SFCTA Contract Number 99/00-7

SOUTH ACCESS TO THE GOLDEN GATE BRIDGE

DOYLE DRIVE

DRAFT
THIRD FINDING OF EFFECT ADDENDUM

San Francisco County, US101 KP 12.8-15.7 (PM 8.0-9.8) / SR1 KP10.9-11.4 (PM 6.8-7.1), EA 04-16370

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San Francisco County Transportation Authority

Federal Highway Administration

Caltrans District 4

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Draft
Third Finding of Effect Addendum

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ACRONYMS AND ABBREVIATIONS

ACHP	ADVISORY COUNCIL ON HISTORIC PRESERVATION
APE	AREA OF POTENTIAL EFFECTS
ATP	ARCHAEOLOGICAL TREATMENT PLAN
BETP	BUILT ENVIRONMENT TREATMENT PLAN
CALTRANS	CALIFORNIA DEPARTMENT OF TRANSPORTATION
CEQA	CALIFORNIA ENVIRONMENTAL QUALITY ACT
CFR	CODE OF FEDERAL REGULATIONS
FHWA	FEDERAL HIGHWAY ADMINISTRATION
FOE	FINDING OF EFFECT
GGHTD	GOLDEN GATE BRIDGE HIGHWAY AND TRANSPORTATION DISTRICT
GPR	ROUND PENETRATING RADAR
MIP	MITIGATION IMPLEMENTATION PLAN
NHLD	NATIONAL HISTORIC LANDMARK
NHPA	NATIONAL HISTORIC PRESERVATION ACT
NPS	NATIONAL PARK SERVICE
PA	PROGRAMMATIC AGREEMENT
PRESIDIO	PRESIDIO OF SAN FRANCISCO
SFCTA	SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
SHPO	STATE HISTORIC PRESERVATION OFFICER
TOP	TREATMENT OVERSIGHT PANEL
TRUST	PRESIDIO TRUST
UNDERTAKING	SOUTH ACCESS TO THE GOLDEN GATE BRIDGE–DOYLE DRIVE PROJECT
VA	VETERANS ADMINISTRATION

SECTION 1: INTRODUCTION

1.1 PROJECT OVERVIEW AND REGULATORY CONTEXT

The Federal Highway Administration (FHWA), California Department of Transportation (Caltrans), and the San Francisco County Transportation Authority (SFCTA) have proposed to replace Doyle Drive (the South Access to the Golden Gate Bridge—Doyle Drive Project [undertaking]) in order to improve the seismic, structural, and traffic safety of the roadway within the setting and context of the Presidio of San Francisco (Presidio) and its purpose as a national park. The FHWA serves as the lead federal agency, and the SFCTA serves as the lead agency for the purposes of the California Environmental Quality Act (CEQA). Cooperating agencies for the proposed project are the National Park Service (NPS), the Presidio Trust (Trust), and the Department of Veterans' Affairs (VA). Caltrans and the Golden Gate Bridge Highway and Transportation District (GGHTD) are the responsible agencies under CEQA.

The purpose of this finding of effect (FOE) addendum is to assist the FHWA in its compliance with Section 106 of the National Historic Preservation Act (NHPA) by applying the Criteria of Adverse Effect, set forth in the Code of Federal Regulations (CFR) Title 36, Section 800.5, to specific historic properties within the project's area of potential effects (APE) for which the project's effects may have changed because of project refinements. This document also serves to assist the FHWA in complying with 36 CFR 800.10, Special Requirements for Protecting National Historic Landmarks.

This FOE addendum supplements the information provided in the final FOE for the project that was completed in December 2005 (FHWA 2005). Since that time, project changes have necessitated additional efforts to identify effects on historic properties, namely effects to Halleck Street and to the Mason Street rail lines. As stated in the final FOE, the FHWA has determined that the project will have an adverse effect on historic properties within the project APE pursuant to 36 CFR 800.5(a) and (d)(2) and, with the cooperation and assistance of Caltrans, is consulting with the State Historic Preservation Officer (SHPO) regarding the resolution of adverse effects pursuant to 36 CFR 800.6. The FHWA has notified the Advisory Council on Historic Preservation (ACHP) and the U.S. Secretary of the Interior of the finding of adverse effect upon the Presidio National Historic Landmark (NHLD) pursuant to 36 CFR 800.6(a)(1)(i)(B), thereby affording ACHP the opportunity to participate in consultation. For this FOE addendum, the FHWA is consulting with the Veterans Administration (VA), who manages the San Francisco National Cemetery, and the ACHP, at the VA's request.

This addendum FOE was necessitated by recently obtained design information related to construction of the battery tunnels associated with the project that will alter a historic property located within the APE (Figure 1). The historic property affected is the San Francisco National Cemetery, which is located on the south side of Lincoln Boulevard, west of the Main Post area of the Presidio. Specifically, tunnel construction will require the temporary removal of an iron fence and gate and a portion of a stone wall, both contributors to the NHLD. Battery tunnel construction efforts associated with the project will not permanently adversely affect the cemetery features.

This report is organized as follows: Section 2 presents the identification and description of the cemetery features; Section 3 is the application of the criteria of adverse effect to the cemetery features; and Section 4 presents conclusions of the findings. Figures depicting the APE, historic maps, engineering plans, and photographs are provided in Appendix A as Figures 1–9.

