

Trajectory Analysis

24 April 2007

Document approved for release by
U.S. Central Command.
See FOIA Case #07-0160

Investigating Officer:

COL

) (3), (b) (1)

, Director Security Forces, CPATT, MNSTC-I, Baghdad, Iraq

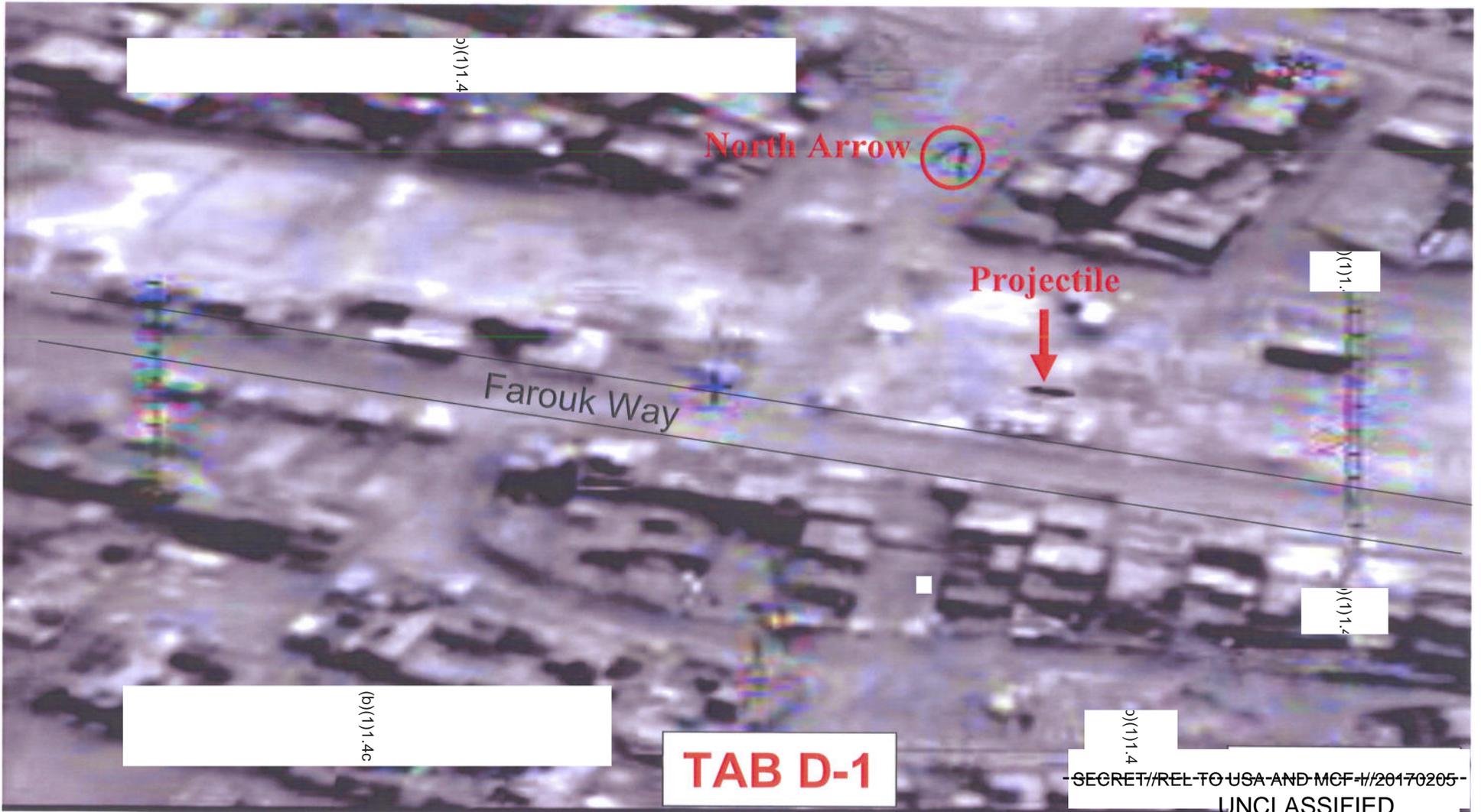
~~SECRET//REL TO USA AND MCF-1//20170205~~ (U)
UNCLASSIFIED

TAB D-1

Derived from: MNF-I SCG, 31 Mar 07
Reason: 1.4c
Declassify on 20170205

UAV Still shot 0136.58 hrs

Picture of Projectile over Farouk Way. Still shot # 2 of 4



TAB D-1

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Trajectory Analysis

- The following depicts the trajectory observed on the previous UAV still shots in the context of the operational graphics. The rounds are depicted in white, the green line connects the observed rounds, and the light blue line completes the trajectory from a point of origin in the east to a point of impact in the west.

