

**FIELD VARIANCE FORM**

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DATE:	13-DEC-10	PROJECT NAME:	Future East Garrison RI	PROJECT LOCATION:	Future East Garrison MRA
APPLICABLE DOCUMENT / SECTION:	Final Group 4 Remedial Investigation/Feasibility Study (RI/FS) Work Plan – Volume 2, Section 2.2.1, Section 2.3, Section 2.3.2, Table 2-1, and Figure 2-1				
SUBJECT:	Expanded Investigation Acreage in Habitat Reserve Area Parcel E11b.7.1.1				

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**FIELD CHANGE CONDITION:**

The initial analog investigation within Parcel E11b.7.1.1 of the Future East Garrison Munitions Response Area (MRA) is complete pending completion of FORA Third Party Quality Assurance. Attached are Figures 1 through 4 showing the munitions of concern (MEC) and munitions debris (MD) found in Parcel E11b.7.1.1. This initial investigation provides the data needed to determine the nature of the munitions usage within the parcel.

**RECOMMENDED APPROACH / CHANGE:**

Additional grid investigation is recommended to further define the extent of munitions usage. The additional grids were selected based on the location of finds related to 3-inch Stokes Mortars, 37 millimeter Low Explosive Projectiles, and Hand Grenades.

The attached Figure 5 was developed to graphically display and describes the additional areas of investigation. Figure 5 represents an update to Figure 2-1 as presented in the Group 4 RI/FS Work Plan, Volume 2. The total area for the additional grids is 34.1 acres. Figure 5 also reflects minor changes in investigation acreage that occurred during the initial investigation due to site conditions and biological/habitat considerations.

The additional grid investigation will be consistent with the field activities as described in the Group 4 RI/FS Work Plan, Volume 2, Sections 2.3 and 2.3.2. These sections describe the analog investigation activities to be conducted during the remedial investigation. Additional grids may be necessary within the MRA if MEC or MD items are found on the edges of the expansion grids.

**IMPACT ON PRESENT AND COMPLETED WORK:**

Allows for a more complete characterization of Parcel E11b.7.1.1.

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**REQUESTED BY:** Kristie Reimer, ESCA Remediation Program Manager (ARCADIS)

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CLARIFICATION/FOR INFORMATION ONLY



MINOR CHANGE



MAJOR CHANGE




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**ESCA RP TEAM APPROVALS: G. CLARK, L. TEMPLE, B. MOE**


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COMMENTS

ACKNOWLEDGED BY:

**GREG CLARK**ESCA RP UXO SAFETY  
OFFICER (WESTON)

SIGNATURE

DATE

ACKNOWLEDGED BY:

**BRUCE MOE**ESCA RP SENIOR UXO  
SUPERVISOR (WESTON)

SIGNATURE

DATE

ACKNOWLEDGED BY:

**LINDA TEMPLE**ESCA RP REMEDIATION  
PROJECT MANAGER (WESTON)

SIGNATURE

DATE

FORA APPROVAL:

COMMENTS

PRESENTED TO EPA & DTSC AT THE MONTHLY  
ESCA REGULATORY MEETING. DEC. 2010.