Refer to the final FOE (FHWA 2005), the first FOE Addendum (FHWA 2007), and the second FOE Addendum (FHWA 2009) appendices for additional information, including tables listing all other historic properties within the APE and effects on those historic properties. The final FOE also includes the following documents: a conceptual mitigation plan that has been used as the basis for developing the Programmatic Agreement (PA) to address adverse effects the project will have on historic properties, and a report on the cultural landscape of the Presidio NHLD. However, no mitigation was developed for the San Francisco National Cemetery because no effects were anticipated at the time the FOE and subsequent FOE addenda were developed.

1.2 SUMMARY OF SECTION 106 COMPLIANCE ACTIVITIES

An archaeological survey report and a historic architectural survey report were produced to identify historic resources within the project area (Jones & Stokes and Albion Environmental 2002), and a finding of effect (the final FOE plus the first FOE Addendum) (FHWA 2005, 2007) was produced to determine the effects of the project on the identified historic resources. Following completion and approval of the final FOE, the FHWA continued the Section 106 process with Caltrans, cooperating agencies, responsible agencies, and other interested parties working toward the PA to resolve adverse effects that the project would have on historic properties in the APE.

On August 27, 2008, a PA was executed among the FHWA, the Trust, the NPS, the SHPO, and the ACHP with Caltrans, the VA, the SFCTA, and the San Francisco Recreation and Parks Department participating in the PA as invited signatories. The PA called for a built environment treatment plan (BETP) and an archaeological treatment plan (ATP) to be developed. Both treatment plans were finalized in February 2009 (California Department of Transportation 2009a; ICF Jones & Stokes 2009).

The PA also required completion of a mitigation implementation plan (MIP) that outlines how the treatment plans will be implemented as the details of project design become available (Caltrans 2009b). The MIP was finalized in June 2009. The first bi-annual status report outlining the compliance process to date was completed in September of 2009. Both the bi-annual status report and the MIP were sent to the signatories of the PA in September 2009.

The PA also requires regular meetings among a Doyle Drive Treatment Oversight Panel (TOP). A TOP was formed and includes professionally qualified representatives from Caltrans, the SFCTA, the Trust, the NPS, and other signatories as appropriate. This group has met monthly since January 2009.

The FOE Addenda supplemented the Section 106 activities by identifying and clarifying the nature of the potential adverse effects of subsequent project refinements on historic properties. The final FOE and the FOE addenda outline in detail the effects of the project on historic properties.

1.3 SUMMARY OF RESOURCES AFFECTED

Previous studies resulted in the determination that four historic properties would be adversely affected.

- The Presidio NHLD—Overall district, contributors, and cultural landscape.
- Doyle Drive—The Presidio Viaduct (Bridge 34 0019).
- Doyle Drive—The Marina Viaduct (Bridge 34 0014).

- The Golden Gate Bridge—Doyle Drive as contributor.

It was also determined that one significant resource within the APE, the Palace of Fine Arts, would not be adversely affected.

This FOE Addendum supplements the Section 106 activities that have occurred to date by identifying no adverse effect on a previously documented historic resource that is a contributor to the Presidio NHLD, the San Francisco National Cemetery. This FOE applies specifically to the area of construction activity that is confined to the northern portion of the cemetery between the south curb along Lincoln Boulevard and the first interior road south of and parallel to the cemetery fence (Figure 2). Specifically, there will be no adverse effect to Contributing Resource 3201, the cemetery boundary wall that includes the northwest boundary wall and the iron fence along the south side of Lincoln Boulevard, Contributing Resource 3202, the iron gate on the south side of Lincoln Boulevard, and Contributing Resources 150, 151, 152, 153, and 154, administrative and service buildings of the San Francisco National Cemetery. Section 1.4 of this report provides information on the revisions to the APE to date for the undertaking.

Once this FOE addendum is finalized, the FHWA will notify the VA, the SHPO, and the ACHP that the project refinement will cause no adverse effect to the San Francisco National Cemetery.

1.4 AREAS OF POTENTIAL EFFECTS AND IDENTIFICATION OF HISTORIC PROPERTIES

Early in the project, two APEs were established: one focused on archeological resources and one focused on architectural resources. The SHPO concurred with the FHWA regarding the focused APEs for archaeology and architecture on October 31, 2001. The SHPO reconfirmed on December 17, 2007, that both focused APEs appeared adequate and met the definition of an APE set forth in 36 CFR 800.16(d). Since execution of the PA, the APEs for archaeology and architecture were expanded to include additional project design changes extending outside the previously established APEs. The cooperating agencies concurred with the revised archaeological and architectural APEs on June 8, 2009, July 15, 2009, and November 10, 2009.

Consultation with the SHPO on November 10, 2009 resulted in expanding the APE for archaeology to match the architectural APE, with the stipulations that this expanded APE be valid only for utility relocation efforts associated with the undertaking, that appropriate review of design plans occurs by the undertaking's cultural resources TOP, and that identification, evaluation, and mitigation consistent with the PA and treatment plans developed for the undertaking are carried out.

Six historic properties exist in the architectural and archaeological APEs: the Presidio NHLD, the Presidio Viaduct on Doyle Drive (Bridge 34 0019), the Marina Viaduct on Doyle Drive (Bridge 34 0014), the Doyle Drive portion of the Golden Gate Bridge, archaeological site CA-SFR-6/26, and the Palace of Fine Arts. There are approximately 280 contributing elements of the Presidio NHLD within the APEs. Approximately 70 contributing elements of the Presidio NHLD are in close proximity to the project area and were addressed in the final FOE because of the potential for them to experience an adverse effect under one or more of the alternatives discussed in that document as well as in the BETP and the MIP.