(b)(1)1.4c

Speed Analysis

- Using MovieMaker Software, our IMO broke the observed UAV flight down into three frames, each .07 seconds apart. The round is observed in the first frame roughly $\frac{1}{4}$ of the way across the screen (unobserved in the previous .07 second frame), and is observed leaving the viewing area two .07 second frames later. Thus, the round traveled through the entire viewing area in less than .021 seconds. Given the initial position of observation and the distance it travels between frames, it appears that it takes .19 seconds to travel through the viewing area.
- Overlaying the UAV viewing area on the Falcon View map, it appears that the distance of observation was roughly 355-360 meters, at a distance 300-400 meters from the tanks (depending on their exact position on Milaab).
- As the round traveled 355M/.19Sec, its estimated velocity is 1342 meters/second.
- This is consistent with an M830A1 round's velocity at 300-400 meters which would have an expected velocity of 1328-1348 M/S. This is inconsistent with other insurgent munitions (Recoilless rifle 400-700M/S).

TAB D-1

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UNCLASSIFIED

(b)(1)1.4c

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IS-1 Investigation covering 02 Feb COB GRANT engaged

SWORN STATEMENT

For use of this form, see AR 190-45; the proponent agency is PMG.

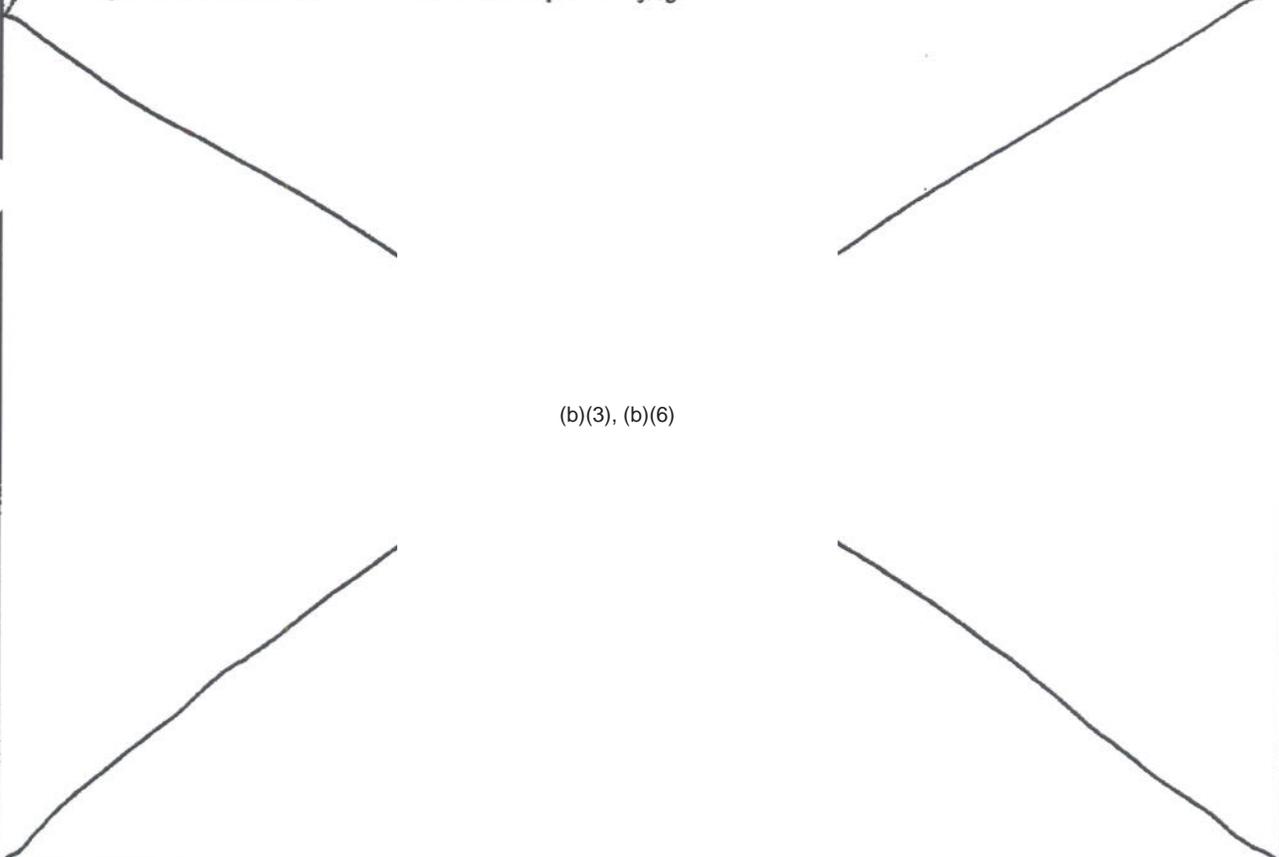
PRIVACY ACT STATEMENT

AUTHORITY: Title 10 USC Section 301; Title 5 USC Section 2951; E.O. 9397 dated November 22, 1943 (SSN).
PRINCIPAL PURPOSE: To provide commanders and law enforcement officials with means by which information may be accurately identified.
ROUTINE USES: Your social security number is used as an additional/alternate means of identification to facilitate filing and retrieval.
DISCLOSURE: Disclosure of your social security number is voluntary.

| | | | |