APPROVED



REJECTED

**STAN COOK**FORA ESCA PROGRAM  
MANAGER

SIGNATURE

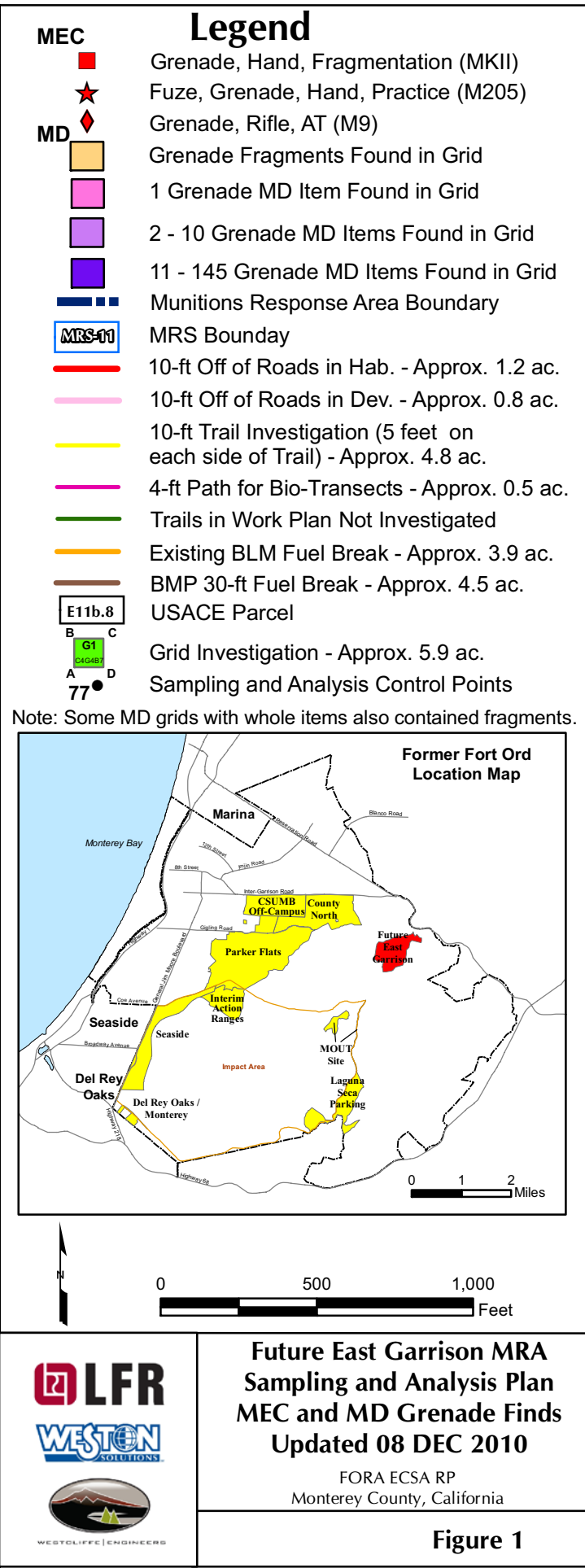
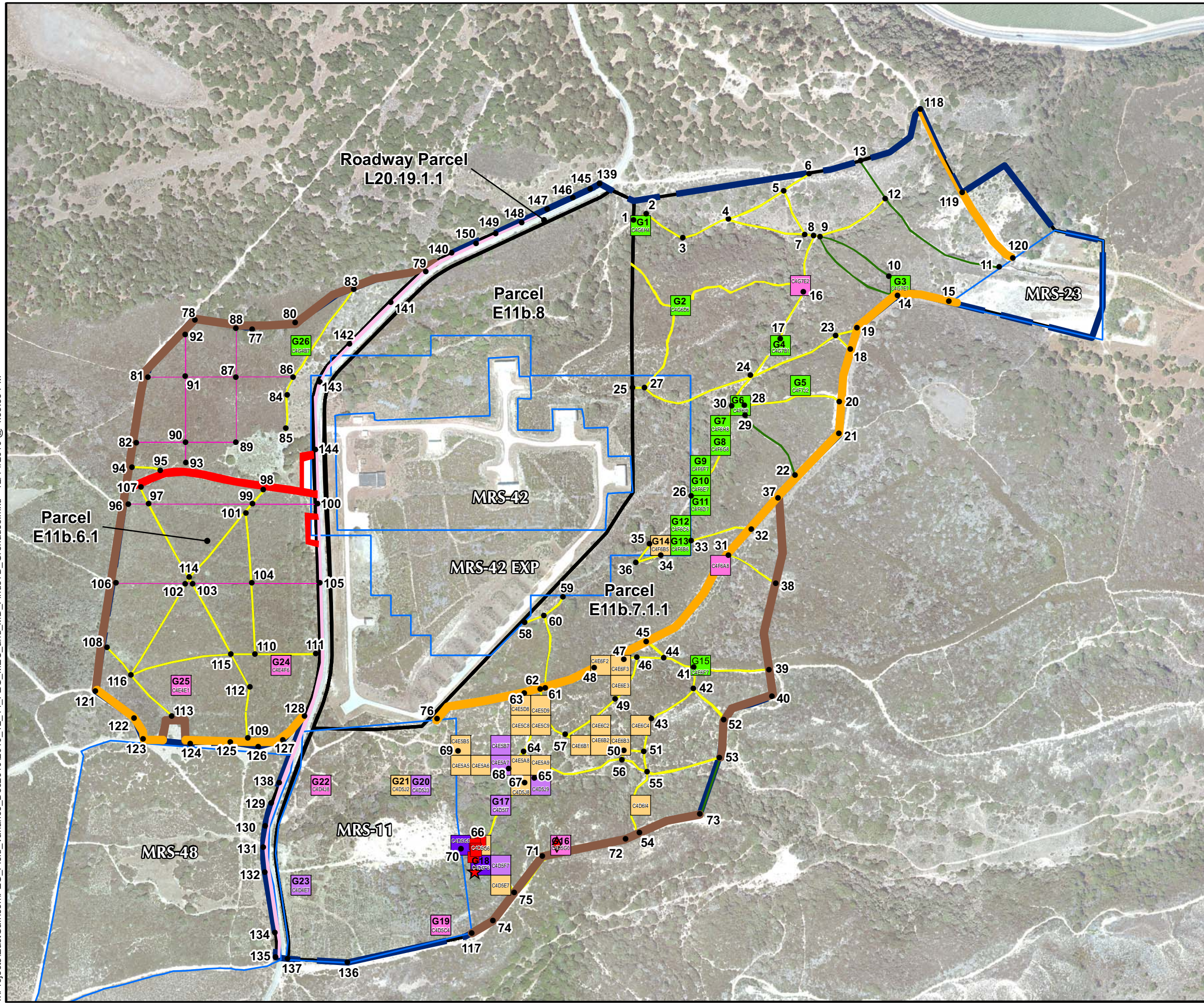
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ATTACHMENTS:

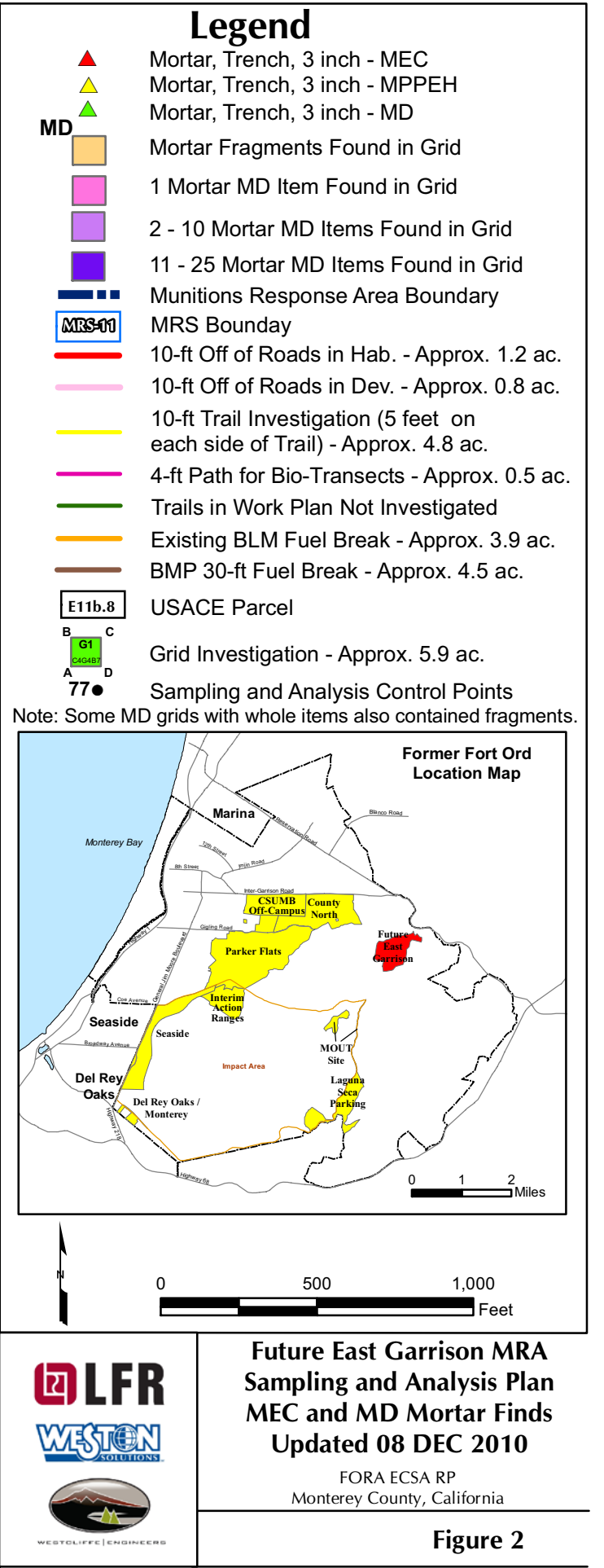
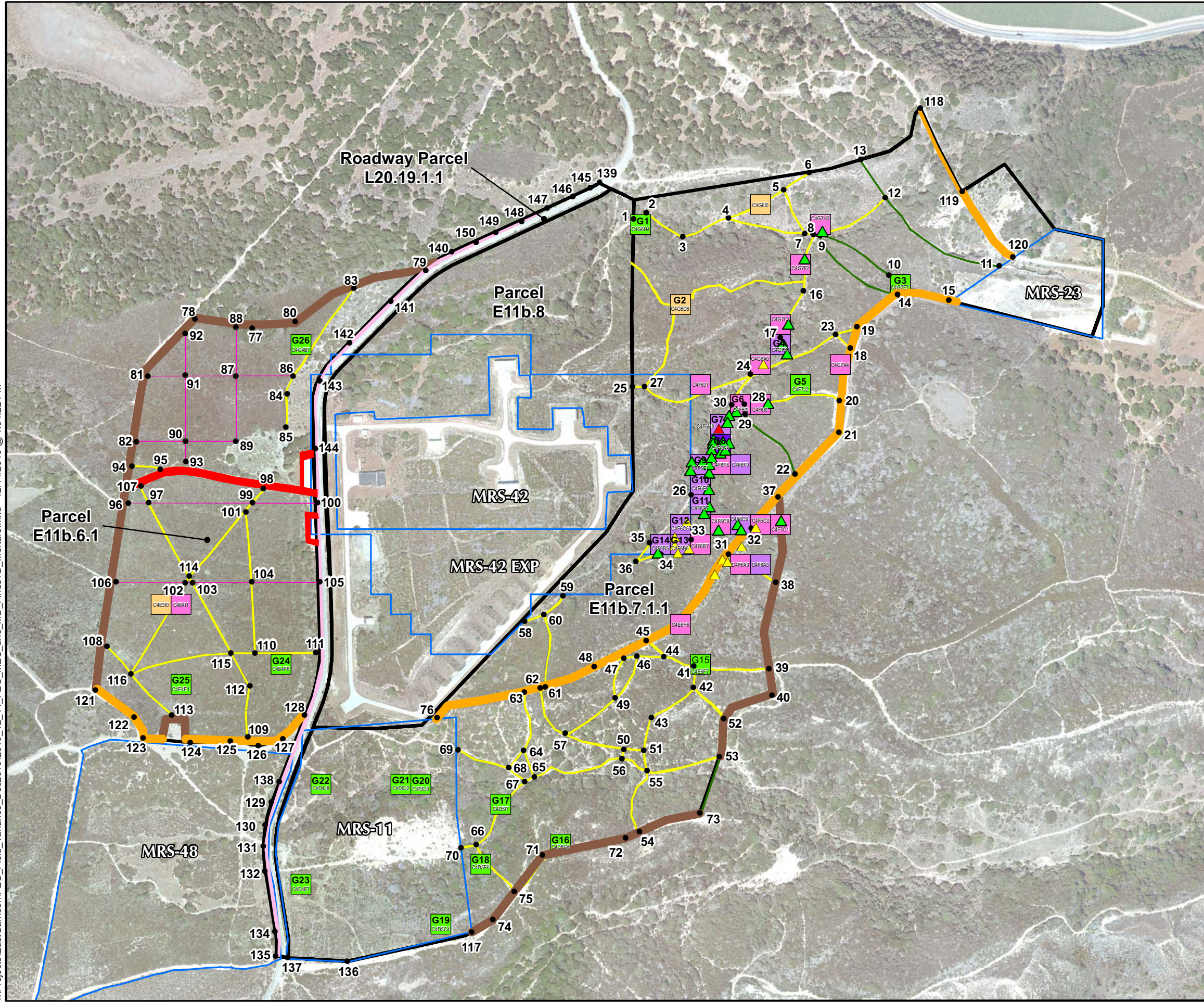
- Figure 1 - Future East Garrison MRA Sampling and Analysis Plan, MEC and MD Grenade Finds, East Side  
 Figure 2 - Future East Garrison MRA Sampling and Analysis Plan, MEC and MD Mortar Finds, East Side  
 Figure 3 - Future East Garrison MRA Sampling and Analysis Plan, MEC and MD Projectile Finds, East Side  
 Figure 4 - Future East Garrison MRA Sampling and Analysis Plan, MEC and MD Other Finds, East Side  
 Figure 5 - Future East Garrison MRA Sampling and Analysis Plan, Grids and Labels with Additional Grids



