

AFTER-ACTION REPORT

FOR THE
DECONTAMINATION AND DEMOLITION OF GROUP I, II, III, IV BUILDINGS, TUNNELS,
FOUNDATIONS and ASSOCIATED DRAINAGE IN
MINE FILL AREAS A AND B



DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
DETACHMENT CRANE
NAVAL SUPPORT ACTIVITY B#2516
300 HIGHWAY 361
CRANE, INDIANA 47522
CONTRACT N40083-05-D-4015
TASK ORDER # FC02

Prepared for:
Naval Support Activity Crane
300 Highway 361
Crane, IN 47522

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Demolition/Decontamination of Selected Buildings in Mine Fill A and B

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Demolition/Decontamination of Selected Buildings in Mine Fill A and B

LIST OF ACRONYMS

ABG	Ammunition Burning Ground
ACM	Asbestos Containing Material
DDESB	Department of Defense Explosive Safety Board
ESS	Explosive Safety Submission
EZs	Exclusion Zones
HE	High Explosive
IDEM	Indiana Department of Environmental Management
Lakeshore/TolTest JV	Lakeshore Engineering Services/TolTest JV
MEC	Munitions and Explosives of Concern
MPPEH	Material Potentially Presenting an Explosive Hazard
NAVFAC	Naval Facilities Engineering Command
NOSSA	Naval Ordnance Safety and Security Activity
NSA	Naval Support Activity
PCB	Polychlorinated Biphenyl
SUXOS	Senior UXO Supervisor
TNT	Trinitrotoluene
UXO	Unexploded Ordnance
UXOQA	Unexploded Ordnance Quality Assurance
WWII	World War II

Demolition/Decontamination of Selected Buildings in Mine Fill A and B

1.0 Descriptions of Mine Fill A and B

Cast High Explosives (HE) loading facilities located in plants Mine Fill A (approximately 44 acres) and Mine Fill B (approximately 55 acres) on the 64,000 acre facility (NSA Crane) were constructed during World War II (WWII) and were used extensively until the middle 1970's when demand for cast explosive items was such that the need for these plants, as originally used, no longer existed. See the maps in **Appendix A** for the former building locations.

2.0 Request to Cancel EZs

Request that the exclusion zones approved in the ESS be cancelled.

3.0 Summary of MEC or MPPEH Found

As documented in this report, a total of approximately 104 pounds of TNT flake (MEC) was recovered during this project and removed by the assigned UXO Technicians using approved methods. All explosive material was turned over to the base for disposal at either the onsite Burning Ground or the Demolition Site. There was also approximately 15 pounds of metal powder contaminated with or integrated with TNT (MPPEH), which was removed and turned over to the base for disposal. The total amount found was approximately 119 pounds of MEC and MPPEH material. Maps depicting the individual finds are summarized in **Appendix A**.

4.0 Discussion of the Removal Action Methods and Technology

In July 2006, a contract (N40083-05-D-4015 FC02) was initiated to demolish 30 specific buildings (Group I: 169D, 169E, 2512, 2514 and 2515; Group II: 159, 162, 163, 164, 168, 2174, 2175, 2176, 2179, 2193, 2715 and 3036; Group III: 161, 173, 2171, 2502, and 2503; Group IV: 157, 158, 166, 167, 171, 172, 2500, and 2501) and connecting Tunnels 157/158, 166/167, 2500/166, 171/172 and 2501/171. As part of that contract an Explosive Safety Submission (ESS) was prepared and submitted and then revised in 2007 and again in 2008, 2009 and 2010 to meet new regulatory requirements. NOSSA and the DDESB approved the original and subsequent revisions. Field work was initiated in June of 2008 and followed a sequence spelled out in the Work Plan and approved in the ESS starting with removal of hazardous materials including asbestos containing materials (ACM), and lead based paint, and other materials identified prior to demolition. Other than the Group I buildings that had no explosive contamination potential, each building was visually inspected by the Senior Unexploded Ordnance Supervisor (SUXOS) and the Unexploded Ordnance Quality Assurance (UXOQA) Technician and tested for explosive contamination using Expray Kits as needed.

