

APPENDIX C

Building Demolition and Removal Plan

FORA ESCA REMEDIATION PROGRAM

Appendix C: Building Demolition and Removal Plan

FINAL Group 1 Remedial Investigation / Feasibility Study Work Plan

Volume 2 - Sampling and Analysis Plan

Parker Flats Munitions Response Area Phase II

Former Fort Ord
Monterey County, California

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Prepared for:

FORT ORD REUSE AUTHORITY

100 12th Street, Building 2880
Marina, California 93933



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ACRONYMS AND ABBREVIATIONS

ACM	asbestos-containing material
AIHA	American Industrial Hygiene Association
Army	United States Department of the Army
Cal-OSHA	California Occupational Safety and Health Administration
DHS	Department of Health Services
DI	deionized
DTSC	Department of Toxic Substances Control
EDDs	electronic data deliverables
EPA	U.S. Environmental Protection Agency
ESCA RP	Environmental Services Cooperative Agreement Remediation Program
FORA	Fort Ord Reuse Authority
LBP	lead-based paint
LCS	laboratory control samples
LFR	LFR Inc.
MBUAPCD	Monterey Bay Unified Air Pollution Control District
MEC	munitions and explosives of concern
mg/kg	milligrams per kilogram
MRA	Munitions Response Area
MS	matrix spike
NESHAP	National Emission Standards for Hazardous Air Pollutants
OSHA	Occupational Safety and Health Administration
QA/QC	quality assurance/quality control
RI/FS	Remedial Investigation and Feasibility Study
UXO	unexploded ordnance
WESTON	Weston Solutions, Inc.

C-1.0 INTRODUCTION

The Parker Flats Munitions Response Area (MRA) is divided into two areas: Parker Flats MRA Phase I and Parker Flats MRA Phase II (Figure C-1). The Parker Flats MRA Phase I has a Proposed Plan and pending Record of Decision. The Parker Flats MRA Phase II has been identified as requiring further remediation activities for munitions and explosives of concern (MEC). A variety of structures exist within the Parker Flats MRA that were used to support range activities. This Building Demolition and Removal Plan addresses the structures that exist within the Parker Flats MRA Phase II.

The Parker Flats MRA Phase II is comprised of a portion of parcels E19a.1, E19a.3, and E19a.4 and all of parcels E18.1.3, E18.4, and E19a.2. A listing of the existing structures within the Phase II area of the Parker Flats MRA is provided in Table C-1, which is based on the United States Department of the Army (“Army”) buildings and structures database and a site reconnaissance conducted in 2008 by the Environmental Services Cooperative Agreement Remediation Program (ESCA RP) Team. As summarized in Table C-1, six of the 21 existing structures require demolition to accommodate the additional MEC remediation activities because the structures are located within areas designated for future residential use. More detailed views of the locations of the 21 structures are shown on Figures C-2, C-3, C-4, and C-5, as indicated in Table C-1.

Seven of the 21 structures within the Parker Flats MRA Phase II were identified in the Army’s buildings and structures database as previously destroyed; however, the site reconnaissance conducted by the ESCA RP Team determined that the structures still exist. These structures are identified as: 4B57, 4B58, and 4B60 on Parcel E19a.2 (Figure C-3); 2028A on parcel E19a.3 (Figure C-3); and R393, 4A26, and 4A27 on parcel E19a.4 (Figure C-4). In addition, the site reconnaissance identified seven additional concrete pads or foundations (B-1, B-2A, B-2B, B-3, B-4, B-5, and B-6) within the Parker Flats MRA Phase II of which four (B-1, B-2A, B-2B, and B-3) were located within areas designated for future residential use and, therefore, require removal to complete the remediation activities for MEC (Table C-1).

The Army performed preliminary asbestos surveys in 1993 and identified the presence of asbestos-containing materials (ACM) in some of the structures. However, the Army’s survey was not in compliance with current National Emission Standards for Hazardous Air Pollutants (NESHAP) demolition requirements and additional building characterization will be required prior to demolition activities. A description of the pre-demolition sampling program, demolition activities, and post-demolition clearance criteria is presented in the scope of work section found below.