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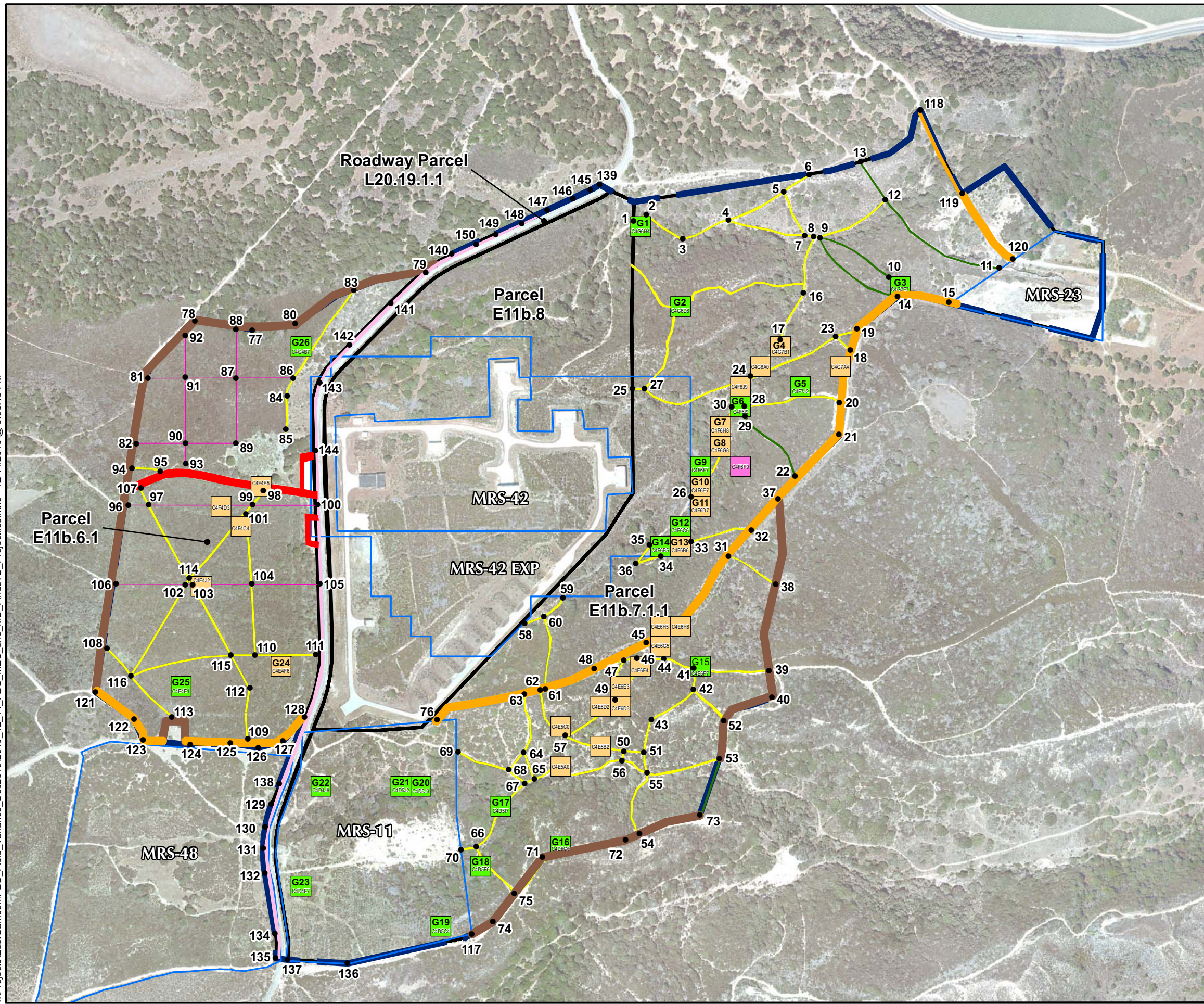








