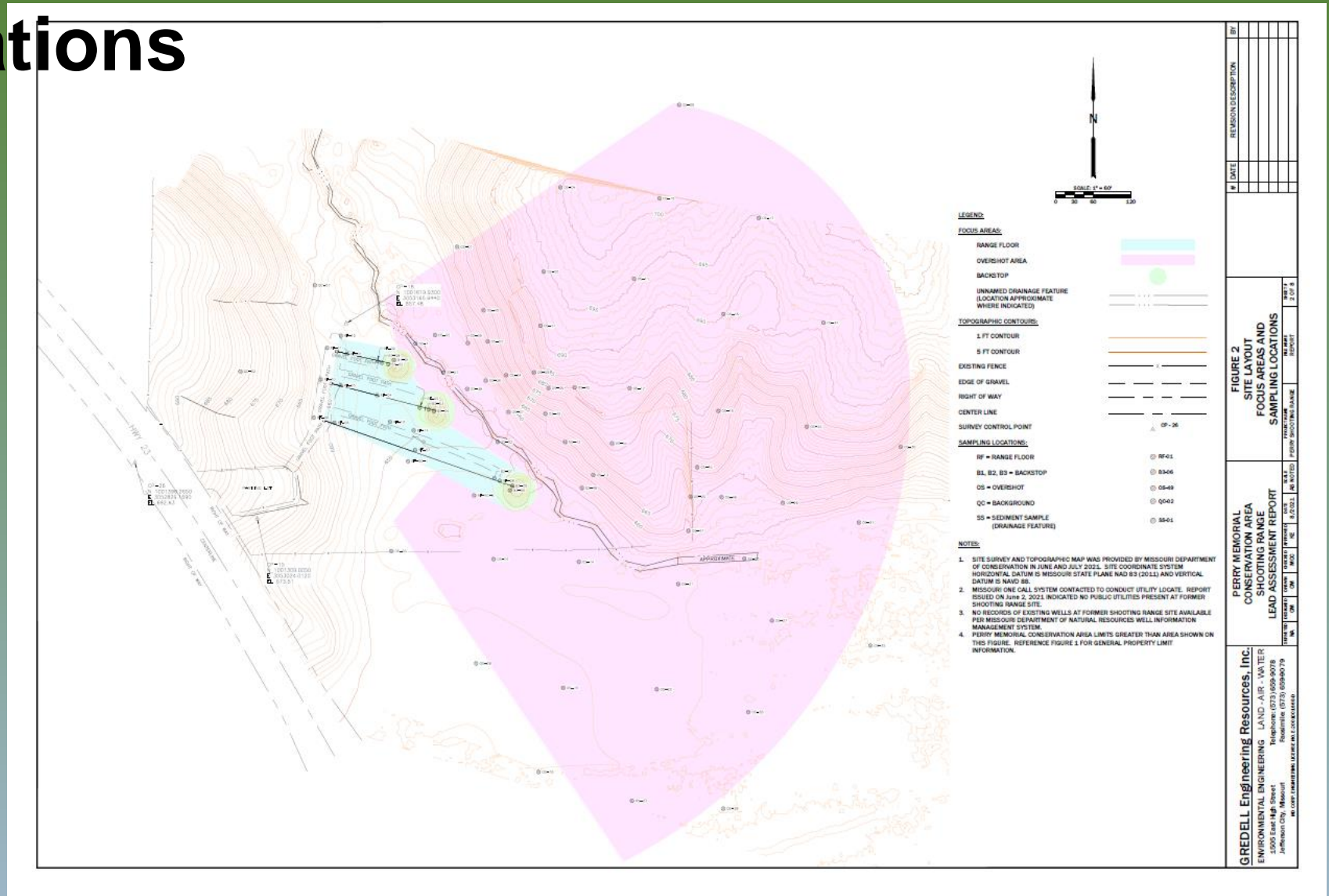
# Characterization Design

- Reconnaissance
- Range Floor
- Backstops
- Overshot/Drainage



# Sampling Locations

- Over 100 samples
- Lead
- Arsenic
- Antimony
- Copper
- Zinc



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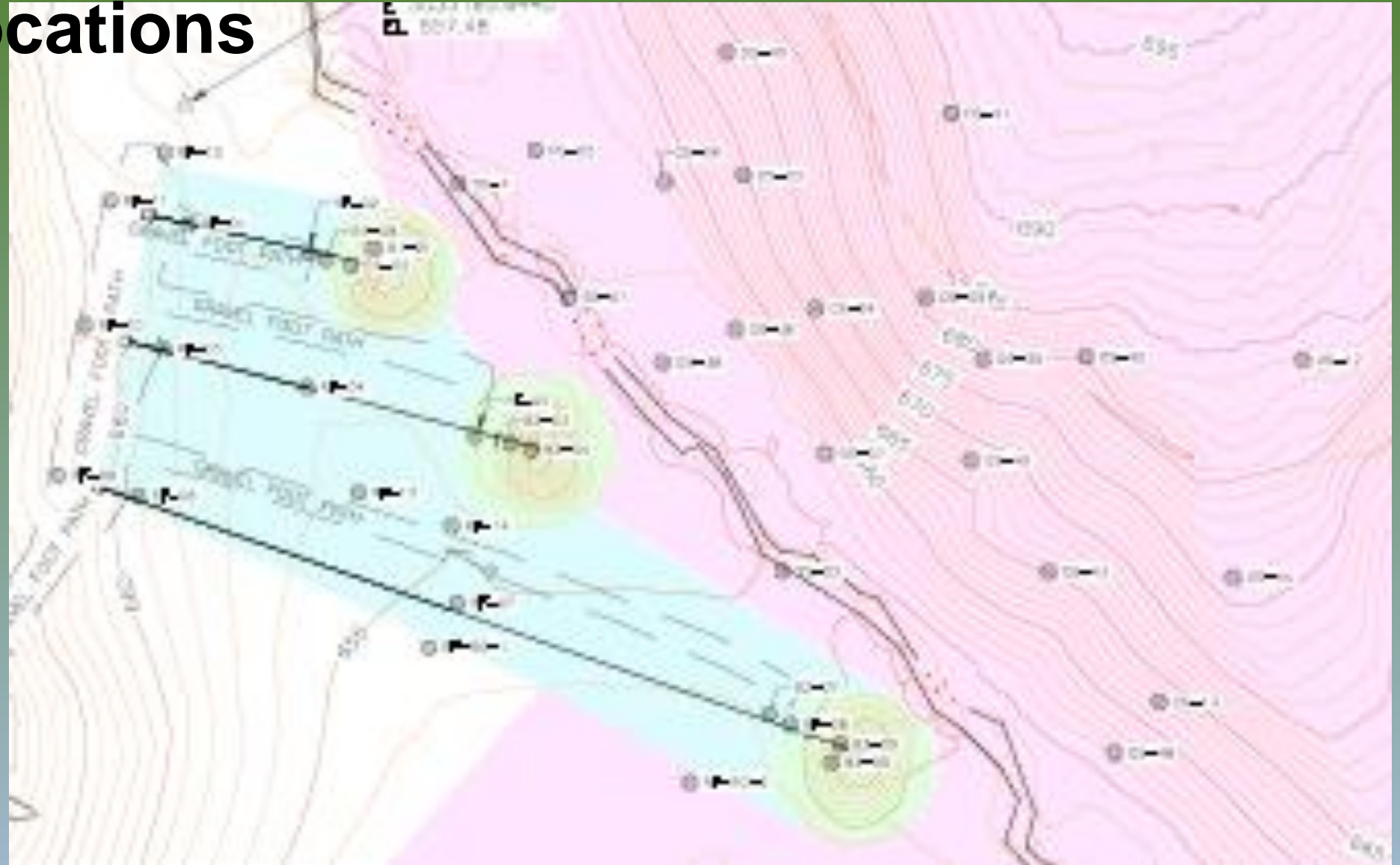
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# Sampling Locations

Zoom to show  
Additional  
Characterization  
Sample Locations

- Range Floor
  - Pads + 15 ft
  - Midpoints
  - Target Holders
  - Drainage Ways
- Backstops
  - Face
  - Apron
  - Core
- Overshot Area
  - Grid
  - Refinement Pts
  - Recon. Pts



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# Sampling Protocol

- Clayey Soils
- Avoid “Smear”
  - Oversized Holes
  - Scrape Sidewalls
  - “Core” Horizontally
- Avoid Carryover
  - Tool Cleaning
  - Equipment Blanks



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# Additional Characterization



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# Additional Characterization