|--|----------------------------------|-------------------------------|----------------|
| 1. LOCATION CAMP RAMADI, IRAQ | 2. DATE (YYYYMMDD) 2007/02/14 | 3. TIME 0105 | 4. FILE NUMBER |
| 5. LAST NAME, FIRST NAME, MIDDLE NAME (b)(3), (b)(6) | 6. SSN (b)(6) | 7. GRADE/STATUS E-6/ACTIVE | |
| 8. ORGANIZATION OR ADDRESS HHC, 3-69 ARMOR, CAMP RAMADI, IRAQ 09396 | | | |

9. I, (b)(3), (b)(6), WANT TO MAKE THE FOLLOWING STATEMENT UNDER OATH:

After conducting an end for end test with a gunner's quadrant on the HQ66, 3-69 ARMOR M1A1 tank, I selected MPAT/OR on the ammunition select switch and manually indexed 200 meters in the Computer Control Panel while the palm switches on the gunner's power control handles were engaged and centered. The tank was parked on relatively flat ground. I then placed the quadrant on the quadrant pads on top of the breech and adjusted the quadrant to level the bubble. The reading was 2.2 degrees. According to the FT-120-D-2, this would give the MPAT round a maximum range of 550 meters if fired with the power control handles centered and the vehicle was on relatively flat ground. I spoke with an instructor at the Armor Center Master Gunner School in Ft. Knox, KY. and confirmed that if the elevation of the gun tube is raised, the distance the round would travel would increase, regardless of the range input into the Fire Control System. Without using a gunner's quadrant to find the elevation of the gun tube at the time of firing, the maximum distance the round would travel is impossible to judge.



(b)(3), (b)(6)

| | | |
|--------------------|---|-------------------|
| 10. EXHIBIT D-3 | 11. INITIALS OF PERSON MAKING STATEMENT (b)(3), (b)(6) | PAGE 1 OF 2 PAGES |
|--------------------|---|-------------------|

ADDITIONAL PAGES MUST CONTAIN THE HEADING "STATEMENT" TAKEN AT 0105 DATED 4 FEB 07

THE BOTTOM OF EACH ADDITIONAL PAGE MUST BEAR THE INITIALS OF THE PERSON MAKING THE STATEMENT, AND PAGE NUMBER MUST BE INDICATED.