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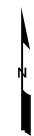
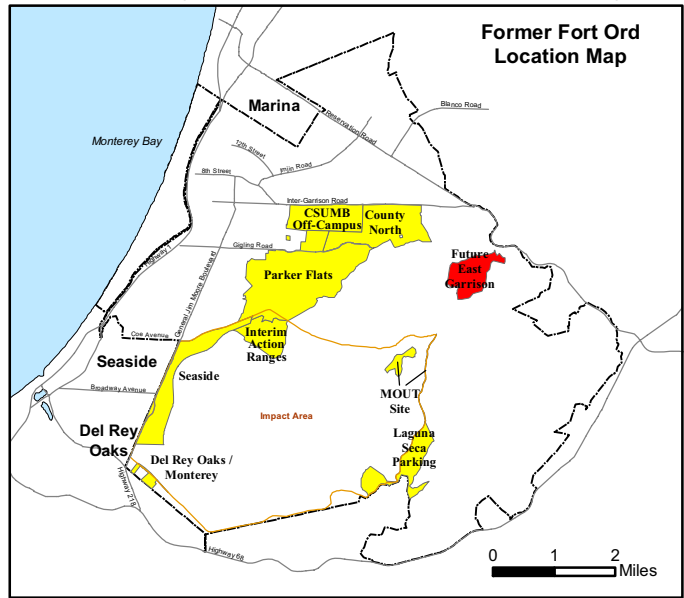


## Legend

MD

- 37mm LE, Projectile Fragments Found in Grid
- 1 - 37mm LE, Projectile MD Item Found in Grid
- Munitions Response Area Boundary
- MRS Boundary
- 10-ft Off of Roads in Hab. - Approx. 1.2 ac.
- 10-ft Off of Roads in Dev. - Approx. 0.8 ac.
- 10-ft Trail Investigation (5 feet on each side of Trail) - Approx. 4.8 ac.
- 4-ft Path for Bio-Transects - Approx. 0.5 ac.
- Trails in Work Plan Not Investigated
- Existing BLM Fuel Break - Approx. 3.9 ac.
- BMP 30-ft Fuel Break - Approx. 4.5 ac.
- USACE Parcel
- Grid Investigation - Approx. 5.9 ac.
- Sampling and Analysis Control Points

Note: Some MD grids with whole items also contained fragments.