To accommodate the project design of the battery tunnel, The APE was expanded to include the area of construction activity associated with the construction of the tunnel. This expansion includes the northern portion of the cemetery that will incur disturbance from underground construction, installation of temporary fencing, and temporary removal of the iron gate, iron fence, and portion of the western stone boundary. The APE expansion consists of the width of

the northern portion of the cemetery from the curb on the south side of Lincoln Boulevard to the south side of the first interior cemetery road.

1.4.1 Agency and Interested-Party Consultations

Agency and interested-party consultations have been conducted in compliance with the stipulations of the PA. Specifically, monthly meetings of the TOP keep the cooperating agencies informed regarding the project. In September 2009, all signatories of the PA received the bi-annual report of cultural resources compliance efforts associated with the undertaking. The biannual report included the MIP. Updated letters requesting continued consultation were sent to the four Native American representatives who are invited signatories of the PA.

1.5 PROJECT DESCRIPTION

The project description in the final FOE and this FOE Addendum remain the same. Recently it was determined that the recorded northern property boundary of the San Francisco National Cemetery is at the southern edge of pavement of Lincoln Avenue; previously it was assumed to be at the iron fence. The following provides additional detail describing construction that was previously not anticipated as encroaching on cemetery property. Additionally, project refinements have determined that resources associated with the cemetery will be affected.

The work described below will require the construction of a temporary protective fence to temporarily replace the iron fence, gate, and stone wall; the temporary removal of approximately six feet of the western cemetery stone boundary wall to a logical joint so that no stones are cut; as well as the temporary removal of the iron fence and original gate that parallels the south side of Lincoln Boulevard (Figure 2). The stone wall and iron fence are both components of NHLD Contributing Resource 3201, the cemetery's boundary wall; the original iron gate is NHLD Contributing Resource 3202. The pillars for the original iron gate will not be removed, but protected and restored *in situ*. The main entry gate at the eastern end of the cemetery will not be removed but will be repainted *in situ.*

Since completion of the original design for the southbound battery tunnel, changes are under consideration regarding the method being used to construct a temporary shoring system for tunnel construction. The work will encroach into the northern portion of the San Francisco National Cemetery property and will consist of a combination of tieback anchors, soldier piles, and struts (Figures 3). The tiebacks, soldier piles, and struts are elements of the temporary shoring system that are necessary to retain the earth below the cemetery so that the Southbound Battery Tunnel may be constructed.

The original temporary shoring design system consisted of steel soldier piles (vertically oriented beams placed in drilled holes prior to excavating) at six feet on center along the length of the tunnel. Pressure-treated timber lagging would have spanned horizontally between the soldier piles to retain the soil, as the excavation proceeded. The piles would have been braced (propped) at three locations along their height by steel struts that span across the excavation to the wall on the opposite side.

An alternative method under consideration for construction of the temporary shoring system would replace some struts with tiebacks, and would reduce obstructions presented by the struts. Changing some struts to tiebacks would also decrease the duration of construction activities on the overall project, thereby decreasing the duration of impacts to the San Francisco National Cemetery.

Should this construction method be used, the top row of tieback anchors will be located so that they will pass a minimum of 20 feet below the existing grade of the cemetery at the location of the historic iron fence. The tieback anchors will be placed at a downward angle of 15 degrees off horizontal from the outside surface of the soldier pile and will be embedded a maximum of 60 feet on a horizontal projection. Should this construction method be used, these tiebacks will be permanent in that they will remain in the ground in their stressed condition; they are not needed once the tunnel is completed. If, in the future, they are encountered during construction on the cemetery property, they may be cut and removed without a detrimental impact on the tunnel or the surrounding ground. The proposed layout plan is depicted in Figure 4.

Some soldier piles will be located partially south of the iron fence, on VA property, at the northwest corner of the cemetery where the proposed tunnel wall converges to within 18 inches of the cemetery fence. The current design at this location uses shallow, closely spaced soldier piles (“tangent piles”) located outside the cemetery fence line and braced, as elsewhere, with struts. The piles will be set into the ground vertically and will be located approximately 24 inches inside the fence line, requiring the temporary deconstruction of an approximately 6-foot length of stone boundary wall. The soldier piles will be permanent but the top of each pile will be cut and removed four feet below the final grade once the tunnel is completed.

The entire iron fence paralleling Lincoln Boulevard and the western iron gate will be removed temporarily to protect it during tunnel construction. Upon removal, a temporary construction fence will be installed in line with the iron fence and gate. This temporary construction fence will also function to protect the cemetery during construction activities. All tunnel construction work will take place to the north of the construction fencing.

SECTION 2: SAN FRANCISCO NATIONAL CEMETERY

The San Francisco National Cemetery is specifically called out in the 1993 NHLD Registration Form update as a contributing site of the Presidio NHLD. The cemetery's stone boundary walls and the iron boundary fence are listed as Contributing Resource 3201 in the Presidio NHLD update (Alley et al. 1993). The original iron gate is listed as Contributing Resource 3202. The entire cemetery lies within the undertaking's architectural APE. The northern portion of the cemetery, from the south side of Lincoln Boulevard to the first northern interior cemetery road, is situated within the undertaking's archaeological APE. The historical development of these resources and the San Francisco National Cemetery (particularly the northern portion of the cemetery site) is discussed below.