Table C-1
Parker Flats MRA Phase II - Existing Structures

Parcel Number	Facility Number	Description	Demolition Required	Figure
Future Residential Parcels				
E18.1.1	B-1	Concrete Pad/Foundation	Yes	C-2
E18.1.3	4386	Enlisted Barracks	Yes	C-2
E18.1.3	4387	Enlisted Barracks	Yes	C-2
E18.1.3	4476	Softball Field	No	C-2
E18.1.3	B-2A	Concrete Pad/Foundation	Yes	C-2
E18.4	4475	Water Tower	No	C-2
E19a.1	B-2B	Concrete Pad/Foundation	Yes	C-2
E19a.1	B-3	Concrete Pad/Foundation	Yes	C-2
Future Nonresidential Parcels				
E19a.3	2028A	Field Range Latrines	No	C-3
E19a.3	3950	Rappelling Tower	No	C-3
E19a.3	4A34	Field Range Latrines	No	C-3
E19a.3	4B56	Field Range Latrines	No	C-3
E19a.3	4B77	Field Range Latrines	No	C-3
E21b.3	R9441	Field Range Latrines	No	C-5
E21b.3	B-6	Concrete Pad/Foundation	No	C-5
E21b.3	3991	Covered Training Area	No	C-5
Future Habitat Reserve				
E19a.2	4B57	Field Range Latrines	No	C-3
E19a.2	4B58	Field Range Latrines	No	C-3
E19a.2	4B60	Field Range Latrines	No	C-3
E19a.2	B-4	Concrete Pad/Foundation	No	C-3
E19a.2	B-5	Concrete Pad/Foundation	No	C-3
E19a.4	R391	Relocatable Building	No	C-4
E19a.4	R392	Relocatable Building	No	C-4
E19a.4	R393	Relocatable Building	No	C-4
E19a.4	4A26	Field Range Latrines	No	C-4
E19a.4	4A27	Field Range Latrines	No	C-4
E19a.4	4A60	Field Range Latrines	No	C-4

C-2.0 SCOPE OF WORK

The ESCA RP Team, which includes LFR Inc. (LFR), Weston Solutions, Inc. (WESTON), and Westcliffe Engineers, Inc., and qualified subcontractors will perform the appropriate testing and demolition activities to complete the removal of the seven structures. Work will be conducted in accordance with federal, state, and local regulations regarding building demolition, asbestos abatement, and lead stabilization. A description of each of these tasks is presented below.

Unexploded ordnance (UXO) escorts and a UXO Technician II (or above) will be provided by WESTON for all field-related activities as identified in this scope of work. Additionally, MEC recognition training will be required for all subcontractors involved with field activities. If a MEC is encountered, the UXO escorts should be notified immediately, and appropriate MEC response activities will be conducted by the appropriate field personnel.

C-2.1 Pre-Demolition Activities

C-2.1.1 Building Material Survey

A full demolition-level asbestos survey of structures 4386 and 4387 will be performed. Asbestos surveys are not required for the concrete pads/foundations identified as B-1, B-2A, B2-B, and B-3. A demolition-level survey to comply with NESHAP requires accessing chases, wall cavities, roofing, and decking. As part of these activities, materials whose disposal methods may be regulated (e.g., mercury vapor lamps, fluorescent lighting, and heating, ventilating, and air conditioning systems containing refrigerant [as applicable]) will be quantified.

The quantity and location of the asbestos samples collected will be based on in-house sampling protocol, which is based on the U.S. Environmental Protection Agency (EPA) Asbestos Hazard Emergency Response Act regulations. Asbestos sample analysis will be performed using polarized light microscopy with dispersion staining in accordance with EPA Method EPA-600/R-93/116 at a laboratory accredited by the American Industrial Hygiene Association (AIHA) and the California Department of Health Services (DHS).

Survey work will be performed by a qualified and licensed asbestos inspector(s) who has completed an EPA-approved training course for building inspection, and who has a minimum of one year of experience in performing asbestos building inspections. The inspection work will be conducted under the direct oversight of a California Certified Asbestos Consultant.

Following the receipt of laboratory results, a summary report will be prepared for the MRA detailing the survey results. The report will provide an inventory and locations of confirmed ACM, laboratory analysis results, and an inventory of observed regulated materials.

C-2.1.2 Pre-Demolition Lead Characterization

As part of the building survey activities, lead characterization activities will be conducted. This will include the collection of:

- representative paint chip samples for lead to help evaluate Occupational Safety and Health Administration (OSHA) work practices during demolition activities
- representative composite building samples for waste characterization in accordance with American Society for Testing and Materials Standard E 1908-97

Lead and Waste Extraction Test sample analyses will be performed by flame atomic absorption spectroscopy, using EPA Method SW-846/7420 at a laboratory accredited by AIHA and DHS.

C-2.1.3 Pre-Demolition Composite Soil Sampling

Due to the potential that structure demolition activities may release lead-based paint (LBP) into nearby soils, composite soil sampling will be conducted in the perimeter driplines of the painted structures to provide a baseline level of lead in soil. In these areas, composite samples will be collected, which will consist of five to eight aliquots from surface (0 to 3 inches) soils surrounding the structures. One composite soil sample will be collected from each of the painted structures. Each composite sample will contain no greater than eight aliquots, and at least one sample will be collected from each side of the building where exposed soil is present. Samples will be collected from areas with the highest likelihood of elevated lead in soil (at areas of flaking paint or in driplines within 2 feet of the building). If the structure is unpainted, or if there is no exposed soil, pre-demolition sampling activities will not be required.