STATEMENT OF

(b)(3), (b)(6)

TAKEN AT

0105

DATED

14 Feb 07

STATEMENT (Continued)

(b)(3), (b)(6)

AFFIDAVIT

(b)(3), (b)(6)

_____, HAVE READ OR HAVE HAD READ TO ME THIS STATEMENT WHICH BEGINS ON PAGE 1, AND ENDS ON PAGE 2. I FULLY UNDERSTAND THE CONTENTS OF THE ENTIRE STATEMENT MADE BY ME. THE STATEMENT IS TRUE. I HAVE INITIALED ALL CORRECTIONS AND HAVE INITIALED THE BOTTOM OF EACH PAGE CONTAINING THE STATEMENT. I HAVE MADE THIS STATEMENT FREELY WITHOUT HOPE OF BENEFIT OR REWARD, WITHOUT THREAT OF PUNISHMENT, AND WITHOUT COERCION, UNLAWFUL INFLUENCE, OR UNLAWFUL INDUCEMENT /

(b)(3), (b)(6)

it)

WITNESSES:

(b)(3), (b)(6)

Subscribed and sworn to before me, a person authorized by law to administer oaths, this _____ day of _____ at _____

17446, 5-6711K, 1 Camp K...
ORGANIZATION OR ADDRESS

(Signature of Person Administering Oath)

(Typed Name of Person Administering Oath)

ORGANIZATION OR ADDRESS

(Authority To Administer Oaths)

INITIALS OF PERSON MAKING STATEMENT

PAGE OF PAGES

120MM, M830A1

| RANGE | SUPER-ELEV | DRG/DSE | DHGT/DRG | DRIFT | TIME OF FLIGHT | 10 KPH CR WIND DEFL | MAX ORD | RG TO MAX ORD | ANGLE OF FALL | TERMINAL VELOCITY |
|-------|------------|---------|----------|-------|----------------|---------------------|---------|---------------|---------------|-------------------|
| M | MILS | M/MIL | M/100M | MILS | SEC | MILS | M | M | MILS | M/S |
| 0 | 0.00 | 384 | 0.0 | 0.0 | 0.00 | 0.0 | 0.0 | 0 | 0 | 1410 |

(b)(2)High

(b)(2)High

Gun Target Line:

Approaches and Views of Grant from vic. Millab and Easy Streets.

Prepared: 24 April 2007; Photos taken 10 April 07

Investigating Officer:

COL

(3), (b)