Demolition/Decontamination of Selected Buildings in Mine Fill A and B

4.1 Decontamination Certification and Demolition Activities

The following is the general operational sequence conducted for execution of this Decontamination/Demolition project:

- Building inspection and verification
- Removal of hazardous items of environmental concern to enhance safety including, mercury switches, PCB light ballasts and fluorescent light bulbs
- Asbestos abatement
- Building decontamination
- Explosive and explosive contaminated components removal
- Demolition and removal of walls, structural steel, and foundations/drains
- Site Restoration

Field operations were conducted from June 2008 through December 2010.

4.1.1 *Building Inspection and Verification*

A detailed analysis for explosive hazards was conducted for every building. Prior to initiating any building demolition activities, the UXO personnel conducted building walkthroughs to confirm existing conditions, and inspected wall, floor slab, and structural steel surfaces for explosives contamination and other potential explosive hazards. As needed, building surfaces were screened using Expray Test Kits to determine if explosive residue was present. Wall and floor penetrations, openings/cavities and large cracks were inspected to determine if accumulated explosives were present.

4.1.2 *Removal of Hazardous Items*

Dry paint analysis was previously done by contractors for NAVFAC and determined to be lead based paint. The appropriate disposal method was specified in the contract and included scraping surfaces to remove loose chips and sweeping/bagging of the chips before sending the material off-site to an approved disposal facility. Other hazardous items of environmental concern including PCB light ballasts and mercury containing fluorescent lights were removed from all buildings prior to demolition and recycled. Removal of these items was performed in conjunction with the asbestos removal operations described in Section 4.1.3 below.

4.1.3 *Asbestos Abatement*

Asbestos containing material (ACM) removal operations took place from June 2008 to December 14, 2009. ACM was removed from all buildings by TolTest Licensed asbestos laborers and supervisors prior to initiating building demolition and removal operations. Each sheet of asbestos was visually inspected for explosives prior to removal--none of the sheets were found to be contaminated with explosives.

Demolition/Decontamination of Selected Buildings in Mine Fill A and B

Prior to initiating the asbestos removal operations, TolTest submitted a 10 day notification of asbestos removal and demolition operations. Personal air monitoring was conducted throughout the asbestos removal operations. ACM was disposed of on-site in accordance with federal, state, and local rules, laws, and regulations through December 2008 when the on-site landfill was closed. The remaining ACM was shipped to Republic Services (March 16, 2009 to December 14, 2009 when AMC operations were completed), which is a certified Subtitle D landfill facility in the State of Indiana.

4.1.4 Building Decontamination

UXO personnel visually inspected the buildings before the project began and again as part of the daily building inspection and verification process described in Section 4.1.1. Expray Testing was conducted in all buildings in Mine Fill A and B as needed to check for explosive contamination. During building demolition, a visual inspection and Expray tests (as needed) were conducted on steel, wood and/or concrete/brick materials in roll off boxes and/or dump trucks prior to these loads leaving NSA Crane and documented in the Daily Reports. There were no areas in the listed buildings that were not inspected, cleared and properly disposed of, leaving the building debris and sites clear of all explosive residues.

4.1.5 Explosive Treatment

Following agreement with the Indiana Department of Environmental Management (IDEM) the ESS was modified to eliminate thermal burning and thermal convection of the contaminated buildings in Group IV, and a program of demolition and inspection of rubble and components and equipment was implemented. This modification to the ESS was submitted to NOSSA and the DDESB and approved. Any material or equipment suspected of being explosive contaminated was sent to the ABG for flashing.

4.1.6 Removal of Foundations, Footings and Floor Drains/Lines

Once the surface debris was removed from each building demolition site, the next phase could begin. Following removal of any remaining contamination by inspection or excavation, the foundations and footings for each building were removed using a shielded excavator. All floor drains were removed to the first manhole beyond the foundation or least 25 feet. Upon removal, all concrete was visually inspected and documented on the appropriate DD Form 2271's prior to final disposal. All cleared concrete floor slabs and foundations were placed in an approved onsite clean hard fill area, located within the confines of either Mine Fill A or Mine Fill B respectively. Any concrete, floor drains or pipe deemed to be explosive contaminated by visual inspection were documented on the Explosive Contaminated DD Form 2271's and shipped to the ABG for flashing.