If pre-demolition soil samples show that the soil surrounding the structures contains greater than 203 milligrams per kilogram (mg/kg) of lead, the soil will be marked for removal after MEC clearance activities. If lead-affected soil is shown to be present greater than 10 feet out from the building's perimeter, then the source of the elevated lead in soil may not be flaking LBP. In this case the soil sampling program will be halted at this structure and a revised plan to characterize soil in the area will be developed and submitted to the Department of Toxic Substances Control (DTSC) for approval.

C-2.1.4 Soil Sampling Quality Assurance and Quality Control

Field

Chain-of-custody forms will be prepared for groups of samples collected at a given location on a given day. Each chain-of-custody form will be prepared in triplicate. Two of the three copies (white and pink) will accompany each shipment of samples to the laboratory. The yellow copy is kept in the quality assurance/quality control (QA/QC) file and the pink copy is kept in the project file. The chain-of-custody form documents the identity of all personnel involved in sample transfer.

For QA/QC purposes, one blind field duplicate soil sample will be collected for every 10 composite soil samples collected, with a minimum of one duplicate sample per day. The duplicate sampling program represents greater than 10 percent of the total number of samples proposed for analysis. One equipment blank and one trip blank will be collected per batch of samples submitted to the laboratory. Equipment blanks will be collected by preparing sample containers and collection trowels or scoops as if a soil sample will be collected. Distilled or deionized (DI) water will then be poured over the sampling trowel or scoop. As the distilled or DI water is poured over the trowel or scoop a sample container will be used to collect the runoff water from the trowel or scoop. The sample container with the runoff water will then be sealed, labeled, and logged as described herein. One equipment blank will be analyzed for each phase of sampling. The remaining equipment blanks will be collected and submitted to the laboratory on hold. The trip blank will only be analyzed if detectable levels of lead are found in the equipment blank. Additional blanks may be analyzed by the laboratory if sample contamination is suspected.

Sampling equipment (stainless steel trowel or scoop) that comes into contact with potentially affected soil will be decontaminated consistently to ensure the quality of samples collected. As appropriate, disposable equipment intended for one-time use may be used and will not be decontaminated, but will be packaged for appropriate disposal.

Laboratory

QA/QC procedures to be used by the laboratory will include analysis of method blanks, duplicates, matrix spike (MS), and laboratory control samples (LCS). One data batch will include a Level 3 data package, which includes initial calibration and calibration verification summaries for each instrument and analytical sequence, copies of instrument run logs, and sample preparation bench book entries.

A review of the laboratory's internal QC results will include an evaluation of laboratory duplicates, MS, duplicate percent recoveries, method blanks, and LCS. The following quality control limits are to be used in evaluating the data:

Method 6010B QC Limits				
Compound	LCS/BS/BSD Recovery	BS/BSD RPD	MS/MSD Recovery	MS/MSD RPD
Lead	70 - 120	20	46 – 128	39

Notes:

LCS = Laboratory Control Sample

BS = Blank Spike

BSD = Blank Spike Duplicate

MS = Matrix Spike

MSD = Matrix Spike Duplicate

RPD = Relative Percent Difference

Appropriate qualifiers will be applied to the data, as necessary, based on the data validation review. Laboratory analytical results and QC data will be reported as electronic data deliverables (EDDs) to reduce the potential for transcription errors. EDDs will be entered into a database to facilitate data retrieval and evaluation.

Data validation will include a review of field procedures and documentation for completeness and accuracy, verification of appropriate custody control of samples, and a review of laboratory records to verify that appropriate sample preservation and holding times are achieved.

Documentation

In addition to the chain-of-custody forms, daily construction logs will be kept throughout the soil removal and soil sampling activities. The construction logs will identify the contractors on site, any job-specific training conducted on site, removal procedures, depths and extents of each excavation area, a visible description of the excavation detailing whether paint chips are present, soil sampling collection times, any areas requiring additional excavation, and general site observations. Logs will be completed daily, and copies of the daily logs will be submitted with the RI/FS report that will be prepared for the Group 1 MRAs (Seaside and Parker Flats MRAs).

C-2.2 Abatement and Demolition

C-2.2.1 Asbestos Abatement

Following the completion of pre-demolition activities, an asbestos abatement contractor will conduct the removal of ACM from the structures prior to demolition. Asbestos abatement will involve the removal of asbestos from within regulated areas of the buildings in compliance with Monterey Bay Unified Air Pollution Control District (MBUAPCD) Rules 306, 402, and 439 and the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal-OSHA) regulations 8 CCR 1529 and 8 CCR 5208. Waste generated from the asbestos abatement activities will be containerized, profiled, and disposed of in accordance with DTSC regulations outlined in Title 22 CCR Division 4.5.

Following the completion of abatement activities a California Certified Asbestos Consultant or Certified Site Surveillance Technician will conduct a visual clearance of the work areas to confirm that the identified ACM has been removed and that the work area has been sufficiently cleaned.