0 500 1,000 Feet



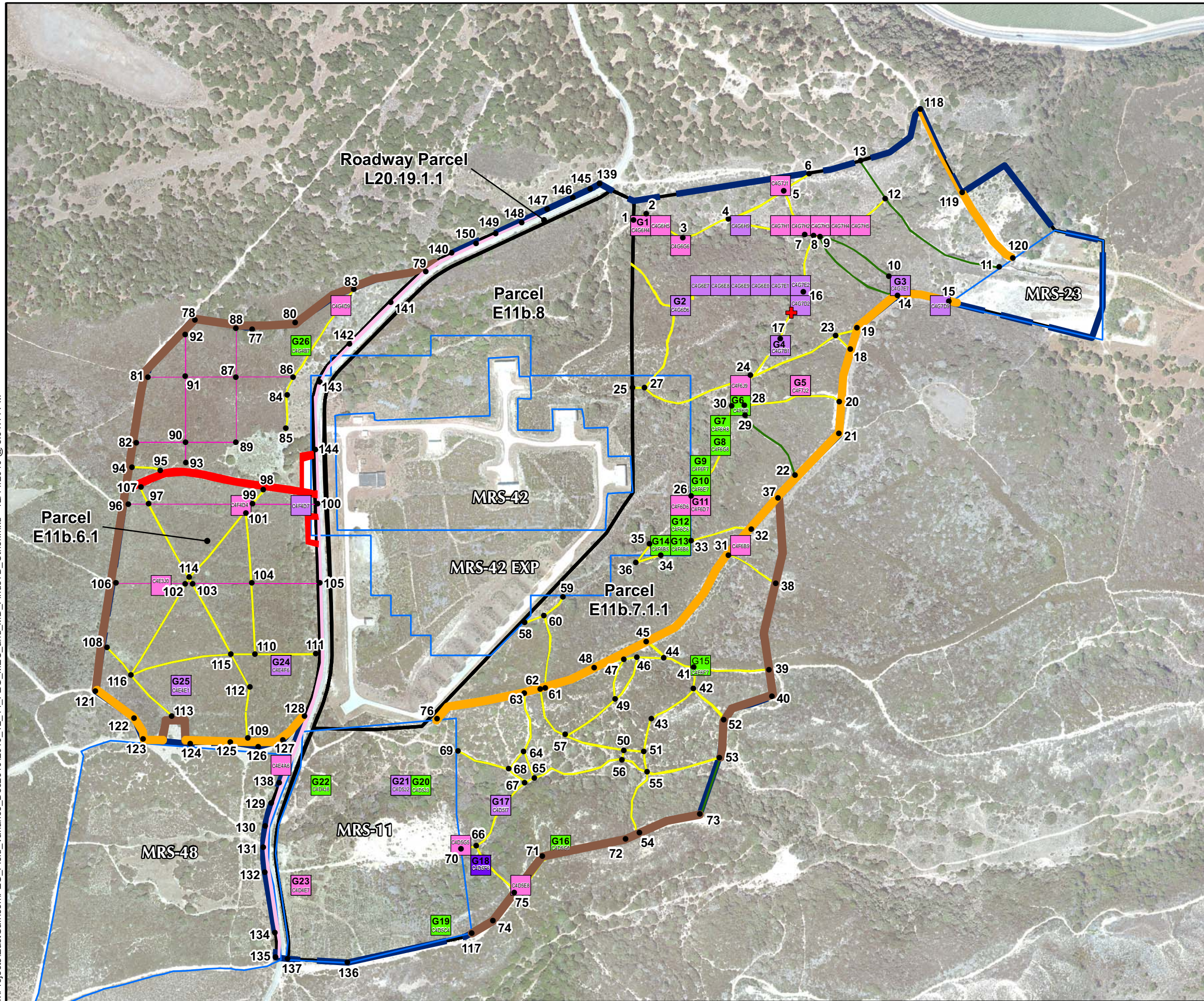
**Future East Garrison MRA  
Sampling and Analysis Plan  
MEC and MD Projectile Finds  
Updated 08 DEC 2010**