2.1 NORTHERN PORTION OF THE SAN FRANCISCO NATIONAL CEMETERY: HISTORY AND DEVELOPMENT

The current boundary of the San Francisco National Cemetery at the Presidio of San Francisco encompasses one of at least two areas recognized as graveyards during the mid-nineteenth century. A graveyard dating to the Spanish period was located northeast of the current VA cemetery and just west of the Post developed by the U.S. Army after it undertook long-term occupation of the Presidio of San Francisco in 1847. The original Spanish cemetery site was located adjacent to the northeasterly row of nine laundress quarters constructed in the early 1860s west of the barracks, which would eventually mark the northwestern Main Parade Grounds. The original cemetery site was marked by a small cross on one of the Army Corps of Engineers survey maps of the Presidio (Wheeler 1870) (Figure 5). It is unclear whether any U.S. soldiers were interred at this site (Thompson and Woodbridge, 1992; Thompson 1997; Wheeler 1870).

By 1854, Army personnel had begun burying their deceased west of the modest Spanish-era cemetery grounds, at a location that was expanded over subsequent decades. In 1884, the War Department issued General Orders 133, designating a 9.5-acre area encompassing the second graveyard site a fourth-class national cemetery: San Francisco National Cemetery (Figure 5). In 1896, the War Department issued General Orders No. 7, which added 15.5 acres to the San Francisco National Cemetery. This so-called "New Addition" parcel was situated along the northwest edge of the cemetery's 1884 boundaries, southeast of the Fort Scott Road curve (now Lincoln Boulevard) in the vicinity of the present project. The 1896 expansion and upgrade of the San Francisco National Cemetery came at an important moment: during subsequent years, the Spanish-American War and the Philippine Insurrection dramatically increased U.S Army activity at the Presidio and in the western Pacific, which also increased the number of burials at the cemetery. In 1904, the War Department raised the cemetery from fourth-class to first-class status (Kimball 1895; Thompson 1997; Thompson and Woodbridge 1992).

Between 1896 and 1904, when the War Department raised the cemetery's status, several of the site's rubble-stone boundary walls were relocated and extended. The pre-1896 western wall was dismantled and used to extend the southern boundary wall to the west. Stone hauled from Alcatraz Island provided material for construction of a new west-perimeter wall running southwest-northeast. This west wall appears to have been connected to a 15-to-20-foot-long wall running east-west which, in turn, connected to a northern boundary wall (both built at that time, no longer extant). Following a line south of and roughly parallel to present-day Lincoln Boulevard, the northern wall extended approximately 100 yards in an easterly and slightly southerly direction from the 15-to-20-foot wall section running east-west. From the turn of the

century to the 1930s, repeated land additions significantly expanded the cemetery boundaries to the south (Figure 6) (Alley et al. 1993; Hartz 1915; San Francisco National Military Cemetery ca. 1930).

After World War I, the Army constructed several buildings on the northern cemetery grounds in the area south of present-day Lincoln Boulevard. These included a small mortuary constructed in 1921 (Building 150); a lodge originally constructed as a caretaker's residence ca. 1885 and remodeled in the Mission Revival style in 1929 (Building 151); restrooms built in 1929 (Building 152); two garages built in 1934 (Building 153); and garages/maintenance buildings constructed in 1929 (Building 154). These various construction and remodeling efforts resulted in a concentration of buildings at the northeastern cemetery grounds that feature the Spanish and Mission Revival architectural styles that have stamped the character of the built environment throughout much of the Presidio. (Alley et al. 1993; Thompson 1997).

Written documents (as opposed to maps and plans) indicate that the cemetery's northwestern wall and fence arrangement took its current form in 1929. That year, the Quartermaster spent $4,880 undertaking the final major alterations to the cemetery's northern boundary walls, fences, and gates. Crews dismantled the northern wall running parallel with Lincoln Boulevard and used the constituent materials to extend the northern portions of the cemetery's western and eastern boundary walls. The Quartermaster relocated the extant northern iron fence, incorporating it into a new, expanded fence line running the length of the cemetery's northern boundary along Fort Scott Road (Lincoln Boulevard) (Figure 7). The main gate of the northern cemetery's eastern entrance was also relocated at this time to the western north on the south side of Lincoln Boulevard. During the early 1930s, a new gate was constructed at the eastern entrance, and the cemetery's macadam roads were replaced with asphaltic concrete. (Alley et al.1993; Quartermaster Corps, 1938, 1945; San Francisco National Military Cemetery, ca. 1930; Thompson 1997; Thompson and Woodbridge 1992).

Changes to the northwestern grounds of the National Cemetery after 1930 appear to have been limited to a relatively modest northwesterly extension of the grave plots and thinning of the historic forest in this area. In 1930, the Presidio's 9th Corps took over administrative responsibility for the National Cemetery from the Quartermaster Supply Officer at Fort Mason.