C-2.2.2 Lead Stabilization

Prior to demolition activities a deleading contractor will remove loose and flaking LBP from the structures using DHS-certified lead-related construction workers and supervisors. The contractor will lay out drop cloths beneath the work area and conduct the removal operations using wet methods. Work will be conducted using the containment requirements outlined in the DHS lead hazard control regulation detailed in DHS Title 17. LBP stabilization will be

conducted in accordance with Cal-OSHA's Lead in Construction standard found in 8 CCR Section 1532.

Paint chips generated by the deleading activities will be containerized, profiled, and disposed of in accordance with DTSC regulations outlined in Title 22 CCR Division 4.5.

Throughout the deleading activity, and when weather permits, one upwind and two downwind air samples will be collected for lead in order to determine the effectiveness of the lead hazard control techniques. The lead air sample results will be compared to the OSHA action level of 30 micrograms per cubic meter based on an 8-hour time-weighted average. Lead air samples will be analyzed at an AIHA- and DHS-accredited laboratory using National Institute for Occupational Safety and Health Method 7082.

Following the completion of lead stabilization activities, a visual clearance of the work area will be conducted to ensure that paint chips do not remain in the surrounding soils.

C-2.2.3 Demolition Activities

Following asbestos abatement and lead stabilization activities, each of the seven structures will be demolished and disposed of at an approved facility. A demolition contractor using 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) and Cal-OSHA lead awareness trained workers will demolish and dispose of the structures and associated foundations. Demolition activities will consist of:

1. Notify Underground Service Alert a minimum of 72 hours before start of excavation activities.
2. Cut and cap all utilities associated with the building (if any) in accordance with City of Seaside, Monterey County, Pacific Gas and Electric Company, SBC, and the Marina Coast Water District requirements.
3. Remove and dispose of or recycle the remaining regulated building components (if any) including chemicals; light ballasts; fluorescent tubes; mercury vapor lamps; refrigerant; mercury-containing thermostats, thermometers, and gauges; automotive equipment and parts; or similar materials detailed in the survey report.
4. Create a regulated area that includes impermeable drop cloths, plywood, or similar items to prevent paint chips from affecting soils.
5. Demolish buildings onto existing foundations using wet methods following MBUAPCD Rules 402 and 439. If weather permits, the oversight consultant will continue collecting perimeter lead-in-air samples as described in the Lead Stabilization Section C-2.2.2.
6. Break up and remove concrete foundations, slabs, and footings (if present).
7. Properly containerize waste and profile debris for waste disposal in accordance with Title 22 CCR Division 4.5.
8. Clean work area and equipment. All debris and paint chips shall be collected and properly containerized prior to a visual examination by the oversight consultant.

9. The oversight consultant will verify building debris and paint chips have been cleared from the work area.
10. The contractor will dispose of generated waste in accordance with applicable federal, state, and/or local regulations.
11. The oversight consultant will collect post-demolition soil samples to verify that the demolition activities did not create a lead-in-soil hazard as described in the Post-Demolition Soil Sampling Section C-2.3.1 and remove the soil as described in Sections C-2.3.2 and C-2.3.3.

C-2.3 Post-Demolition Activities

C-2.3.1 Post-Demolition Soil Sampling

At structures painted with LBP, post-demolition soil samples will be collected from exposed surficial soils (0 to 3 inches below ground surface) within and in the vicinity of the former structure location. One composite soil sample will be collected from each of the demolished structures. Each composite sample will contain no greater than eight aliquots, and at least one aliquot will be collected from each side of the former structure where exposed soil is present. Aliquots will be collected within 10 linear feet of the former structure's foundation line, distributed at random distances from the former foundation. If the composite sample shows lead levels greater than 203 mg/kg, and the lead-affected soil extends 10 feet out from the building perimeter or less, soil at the former structure location will be excavated and confirmation soil samples will be collected as described in Sections C-2.3.2 and C-2.3.3.

The lead-affected soil will be demarcated by either stakes or fencing in order to allow the contractor to locate the soil after the completion of demolition and/or MEC clearance activities.

The QA/QC procedures described in Section C-2.1.4 will be conducted during post-demolition soil sampling.

C-2.3.2 Soil Excavation Activities

If either the pre-demolition or post-demolition soil sampling discovers lead-affected soil in a structure's vicinity (within 10 feet of the former structure location), the contractor will use DHS-certified workers and supervisors to remove the lead-affected soil after the completion of MEC clearance activities. Earthmoving equipment will then be used to excavate the lead-affected soil, which would be temporarily stockpiled on plastic sheeting or in a closed-top dumpster pending waste characterization results and the determination of an appropriate disposal facility. The contractor will remove 1-foot lifts in increments of 3 feet out from the former structure location until confirmation soil samples show that the hot spot has been removed or until the excavation has extended 10 feet from the former structure's perimeter.

A water truck will be used to keep the excavation and surrounding area moist to minimize dust emissions. A real-time aerosol monitor will be used to measure dust emissions, and

additional watering or other dust suppression methods will be conducted if airborne levels exceed action levels of 1 milligram per cubic meter above background conditions. Additionally, three lead-in-air samples will be collected during the soil excavation activities as described in Section C-2.2.2.