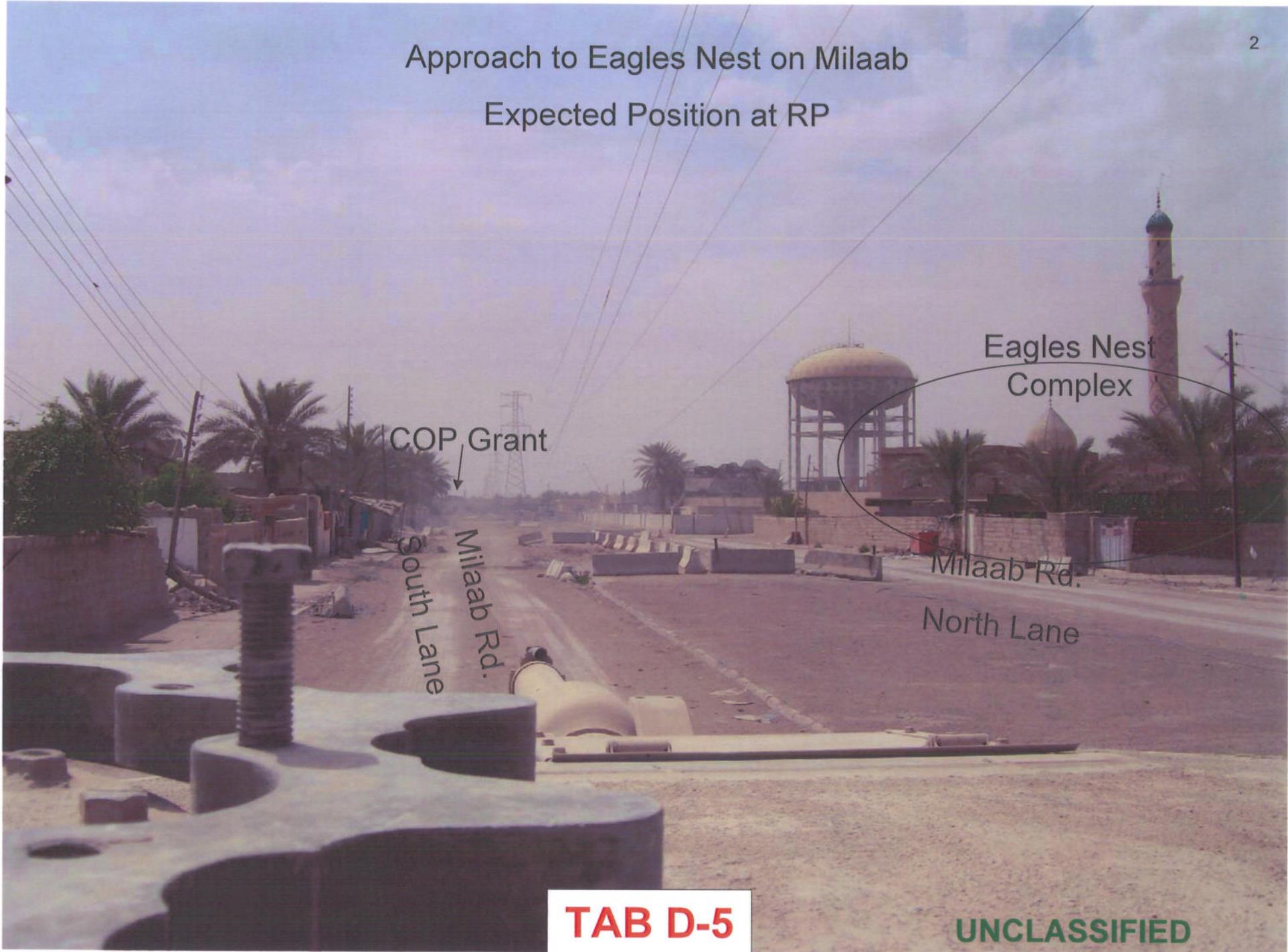
, Director Security Forces, CPATT, MNSTC-I, Baghdad, Iraq

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TAB D-5

Approach to Eagles Nest on Milaab Expected Position at RP



COP Grant

South Lane

Milaab Rd.