Demolition/Decontamination of Selected Buildings in Mine Fill A and B

4.1.7 Site Restoration

Upon completion of the demolition activities, all disturbed areas were re-graded to ensure positive drainage, and seeded. Re-grading was performed in a manner to allow for unimpeded mowing and ground maintenance. A site walkthrough was completed with the Contracting Officers Representative to identify and remove any miscellaneous debris. No land use controls were implemented as a result of these actions. These two sites are to remain active parts of NSA Crane and do not require long-term management, maintenance, monitoring or record-keeping as a result of these actions. There were no permanent EZs or other site approvals established as a result of these actions. Final site restoration (grading and seeding) operations were completed at the sites in March 2011, however further work may be required to ensure that proper ground cover is established.

5.0 Summary of the QC and QA Reports

Daily QC/QA inspections were completed by the contractors UXOQA assigned individual to verify that all operations were conducted, compliant with the approved Work Plan and ESS and any other applicable directives. The discovered deficiencies were corrected immediately so that operations could continue in full compliance with the Work Plan, Explosive Safety Plan and other directives to provide a safe work environment and insure that all aspects of the work were completed in full compliance with directives.

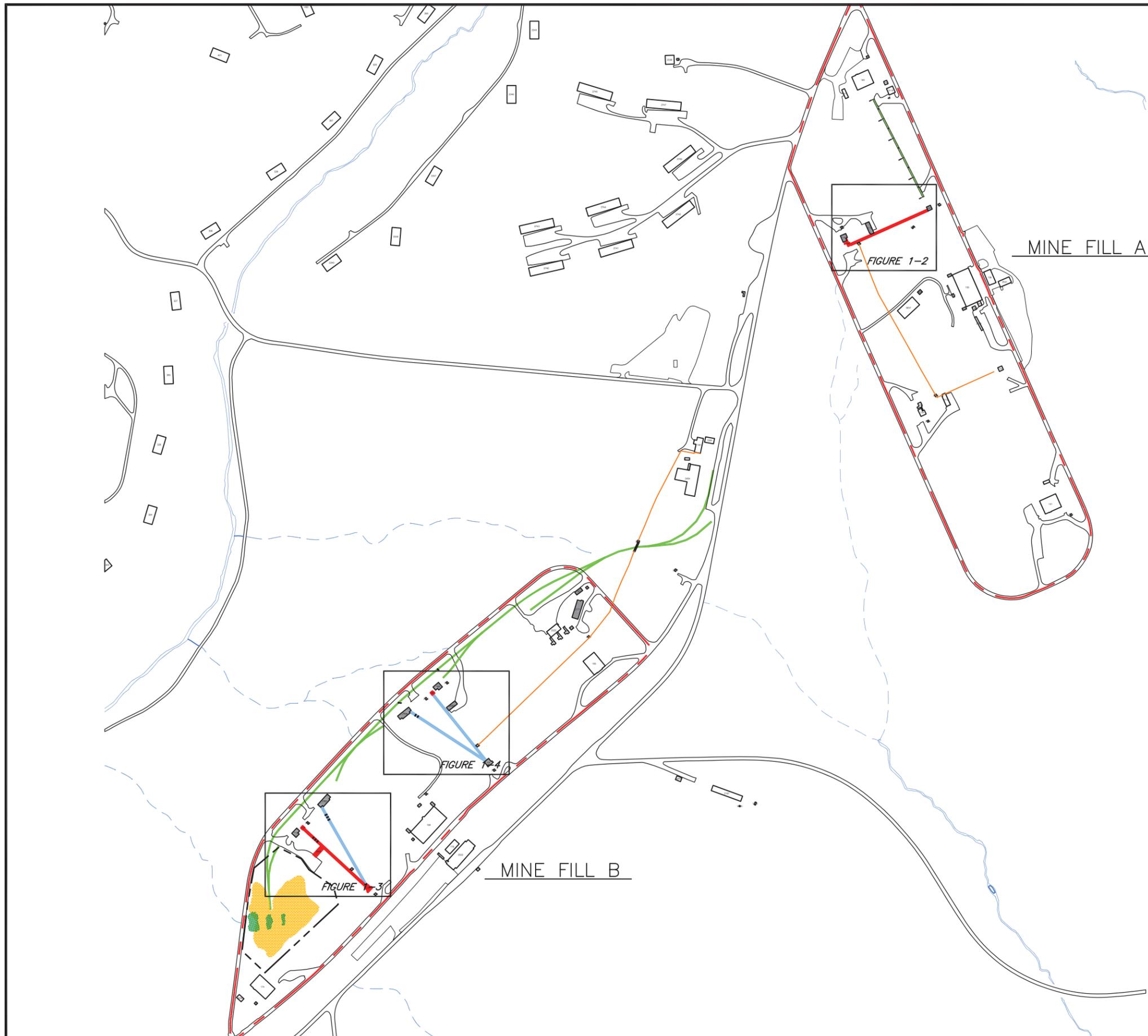
6.0 Maps are provided in Appendix A