Following excavation and waste profiling, the affected soils will be loaded into a closed-top dumpster or covered truck and transported to the appropriate disposal facility. Loaded trucks will be checked for mud and dirt and cleaned, if necessary, before leaving the area. Prior to disposal, waste characterization samples will be collected and analyzed to establish an appropriate landfill for disposal.

C-2.3.3 Post-Excavation Soil Sampling

After excavation is completed, if no visible paint chips are present, then confirmation soil samples will be collected from the sidewalls and floor of the initial excavation areas and analyzed for lead. Additional soil will be removed, if necessary, until no visible paint chips are observed and confirmation sample results indicate that residual concentrations of lead are less than the cleanup level of 203 mg/kg, or until the excavation reaches 10 feet from the former structure's perimeter.

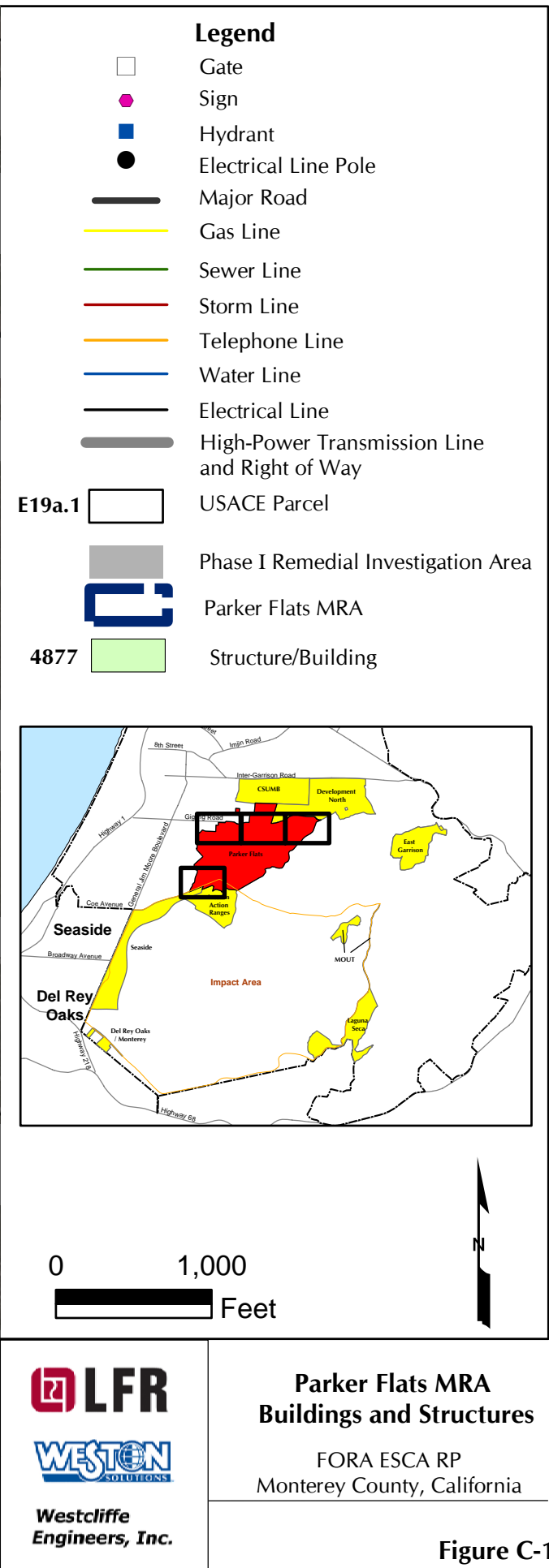
Confirmation composite samples will be collected from the sidewalls and floor of each excavation. One aliquot will be collected for every 50 linear feet along each sidewall. A minimum of three aliquots and a maximum of five aliquots will be collected from the sidewalls of each excavation. The sidewall samples may be collected from varying depths along the sidewall. The samples will be composited prior to analysis.

On excavation floors, one aliquot will be collected for every 200 square feet of excavation floor. No more than five aliquots will be collected from each excavation floor. Samples will be collected at varying distances from the foundation edge. The samples will be composited prior to analysis.

The QA/QC procedures described in Section C-2.1.4 will be conducted during the post-excavation soil sampling.

C-3.0 CLOSEOUT REPORT

Following the completion of the demolition activities and soil removal activities (if required), a closeout letter report describing the results of the soil sampling activities will be prepared. Additionally the closeout letter report for the remediation and demolition activities will be incorporated into the RI/FS report that will be prepared for the Group 1 MRAs (Seaside and Parker Flats MRAs). The report will provide a discussion of the abatement and demolition practices, air monitoring results, visual clearance certifications, photographs, and laboratory results.