Eagles Nest Complex

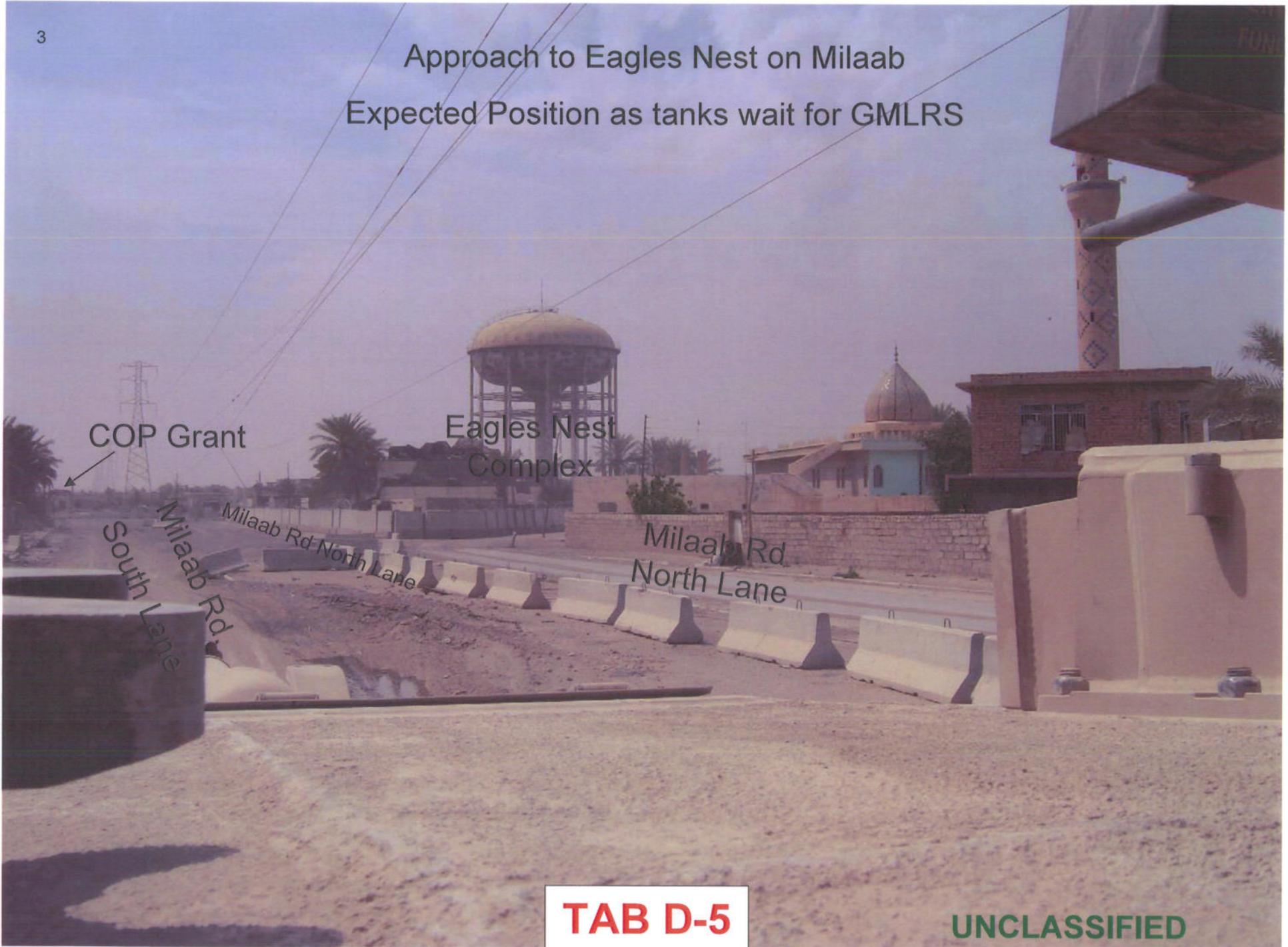
Milaab Rd.