7.0 Summary of Land Use Controls (LUCs)

These two project sites will continue to be a part of Mine Fill A and B munitions manufacturing and renovation operations and the new construction on these sites will integrate the areas into the overall facility. There is no need for continued monitoring, record-keeping or 5-year reviews for these sites as a result of these actions.

8.0 Summary of Long-Term Management Requirements

This project was designed to prepare these sites for new construction projects which will be initiated after all demolition activities are completed. Existing security fencing will not be modified by this project and all current facilities will continue to be utilized to manufacture or service munitions items for military use. The new construction is designed to be integrated into the remaining munitions manufacturing facilities in Mine Fill A and B and there will be no change in land use controls or any other aspect of these operations.



- LEGEND
- - - MINE FILL BOUNDARY
 - - - SURFACE WATER
 - STRAW CHECK DAMS
 - SLOPE WORK AREA
 - - - CONSTRUCTION LIMITS
 - STEAM LINE
 - DEMOLISHED RAIL LINE
 - DEMOLISHED BUILDING
 - DEMOLISHED TUNNEL
 - ABATED EXPLOSIVE RESIDUE



600 0 600 1200



SCALE - FEET

<p>FIGURE 1-1 EXPLOSIVE RESIDUE LOCATIONS AND QUANTITIES N40083-05-D-4015; FC02 DEMOLITION OF MINE FILL BUILDINGS NSA CRANE, INDIANA</p>	
<p>PREPARED FOR NAVAL FACILITIES ENGINEERING COMMAND MIDWEST</p>	
DRAWN: M. CIESLEWSKI 3/4/11	CHECKED S. BOYLE
REVISED	APPROVED
JOB NO.: 20979.01	
DRAWING NUMBER	
20979 ex residue	