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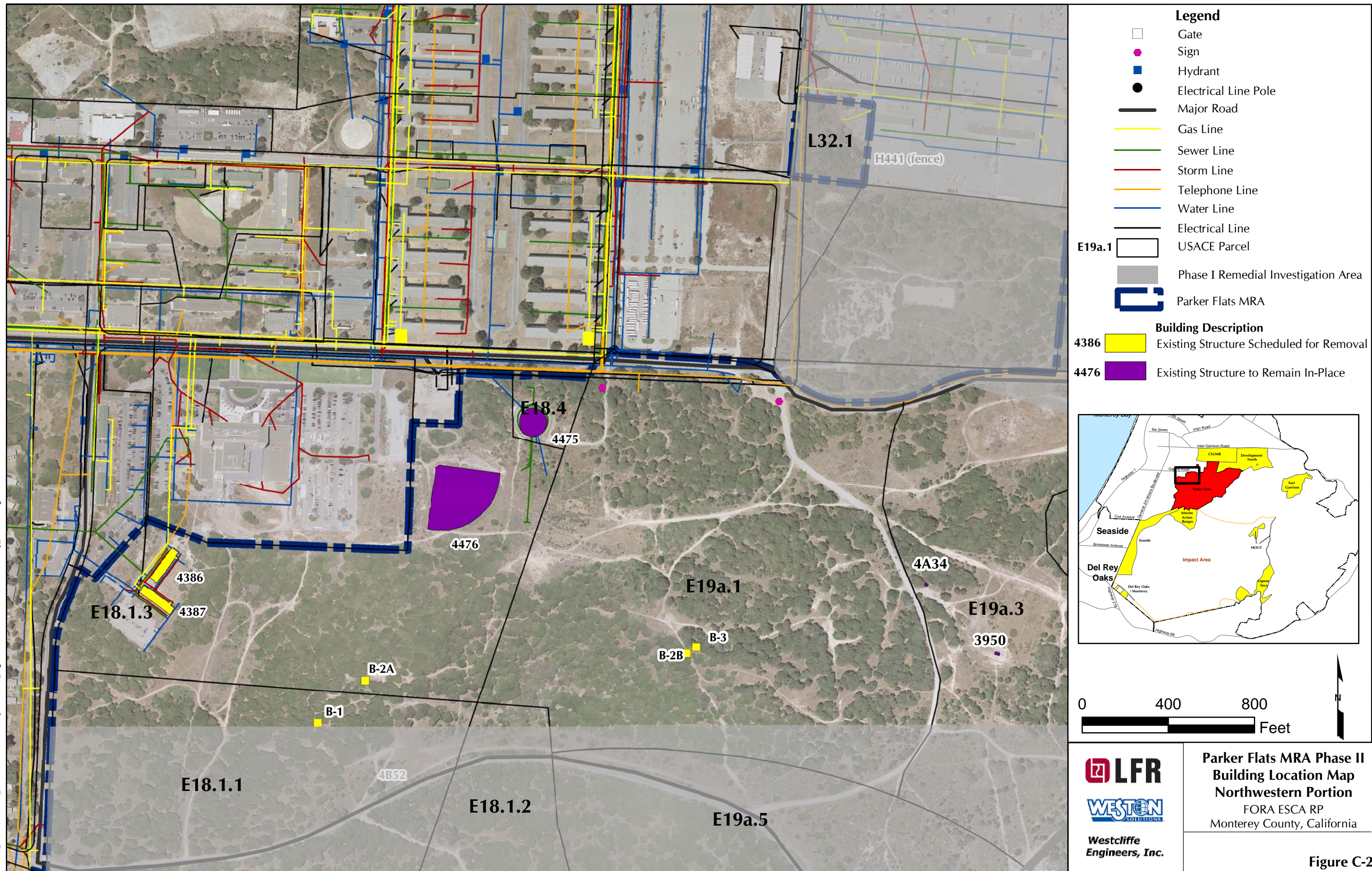
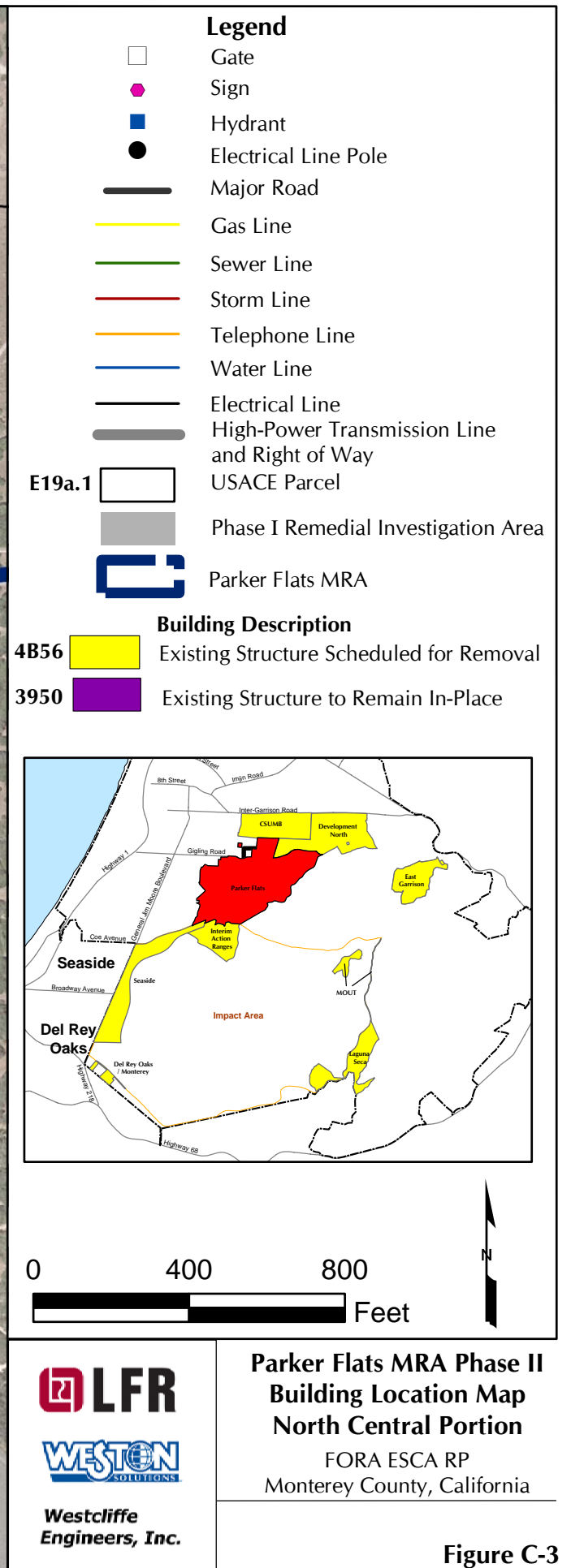