- Bullets in Core of Backstops
- Additional Reclaim Opportunity



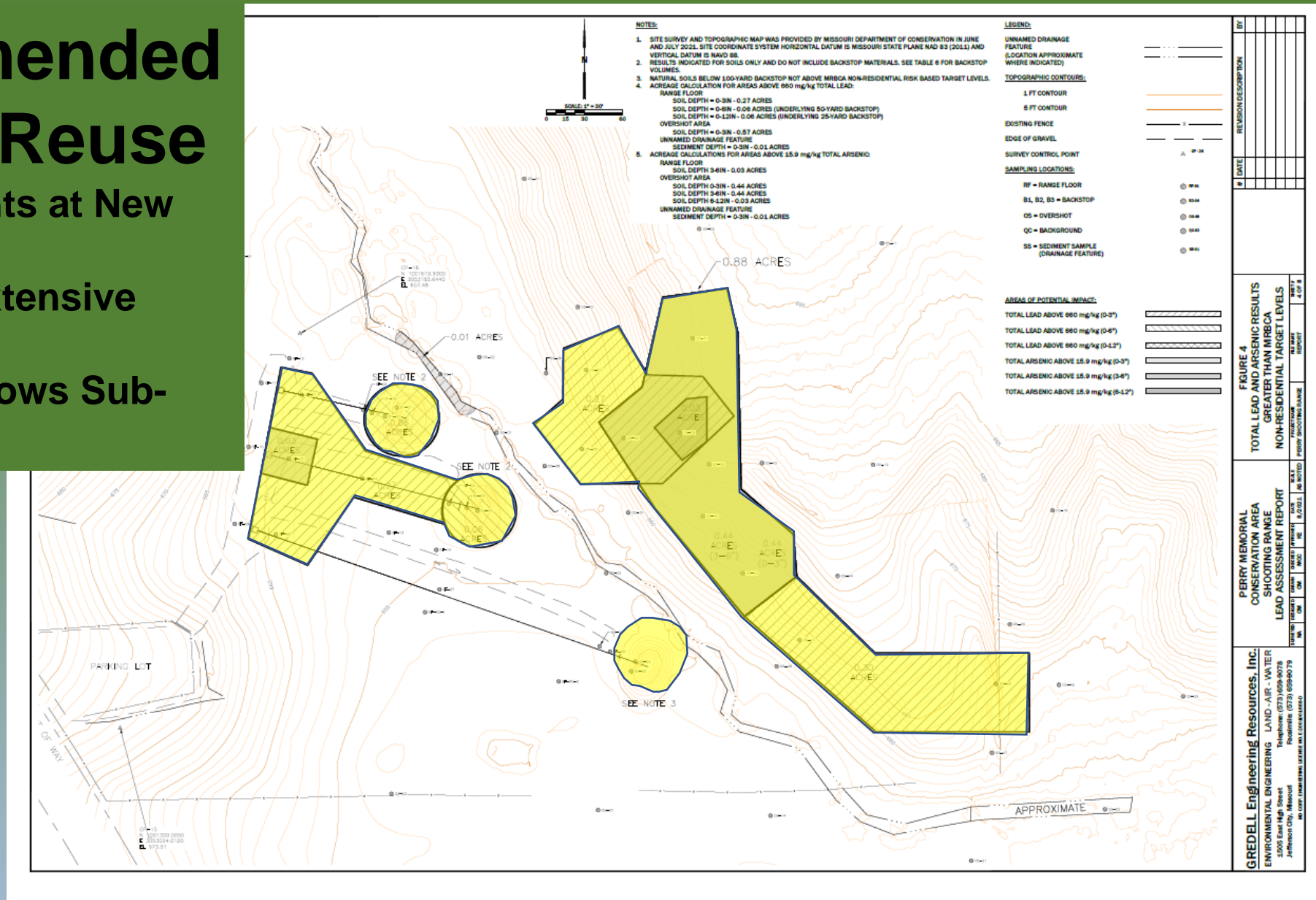
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# Soils Recommended for Beneficial Reuse