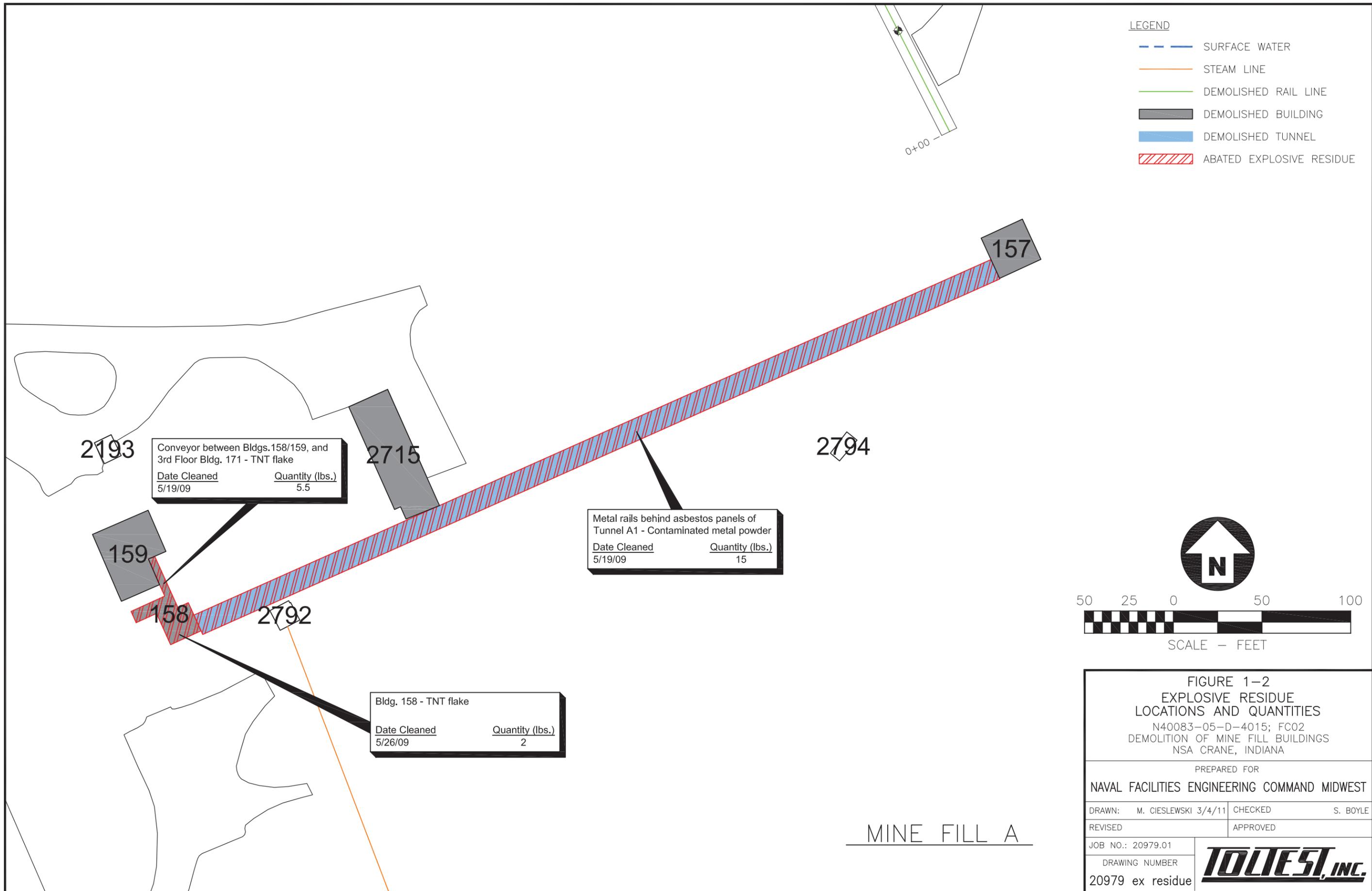


FIGURE 1-2
EXPLOSIVE RESIDUE
LOCATIONS AND QUANTITIES
 N40083-05-D-4015; FC02
 DEMOLITION OF MINE FILL BUILDINGS
 NSA CRANE, INDIANA