Figure C-2



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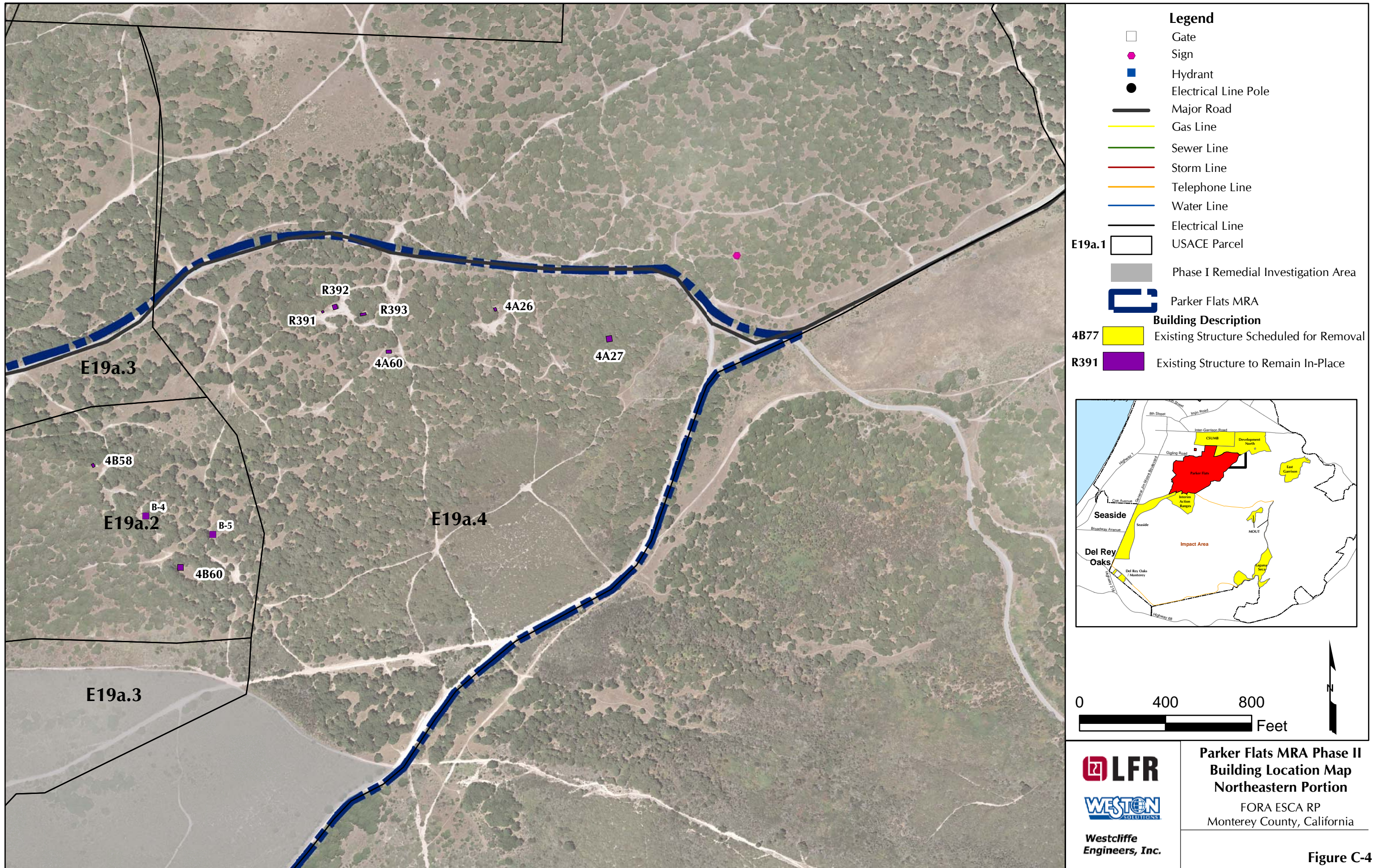