In 1935, the iron fence along Lincoln Boulevard required major repairs after portions of it were crushed by Monterey cypress trees that fell during a storm. The Quartermaster reported that an additional 28 Monterey cypresses on the cemetery grounds were uprooted in storms during the years 1937–38 and 1946 (Thompson n.d.). An aerial photo dated 1948 indicates that in addition to the dense, multiple rows of eucalyptus trees lining the northwestern border of the cemetery, a single row of five to six trees, which appear to have been eucalyptus, also lined the ground at the northwest corner of the San Francisco National Cemetery between the northerly (northwest-southeast running) cemetery road and Lincoln Boulevard. (U.S. Army Air Force Aerial Photo, 1948.) A subsequent aerial photo taken in 1958 indicates that by that year, two trees of unknown type but large enough to be clearly visible stood in this area. These two trees flanked each side of the western cemetery entrance gate along Lincoln Boulevard (Aerial Photo, 1958). Comparison of the 1958 aerial photo and present-day Google Earth satellite images of the area indicates that the trees visible in the 1958 photo were positioned differently from the two incense cedar trees that were recently removed to facilitate construction.

In 1947 the Army opened the Golden Gate National Cemetery at San Bruno and announced that the San Francisco National Cemetery, which had by then received 22,000 interments, was closed to further burials due to lack of plots. However, additional burials did subsequently take place at the most northwesterly corner of the site, near the project. In 1958, the Quartermaster transferred two small strips of land at the cemetery's northwest corner to the Presidio's then-

presiding 6th Army command (Figure 8). These were the areas that were formerly lined by a row of what appear to have been eucalyptus. These two strips of land appear to have provided for westerly extensions of several grave rows bordered by the historic iron fence along Lincoln Boulevard to the north, the historic northern stone boundary wall to the west, and the east-west–aligned cemetery road to the south (Figure 9-1). The gravestones that line the small strip of land at the cemetery's northwestern corner date from the 1980s to the present. (Morrison 1961; Thompson 1997.)

Signed by President Richard Nixon in 1973, the National Cemeteries Act transferred 82 of the United States' 84 national cemeteries—including the San Francisco National Cemetery—from the U.S. Army to the VA (Thompson 1997). When the Presidio Trust was established in 1996, the VA retained responsibility over the cemetery.

2.2 EXISTING CONDITION OF THE SAN FRANCISCO NATIONAL CEMETERY

The addition of land to the northwestern portion of the cemetery in the early 1930s marked the end of expansion at the San Francisco National Cemetery. The current area of the cemetery stands at 28.3 acres. In 1973, the Veteran's Administration officially closed the cemetery to new interments with the exception of subsequent interments for veterans or eligible family members in an existing gravesite. A description of the existing condition of the portion of the cemetery included in this FOE is presented below.

2.2.1 Iron Fence and Western Gate

The northern cemetery fence and western gate are composed of cast iron and wrought iron. The length of the fence (including the gate) measures approximately 800 feet and curves to follow the curve of Lincoln Boulevard. The fence is approximately 4.5 feet tall. The fence is comprised of 97 segments measuring 8 feet in length. Each segment is made up of 15 slender, finial-topped spears flanked on each end by a more substantial finial-topped post. These vertical elements are united by three rows of horizontal elements: a top rail, a middle lock rail, and a lower foot rail. Each rail attaches to a segment post with iron brackets and screws. Each segment shares a post with its adjacent segment. Posts are secured in the ground with concrete.

Every third segment is supported by an iron brace attached to a post and anchored in the ground with concrete to help keep the fence erect (Figures 9-2 and 9-3). The fence attaches to the western stone wall and the eastern main gate with pairs of iron brackets and bolts that secure each rail to the stone wall and masonry main gate post (Figures 9-4, 9-5, and 9-6). The general condition of the fence is poor. Numerous coats of cracked and peeling paint are visible along the fence. Areas of the fence where the iron is exposed display moderate to severe corrosion caused by water exposure and lichen and moss growth. A number of fence elements are bent, some connecting brackets are loose, and many finials are partially or completely broken off. Refer to Appendix B for a detailed description of fence conditions.

The iron western gate is composed of a main double gate for vehicle entry flanked on each side by single pedestrian gates. The entire gate measures approximately 28 feet wide. Visually, the top of the gate has a curvilinear outline, with the pedestrian gates following concave curves that sweep up and over to form a convex curve at the top of the vehicle gate. The vehicle gate is approximately 8 feet tall and is flanked by visually robust gate posts. Each pedestrian gate is flanked by a less visually robust outer post. Decorative elements on the vehicle gate include five rows of finials above a panel of decorative fretwork. Below this panel is a base panel of four-petal rosettes. There is a finial-topped gate stop on the eastern vehicle gate. Decorative

elements of the pedestrian gates include three rows of finials above a decorative fretwork panel and base panel of rosettes. Decorative elements of the gate posts include finials, panels symbolizing military strength and victory, and abstract designs.

The vehicle gate possesses a lock assembly, and each pedestrian gate possesses a gate handle with lock assembly. The condition of the western gate is generally poor. Several layers of peeling and chipped paint are apparent, and exposed areas display moderate to severe corrosion. Additional poor conditions include failing hinges, corroded handles and locks, structural cracks in the gate posts, and broken or missing finials and fretwork (Figures 9-7 through 9-13). Refer to Appendix B for a detailed description of gate conditions.