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Figure 3



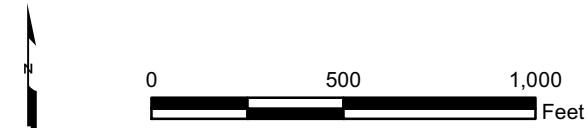
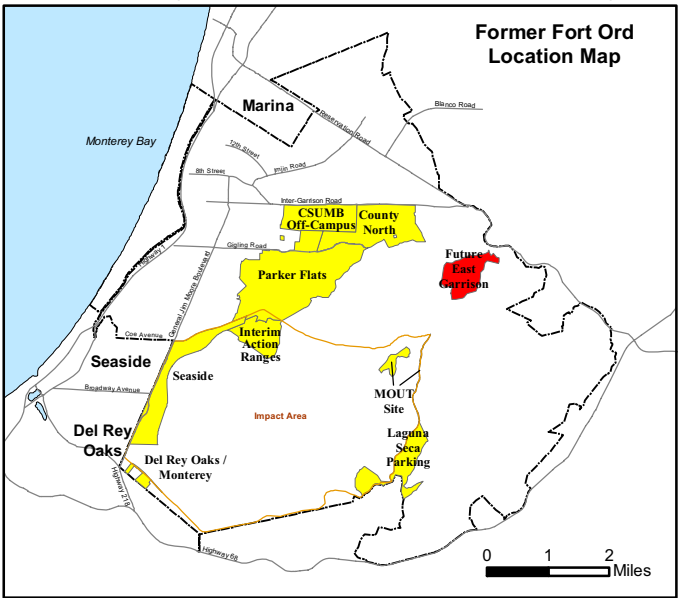
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## Legend

- MEC**
- Signal, Illumination, Ground (M125)
- MD**
- 1 Other MD Item Found in Grid
  - 2 - 10 Other MD Items Found in Grid
  - 11 - 25 Other MD Items Found in Grid
- Munitions Response Area Boundary**
- MRS Boundary
  - 10-ft Off of Roads in Hab. - Approx. 1.2 ac.
  - 10-ft Off of Roads in Dev. - Approx. 0.8 ac.
  - 10-ft Trail Investigation (5 feet on each side of Trail) - Approx. 4.8 ac.
  - 4-ft Path for Bio-Transects - Approx. 0.5 ac.
  - Trails in Work Plan Not Investigated
  - Existing BLM Fuel Break - Approx. 3.9 ac.
  - BMP 30-ft Fuel Break - Approx. 4.5 ac.
- USACE Parcel**
- Grid Investigation - Approx. 5.9 ac.
  - 77● Sampling and Analysis Control Points

Note: Some MD grids with whole items also contained fragments.