Figure C-4

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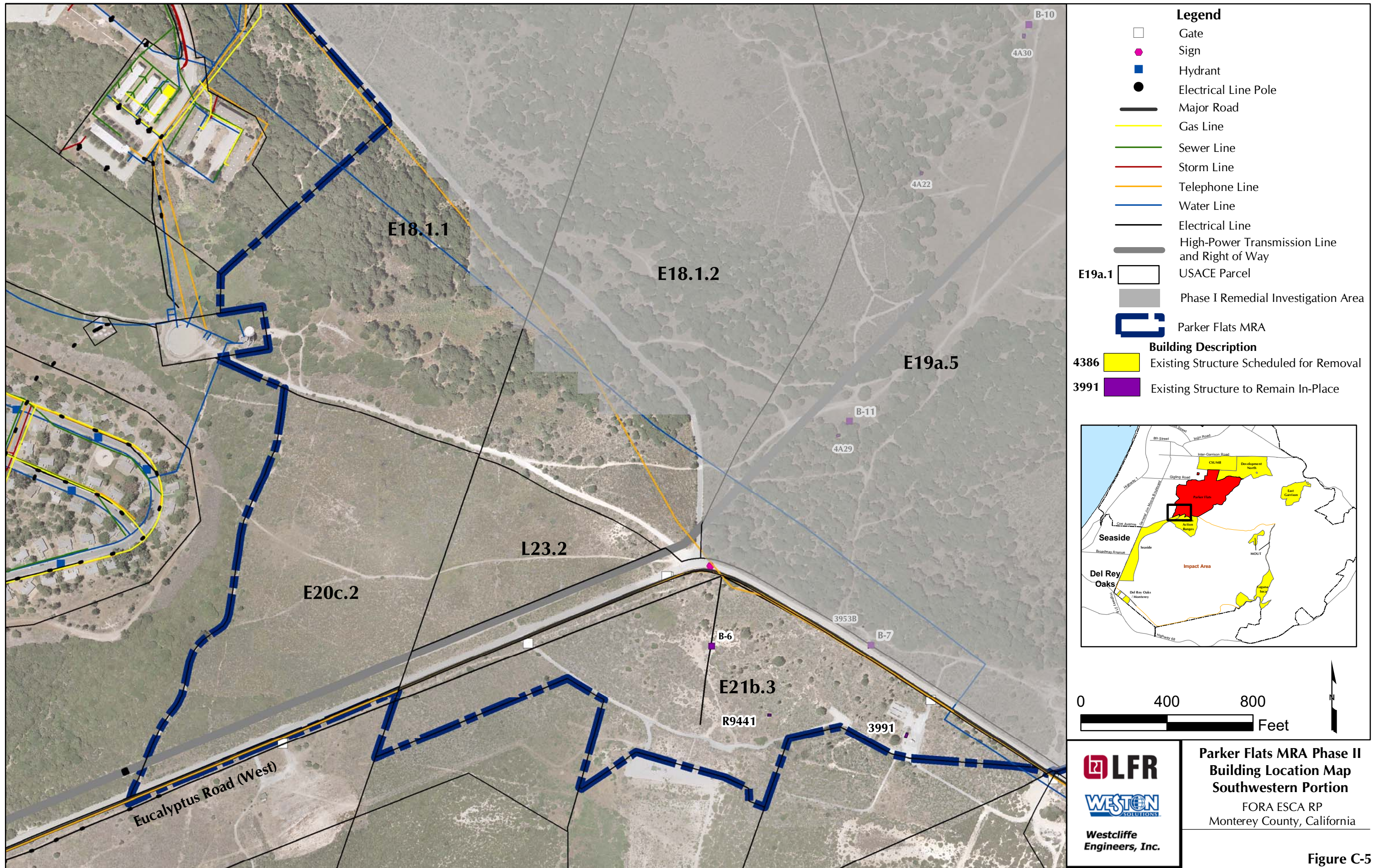


Figure C-5