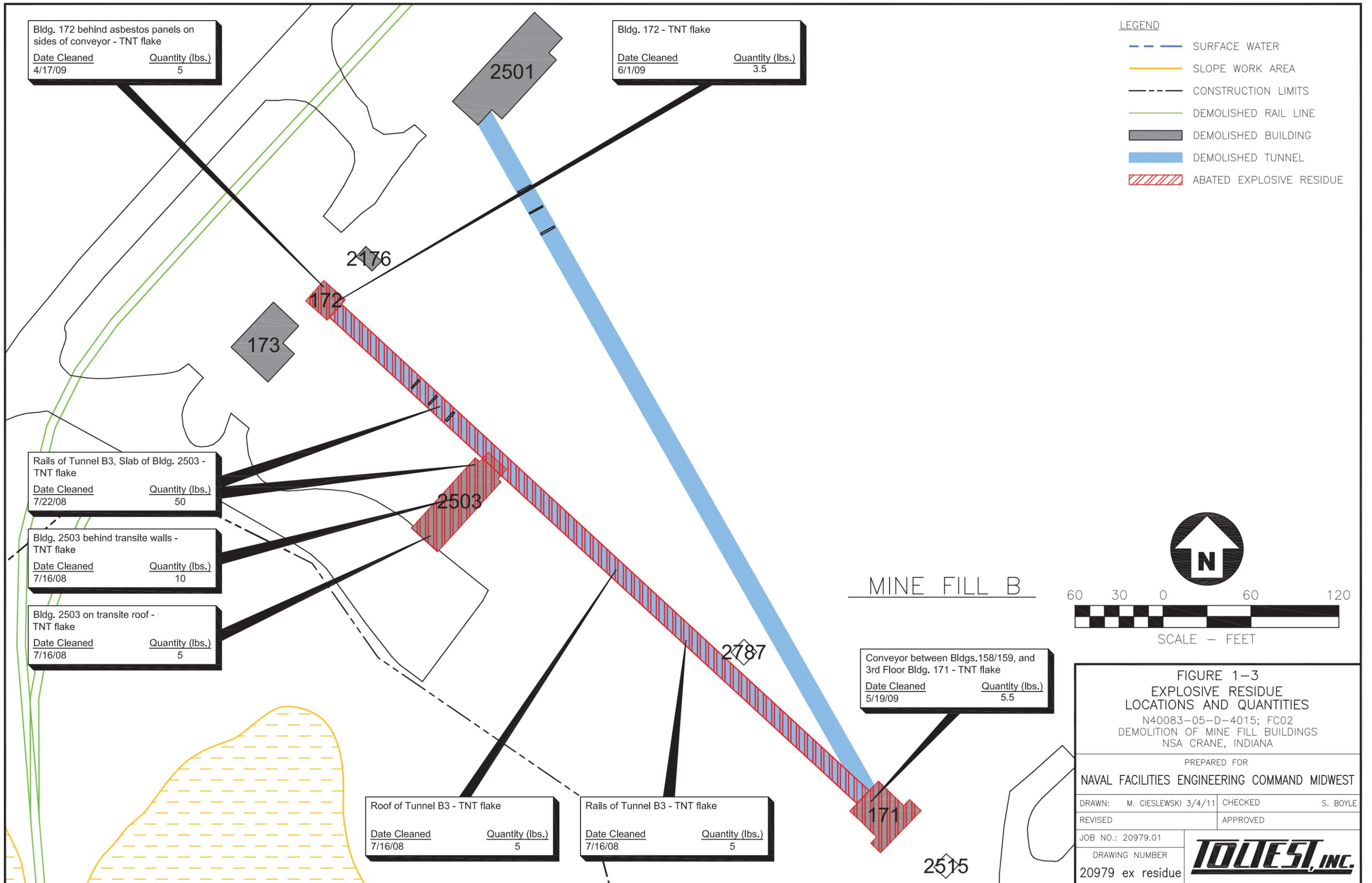
PREPARED FOR
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DRAWING NUMBER
 20979 ex residue

TOLLEST, INC.



2nd Floor of Bldg. 167 under shaker table; Bldg. 167 roof - TNT flake	
<u>Date Cleaned</u>	<u>Quantity (lbs.)</u>
5/8/09	1.5

Bldg. 167 - TNT flake	
<u>Date Cleaned</u>	<u>Quantity (lbs.)</u>
6/1/09	1

Bldg. 167 - TNT flake	
<u>Date Cleaned</u>	<u>Quantity (lbs.)</u>
6/2/09	10

Bldg. 167 under removed conveyor - TNT flake	
<u>Date Cleaned</u>	<u>Quantity (lbs.)</u>
9/17/09	0.5

- LEGEND**
-  SURFACE WATER
 -  STEAM LINE
 -  DEMOLISHED RAIL LINE
 -  DEMOLISHED BUILDING
 -  DEMOLISHED TUNNEL
 -  ABATED EXPLOSIVE RESIDUE