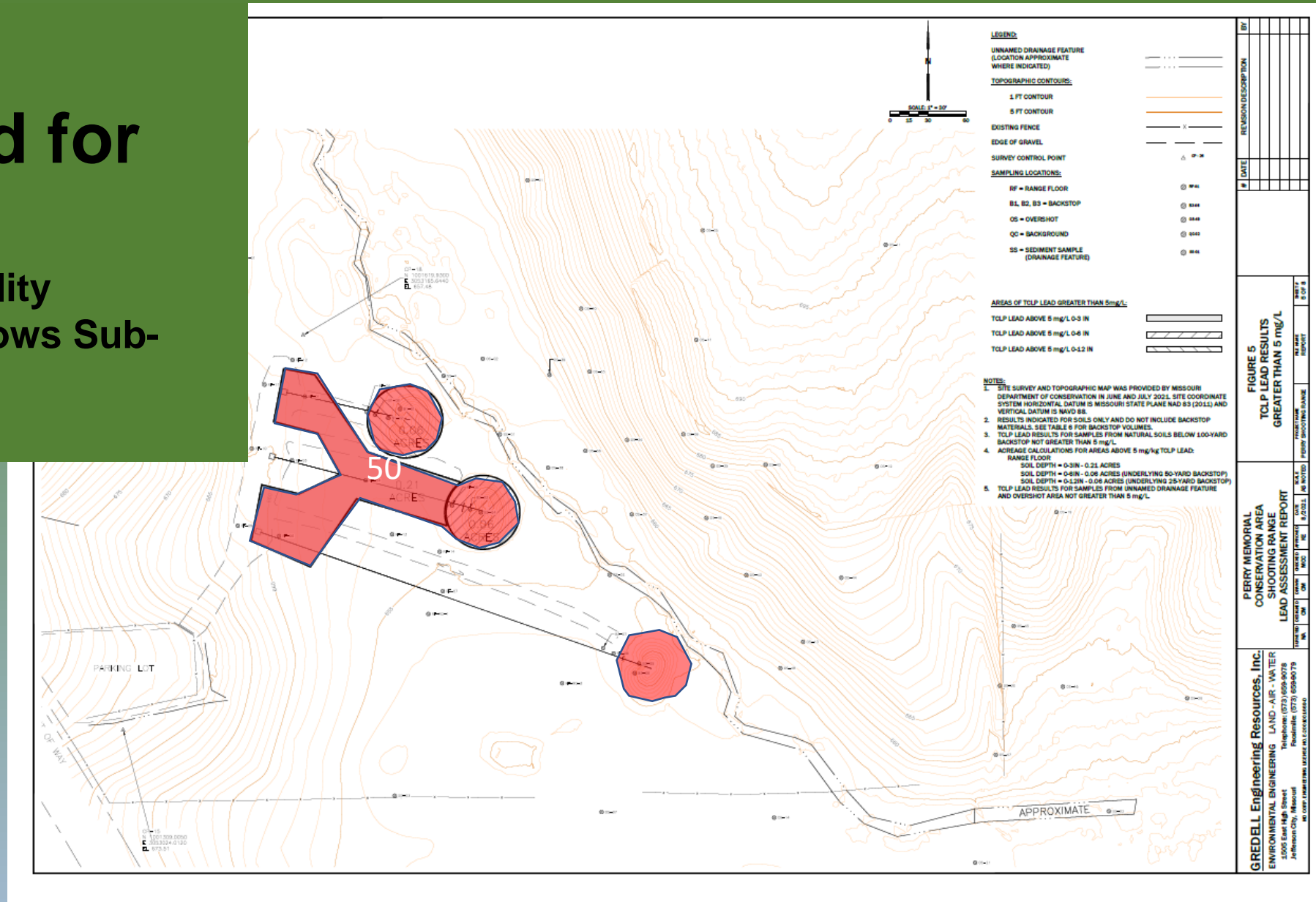
- Backstop Improvements at New Range
  - New Range has Extensive Berms
- (This Graphic Only Shows Sub-Grade soils)