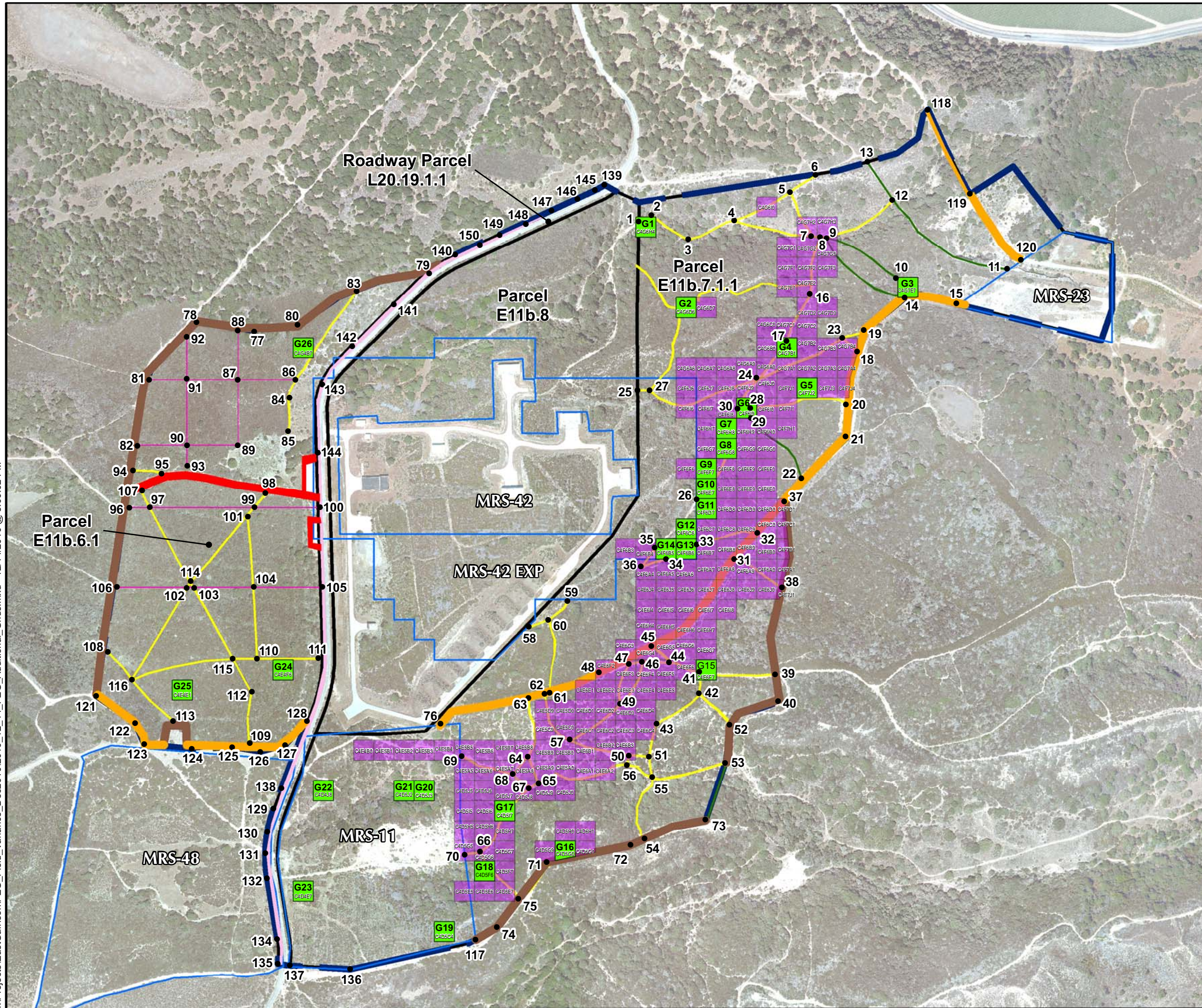
**Future East Garrison MRA  
Sampling and Analysis Plan  
MEC and MD Other Finds  
Updated 08 DEC 2010**

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Figure 4



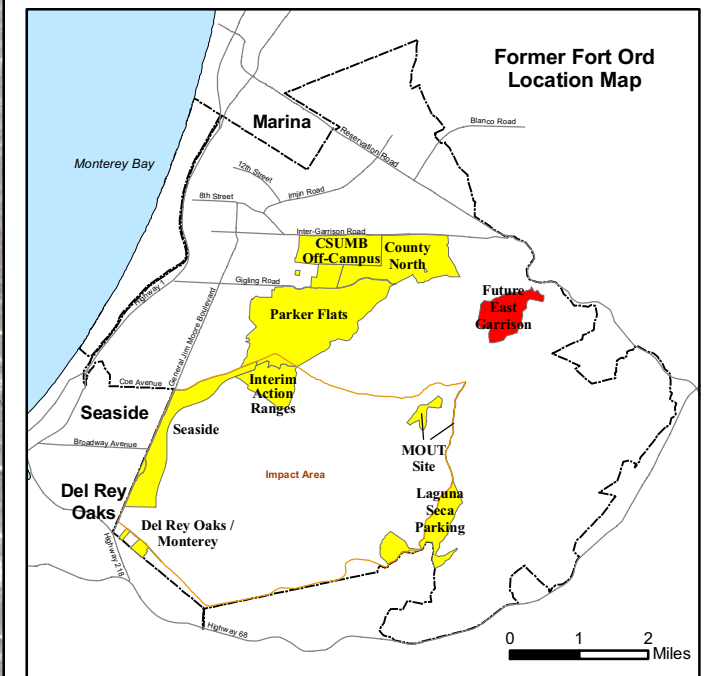
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## Legend

- Additional 167 Grids - Approx. 38.0 ac.
- Munitions Response Area Boundary
- MRS Boundary
- 10-ft Off of Roads in Hab. - Approx. 1.2 ac.
- 10-ft Off of Roads in Dev. - Approx. 0.8 ac.
- 10-ft Trail Investigation (5 feet on each side of Trail) - Approx. 4.8 ac.
- 4-ft Path for Bio-Transects - Approx. 0.5 ac.
- Trails in Work Plan Not Investigated
- Existing BLM Fuel Break - Approx. 3.9 ac.
- BMP 30-ft Fuel Break - Approx. 4.5 ac.
- USACE Parcel
- Grid Investigation - Approx. 5.9 ac.
- Sampling and Analysis Control Points

Note: Acreage of additional 167 grids include trails and fuel breaks that have previously been cut.



### Future East Garrison MRA Sampling and Analysis Plan Grids and Labels with Additional Grids

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Figure 5