2.2.2 Western Stone Boundary Wall

An approximately six-foot-long segment of the western boundary wall is included in this FOE. The wall is composed of random course stone masonry. The stones are unevenly sized sandstone blocks joined with mortar and topped with sandstone capstones. The wall is approximately 18 inches wide and is accentuated with dados occurring at the northern end of the wall and at approximately 15-foot-long intervals. The width of the wall at each dado is approximately 24 inches wide. The capstones are approximately 22 inches wide over the wall and 28 inches wide over the dados, and vary in length. The capstones are arranged in a reticulated fashion. The height of the wall varies due to the natural slope of the cemetery grounds. The northern end of the wall is 37 inches high, reducing in height to 27 inches at a spot 15 feet south of the north end of the wall. The mortar seams are formed to create smooth, concave joints between stones. Copper plates are laid beneath each capstone joint to facilitate water drainage. The overall condition of the wall is good, although there is some spalling of the exterior sandstone blocks. Lichen and moss are present over much of the wall (Figures 9-14 and 9-15).

2.2.3 Cemetery Grounds

The cemetery grounds consist primarily of lush green grass from the south curb of Lincoln Boulevard to the north curb of the cemetery's first interior road. Ornamental landscaping around the cemetery buildings includes pyracantha and other evergreen shrubbery. West of the administrative and service buildings, interments are marked by upright headstones. Interments south of the main building are marked by flat headstones embedded flush with the lawn. Interments north and east of the administrative and service buildings are a combination of upright and flat headstones (Figures 9-16 and 9-17).

2.2.4 Cemetery Buildings

The five buildings included in this FOE (Buildings 150, 151, 152, 153, and 154) all appear to be in good condition. Condition assessments for each of these buildings are in preparation as part of the undertaking (Figures 9-18 through 9-22).

2.2.5 Additional Efforts to Identify Existing Condition of the San Francisco National Cemetery

Because the southbound Battery Tunnel will be constructed in very close proximity to the cemetery, studies were undertaken to determine if additional, unmarked features exist beyond the stone wall and iron fence outside the cemetery boundary. On October 7, 2009, specialists in

subsurface geophysical survey techniques completed ground penetrating radar (GPR) and magnetometer studies. The study transects were carried out parallel to the south edge of Lincoln Boulevard, along the north side of the cemetery's iron fence and continuing west of the cemetery past the northwestern stone boundary wall. Each study also included a control transect on the south side of the cemetery fence, in order to compare data signatures from known subsurface features to the data from the study transect readings.

The GPR data produced clear readings with no interference. A control transect detected marked graves within the cemetery, south of the iron fence, as expected. During the formal survey on the north side of the iron fence, no graves or any other subsurface features, other than utility lines, were detected. No anomalies other than utilities were detected west of the stone wall.

The magnetometer survey results proved to be unreliable and unusable because of magnetic interference from the iron fence, buried high-voltage lines, and car traffic. The magnetometer data collected from the formal survey on the western edge of Lincoln Boulevard, west of the cemetery wall, displayed a few large anomalies. The size of each anomaly is much larger than that of a gravesite, and they appear to be associated with either the car traffic present during the survey or with buried electrical lines in the area. None of those anomalies are within 40 feet of the cemetery.

Data from the GPR and magnetometer studies indicate that no unmarked buried features associated with the cemetery lie outside of the present cemetery boundary wall and iron fence. There is no evidence that construction of the temporary shoring for the southbound Battery Tunnel will come into contact with any gravesites associated with the cemetery. Reports detailing the GPR and magnetometer studies are presented in Appendix C.

SECTION 3: APPLICATION OF CRITERIA OF ADVERSE EFFECT

Under Section 106 of the NHPA, an agency will assess the effects on historic properties in accordance with 36 CFR 800.5 *Assessment of Adverse Effects*.[1] The NHPA defines an effect as an alteration to the characteristics of a historic property that qualify it for inclusion in or eligibility for the NRHP:

> An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative.[2]

The criteria of adverse effect are applied to all historic properties within the APE, with consideration given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the NRHP. The criteria of adverse effect are used as a threshold for determining whether a project will have an adverse effect or no adverse effect (i.e., does a project diminish a property's integrity or not). In this instance, the entire Presidio NHLD is the historic property consisting of numerous contributing resources (buildings, structures, archaeological sites, etc.).

The integrity assessments for the Presidio NHLD that are used to support the finding of effect in this assessment are presented in Section 3 of this document.

According to 36 CFR 800.5, an adverse effect on a historic property includes, but is not limited to:

i. Physical destruction of [sic] damage to all or part of the property

ii. Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR part 68) and applicable guidelines

iii. Removal of the property from its historic location

iv. Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance

v. Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features

vi. Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization

[1] 36 CFR 800.4[d][2]

[2] 36 CFR 800.5[a][1]

vii. Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance [3]

3.1 ADVERSE AND CUMULATIVE ADVERSE EFFECTS

A direct effect is one that acts on the physical material of a property, such as demolition, relocation, additions, deterioration, etc. An indirect effect is one that acts on an intangible element of a property, such as a viewshed, visual relationship, ownership, or management practices. According to 36 CFR 800.5(a)(1) "adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative."[4] Assessing effects for a particular project depends on evaluating the property's integrity as "the ability of a property to convey its significance." Past projects are considered because a series of actions could gradually erode a property's integrity. An effects assessment, therefore, examines the effects of a project within a broader cumulative context.