North Lane

TAB D-5

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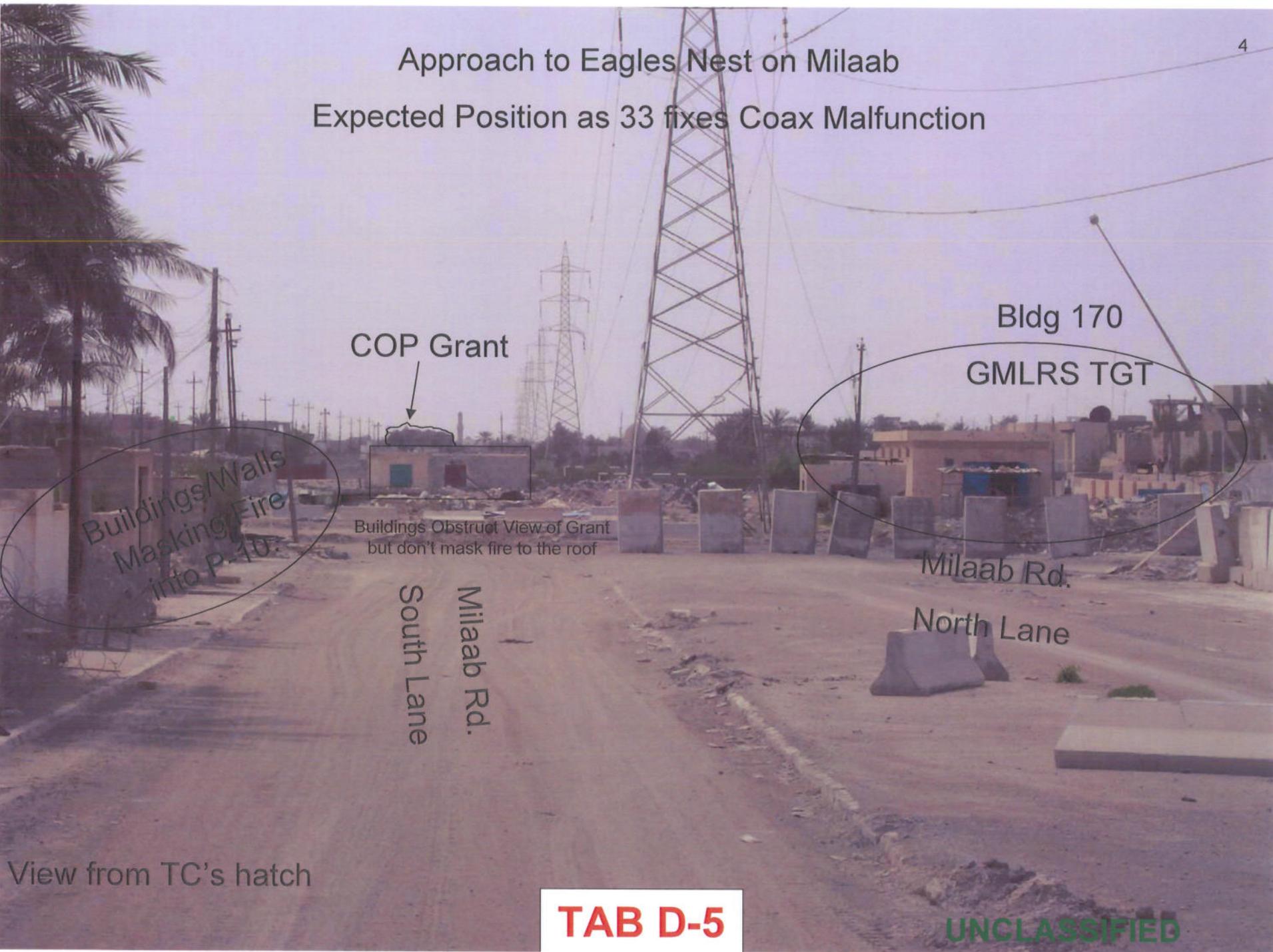
Approach to Eagles Nest on Milaab Expected Position as tanks wait for GMLRS



TAB D-5

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Approach to Eagles Nest on Milaab Expected Position as 33 fixes Coax Malfunction



COP Grant

Bldg 170
GMLRS TGT

Buildings/Walls
Masking Fire
into P-10

Buildings Obstruct View of Grant
but don't mask fire to the roof

South Lane
Milaab Rd.