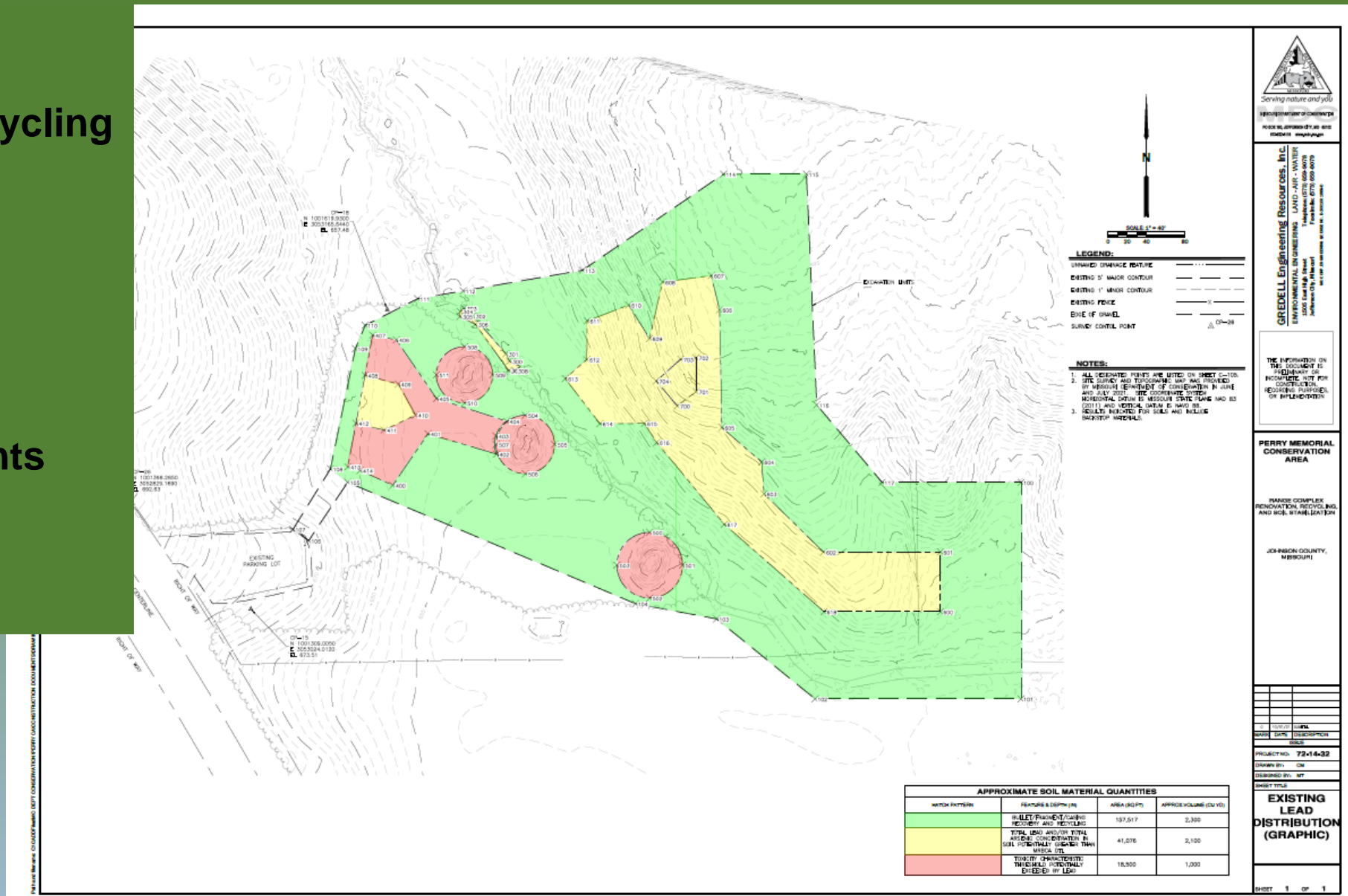
# Reuse Soils Recommended for Treatment

- Reduction of Leachability
- (This Graphic Only Shows Sub-Grade soils)



# Reuse Plan

- Process for Metal Recycling
- Green area
- Yellow areas
- Red areas
- Soil Treatment
- Yellow areas
- Red areas
- Backstop Improvements
- Yellow areas
- Red Areas