3.2 EFFECTS ON THE PRESIDIO NATIONAL HISTORIC LANDMARK DISTRICT

The project undertaking will have a direct though temporary effect on portions of Presidio NHLD Contributing Resource 3201, the San Francisco National Cemetery's boundary walls and fence, and Contributing Resource 3202, the cemetery's original iron gate. The temporary effects consist of temporary deconstruction, alteration, and removal of the contributing iron fence, gate and stone wall. Specifically, these effects will occur on the north end of the historic stone wall at the cemetery's western boundary, and on the historic iron fence and gate marking the cemetery's northern boundary along Lincoln Boulevard. Treatment procedures carried out during the project undertaking will ensure that when construction is completed, the wall, fence, and gate will retain their constituent materials, stand at their current locations, and continue to convey their historical significance.

None of the grave sites in the cemetery will be disturbed by the project undertaking. Additionally, the cemetery will remain open throughout construction. Should a burial be scheduled, construction will cease or be redirected for the duration of the ceremony. No construction will occur on Memorial Day or the Saturday prior to Memorial Day.

3.2.1 Conditions Proposed to Avoid Adverse Effects

Fence and Wall Protective Measures

In order to protect the cast- and wrought-iron fence and gate of the San Francisco National Cemetery during the construction of the southbound Battery Tunnel, the iron fence, in its entirety, will be removed and stored in a secure location for the duration of the project. The original iron gate also will be removed and stored in a secure location. The pillars on which the western iron gate are set will remain in place. The main cemetery gates located at the northeast corner of the cemetery will remain in place. Additionally, an approximately six-foot-long section of the masonry boundary wall at the northwest corner of the cemetery will be dismantled to a

[3] 35 CFR 800.5(a)(2), Assessment of Adverse Effects, incorporating amendments effective August 5, 2004.

[4] 36 CFR 800.5[a][1]

logical joint and stored as well. The stones from the masonry boundary wall will be stored on the cemetery grounds.

The iron gate and fence will be restored, with retention of as much of the original materials as possible, or with suitable substitute material, as appropriate. Paint will be removed, corroded and missing portions of the fence and gate will be replaced in kind, and the fence and gate will be repainted and re-installed in the same location and in the same order as they currently stand. The gate pillars will be restored *in situ*.

The stone wall will be taken back to a logical joint, removed, and stored in a secure location for the duration of the project. The wall will be reinstalled in the same location and the stones will be set in the same order as it currently stands. The wall will be rebuilt with mortar that matches the rest of the wall.

The work will be conducted by a contractor or contractors, as appropriate, with demonstrable experience in working with historic ironwork and historic masonry. The contractor's qualifications will be reviewed by the TOP, as described in the BETP, which includes historic preservation professionals from Caltrans, the Presidio Trust, the NPS, and consultants to the SFCTA. The VA may also participate in the contractor selection if they so choose.

The selected contractor(s) will prepare a written proposal detailing the method by which the fence and masonry wall will be dismantled, recorded, stored, restored, and eventually reinstalled. The proposal will be reviewed and approved by either an architectural historian or historical architect who is professionally qualified according to the Secretary of the Interior's standards, and will follow the *Secretary of the Interior's Guidelines for the Treatment of Historic Properties* (Weeks and Grimmer 1995). A qualified architectural historian will monitor the work.

The work will be conducted prior to any construction activity in the vicinity. A protective construction fence will be installed as the historic fence is removed. The construction fencing will be 8-inch chain link fencing with slats to obscure the view of construction and to prevent construction debris from entering the cemetery. Protective fencing will remain and be maintained throughout the duration of construction and will be removed in conjunction with landscape rehabilitation. The stored fencing and stone will be reinstalled concurrently with the landscape rehabilitation and replacement of Lincoln Boulevard.

Historic Building Protective Measures

The FHWA and the construction contractor are currently completing pre-construction condition assessments of building nos. 150, 151, 152, 153 and 154. Caltrans has conducted three-dimensional laser scans of the buildings and the landscape between the iron fence and the cemetery's first interior road. During construction, each building will be monitored for changes in elevation and for vibration effects, for the purpose of keeping vibration below a predetermined level.

Grounds Protective Measures

The current contract groundskeeper will be contracted to provide any additional maintenance in the cemetery resulting from construction activity, including keeping headstones in the vicinity of the work area clean. The cemetery grounds will be restored from the south curb of Lincoln Boulevard to the location of the iron fence after construction is complete.

The treatment of these contributing resources to the Presidio NHLD and the cemetery grounds does not constitute physical destruction of part of the Presidio NHLD. Therefore the project

refinements described in this FOE report will have no adverse effect on these contributors to the Presidio NHLD (36 CFR 800.5[a][3][b]).

3.3 CUMULATIVE EFFECTS ON THE PRESIDIO NATIONAL HISTORIC LANDMARK DISTRICT

Cumulative effects on the Presidio NHLD were addressed in the final FOE. The analysis in the final FOE considered the potential for the project, in combination with known past, present, and future projects in the area, to adversely affect the Presidio NHLD. The final FOE concluded that the Presidio Parkway Alternative (now known as the preferred alternative or proposed project) would result in an adverse cumulative effect on the Presidio NHLD. In summary, this conclusion found that the alternative would introduce new structural and visual elements into a part of the Presidio NHLD that has already lost historic integrity through the demolition of contributing buildings and structures. The viaducts, tunnels, and at-grade portions of the preferred alternative that would be constructed in the northeast corner of the Presidio NHLD would not resemble the existing Doyle Drive facility in overall location, massing, and scale. Furthermore, the preferred alternative would require the destruction of additional contributing elements as described in addenda FOEs.