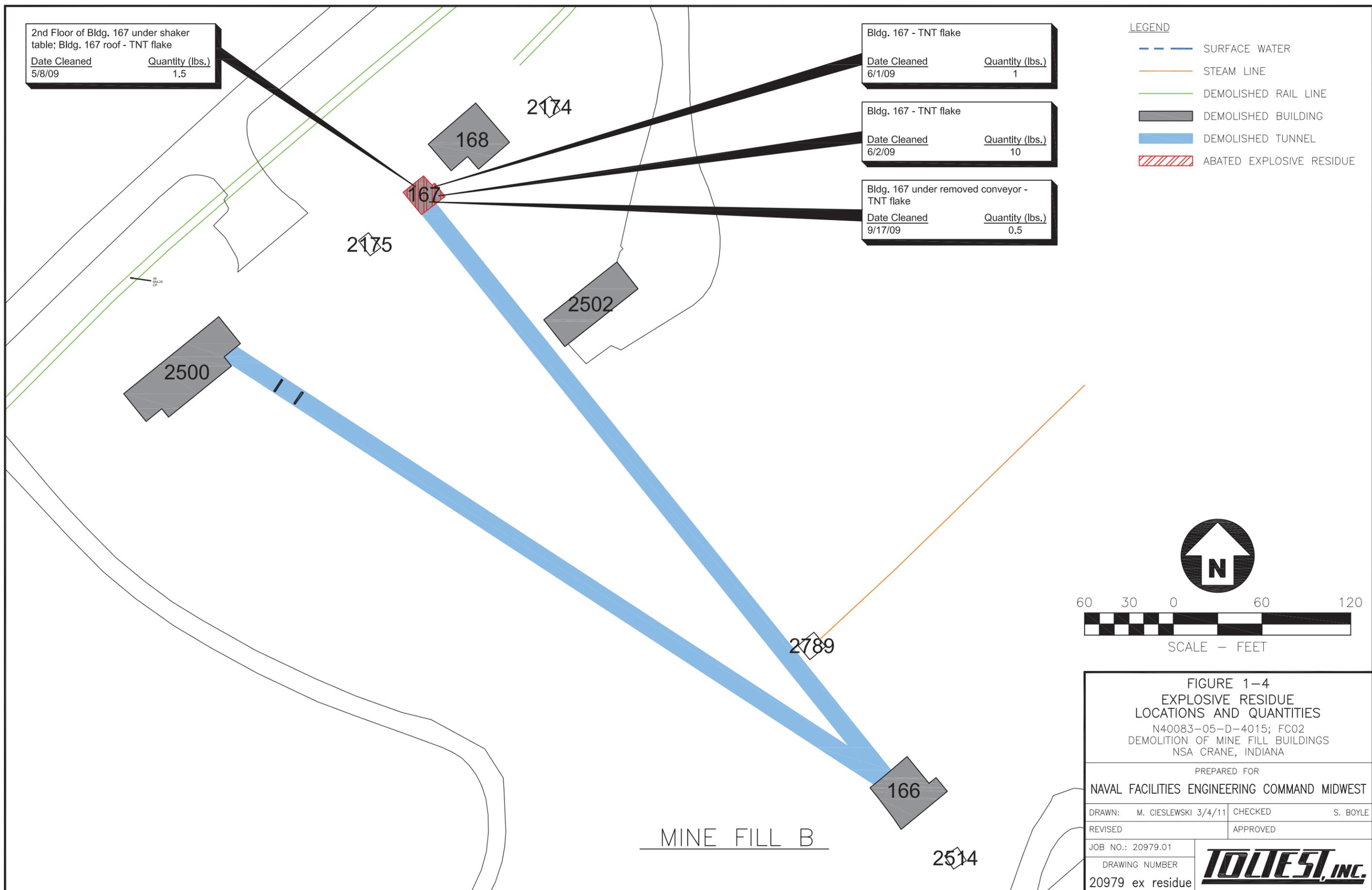


FIGURE 1-4
EXPLOSIVE RESIDUE
LOCATIONS AND QUANTITIES
 N40083-05-D-4015; FC02
 DEMOLITION OF MINE FILL BUILDINGS
 NSA CRANE, INDIANA

PREPARED FOR
NAVAL FACILITIES ENGINEERING COMMAND MIDWEST

DRAWN: M. CIESLEWSKI 3/4/11	CHECKED: S. BOYLE
REVISED:	APPROVED:

JOB NO.: 20979.01
 DRAWING NUMBER
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