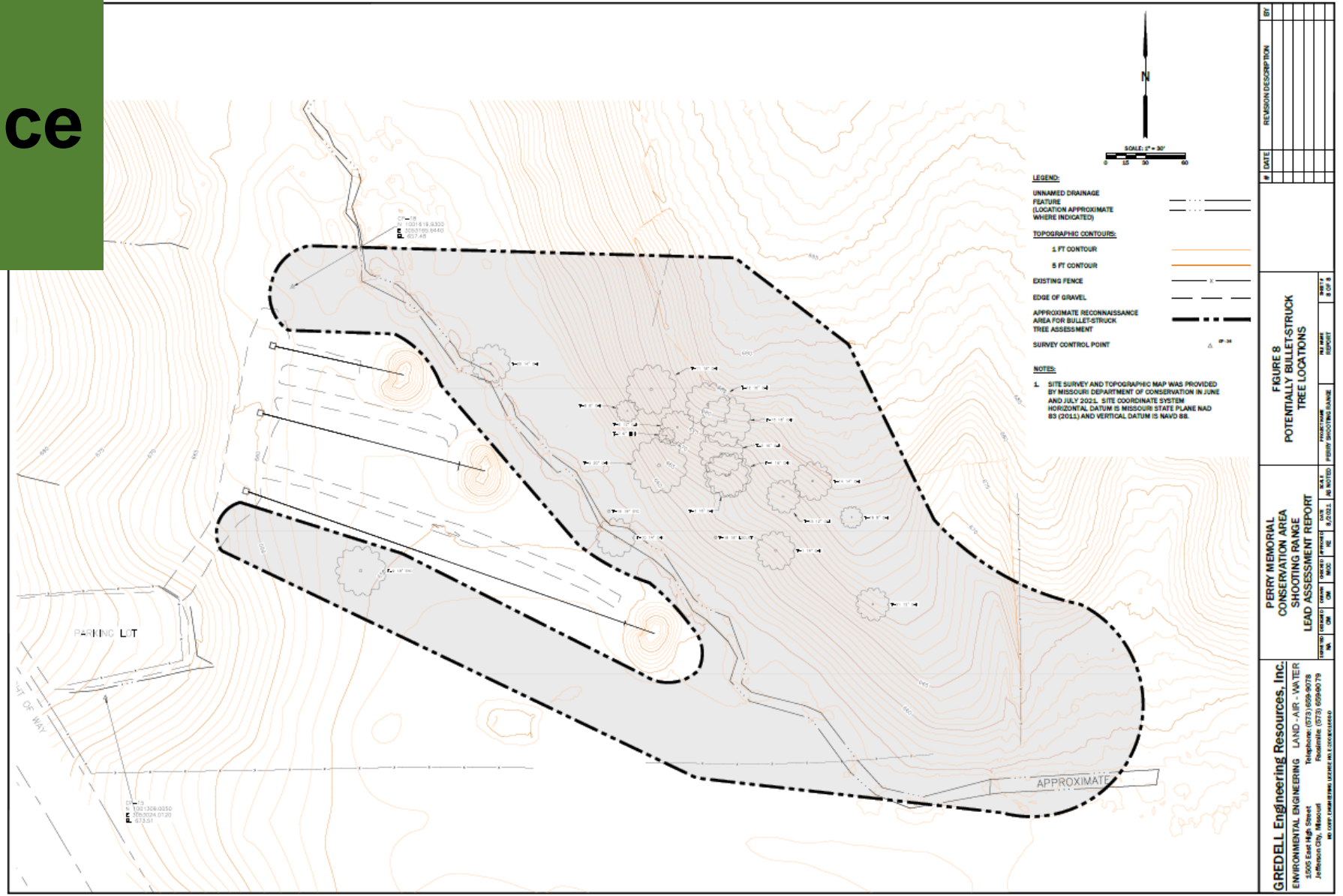
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# Additional Reconnaissance

- Bullet-Struck Trees
- Possibly Contain Lead



#	DATE	REVISION DESCRIPTION	BY

**FIGURE 8**  
**POTENTIALLY BULLET-STUCK**  
**TREE LOCATIONS**

**PERRY MEMORIAL**  
**CONSERVATION AREA**  
**SHOOTING RANGE**  
**LEAD ASSESSMENT REPORT**

DATE TO (PARTIAL) YEAR MONTH DAY TIME (EST) FILE NO. DRAWN BY CHECKED BY DATE OF NOTES 8/2/2021 10:00 AM CM CM 8/2/2021 JLS

**GREDELL Engineering Resources, Inc.**  
ENVIRONMENTAL ENGINEERING LAND - AIR - WATER  
Telephone: (573) 659-9078  
3005 East High Street  
Jefferson City, Missouri 64111  
www.gredell.com License No. 12-00000450



**Front**



**Side**



**Rear**



Ken Ewers, R.G.  
Project Manager, Environmental Geologist  
**GREDELL** Engineering Resources, Inc.

573-659-9078

[kene@ger-inc.biz](mailto:kene@ger-inc.biz)

[www.ger-inc.biz](http://www.ger-inc.biz)



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