Milaab Rd.
North Lane

View from TC's hatch

TAB D-5

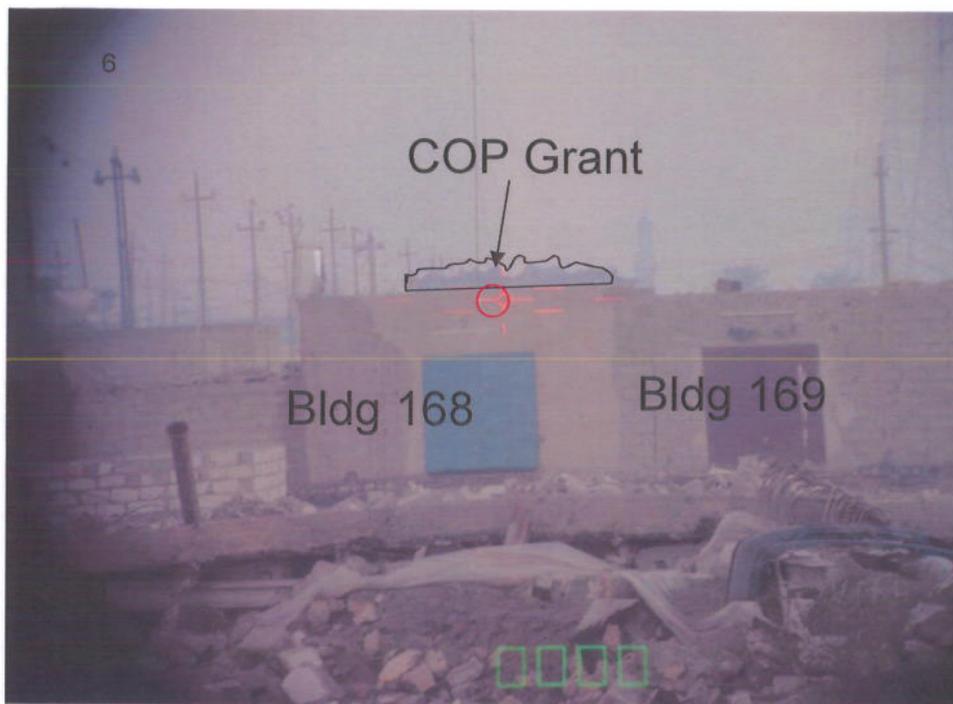
UNCLASSIFIED

Approach to Easy on Milaab Easternmost Position of 33 as it Engages w/ Main Gun

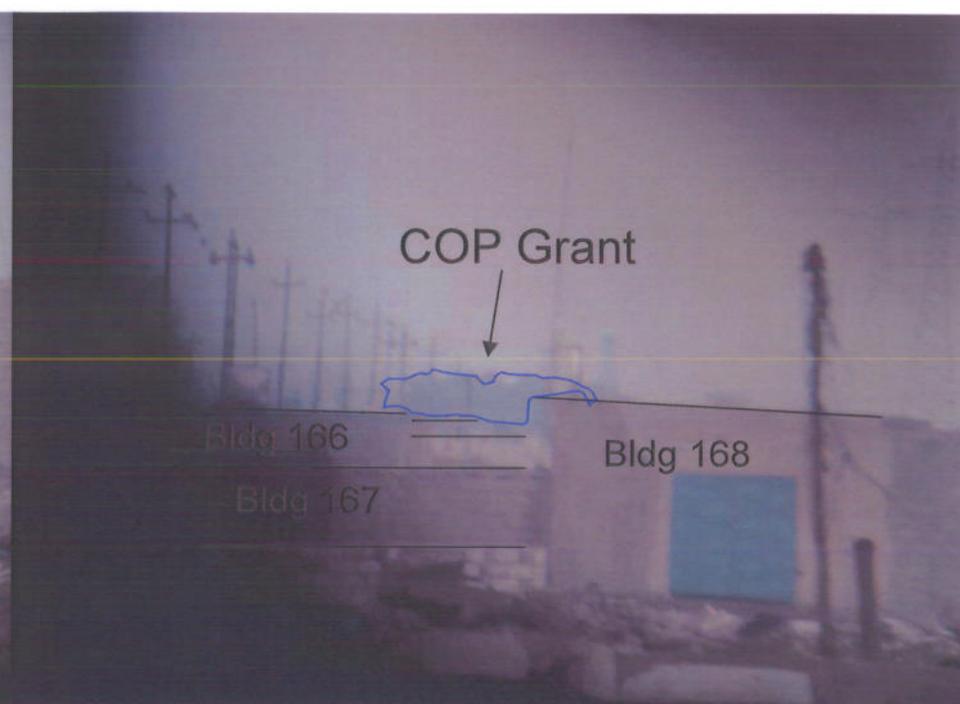


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GTL from East of Easy on Milaab's South Lane. Note that Lase hits the very top of the near Building and returns 0000, indicating target is too close to lase w/ MG selected. From this position on Milaab, the distance is 110m to building 168. This is the same distance that SPC ^{(3), (b)} and SSG ^{(3), (b)} claim they when they indexed coax and re-lased.



GTL from the eastern corner of Easy when tucked in tight to the wall/building on Milaab's South Lane. Rooftops between the tank and Grant are highlighted, but the GTL is un-obscured all the way to Grant, w/ numerous rooftop positions for AIF between Blue 33 and Grant. If SSG ^{(3), (b)} had crested into Easy as claimed, this would be his western site picture.

TAB D-5

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Note false read from
lase of Grant – due
to camo nets?

Bldg 168

Bldg 169

05 10

Tank position in all 4 pics is east of Easy
from the southern lane of Milaab.

05 10

These views are through
gunner's primary site,
daytime, 10x

TAB D-5

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