The temporary removal, restoration, and reinstallation of the iron fence and gate, the deconstruction, storage, and reconstruction of a segment of the western stone boundary wall, monitoring of contributing administrative and service buildings, and restoration of cemetery grounds of the San Francisco National Cemetery would not result in destruction of a contributing element to the Presidio NHLD. Therefore, no cumulative effects would result from this project refinement. The refinements to the preferred alternative do not alter the conclusions presented in the final FOE.

SECTION 4: CONCLUSION

The project refinements described in this FOE report would not cause adverse effects on the Presidio NHLD, the cultural landscape, and individual contributors to the Presidio NHLD. Although the refinements will cause the temporary removal of the north-facing iron gate, the northern iron boundary fence, and a portion of the western stone boundary wall, the following conditions will be imposed on the undertaking: the emplacement of protective fencing along the northern boundary of the San Francisco National Cemetery in tandem with the removal and storage of the iron fence, western gate, and northern stone boundary wall, and restoration of these features according to the *Secretary of the Interior's Standards for Treatment of Historic Properties* (Weeks and Grimmer 1995). Additionally, contributing buildings will be monitored during construction to keep elevation changes and vibration effects to acceptable levels. Landscape rehabilitation of the cemetery grounds between the iron fence and the southern curb of Lincoln Avenue will occur after construction is complete. Therefore, the project refinement discussed in this document will have no adverse effect on contributing resources to the Presidio NHLD (36 CFR 800.5[a][3][b]).

SECTION 5: REFERENCES

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U.S. Army Air Force
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APPENDIX A: FIGURES

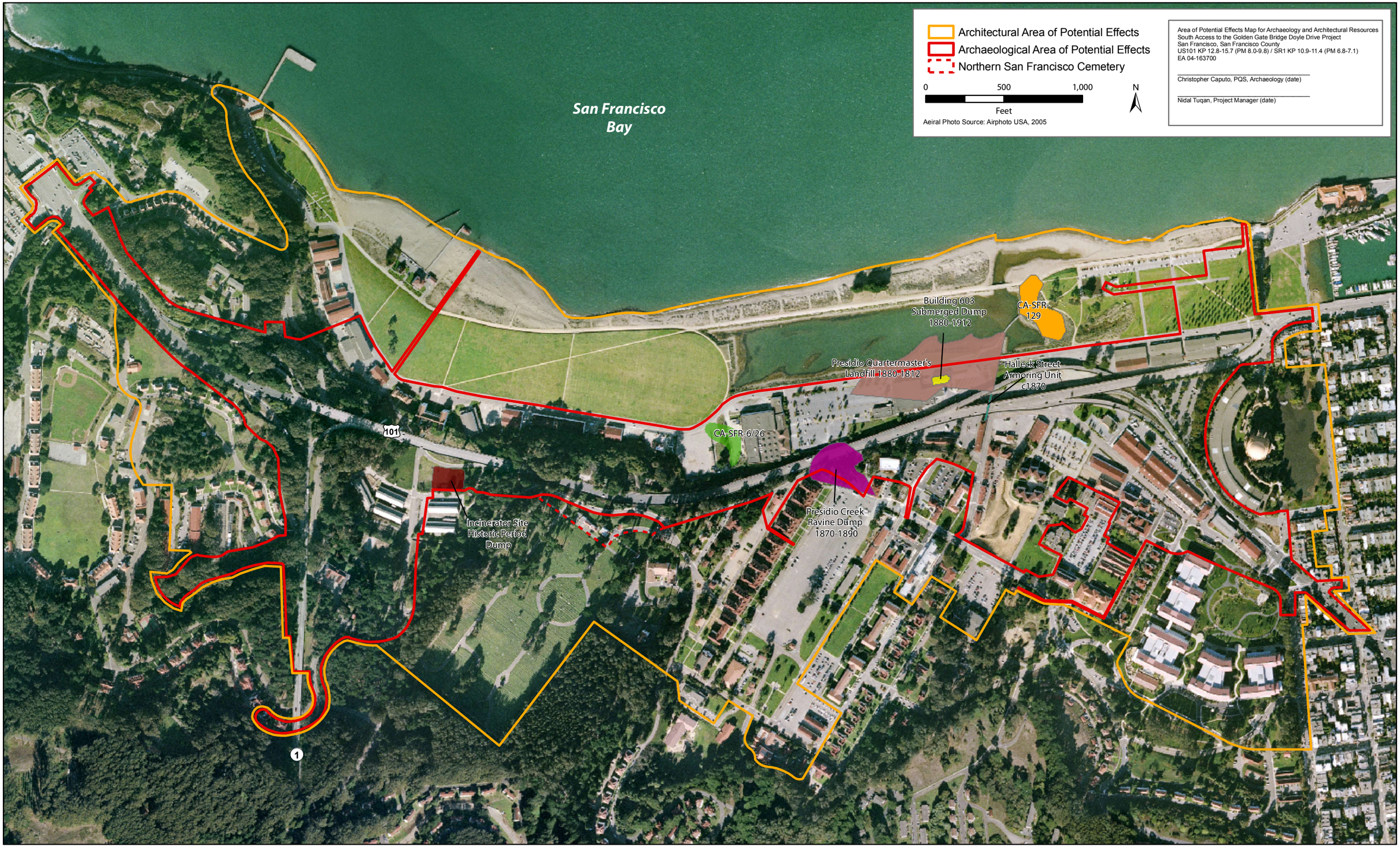
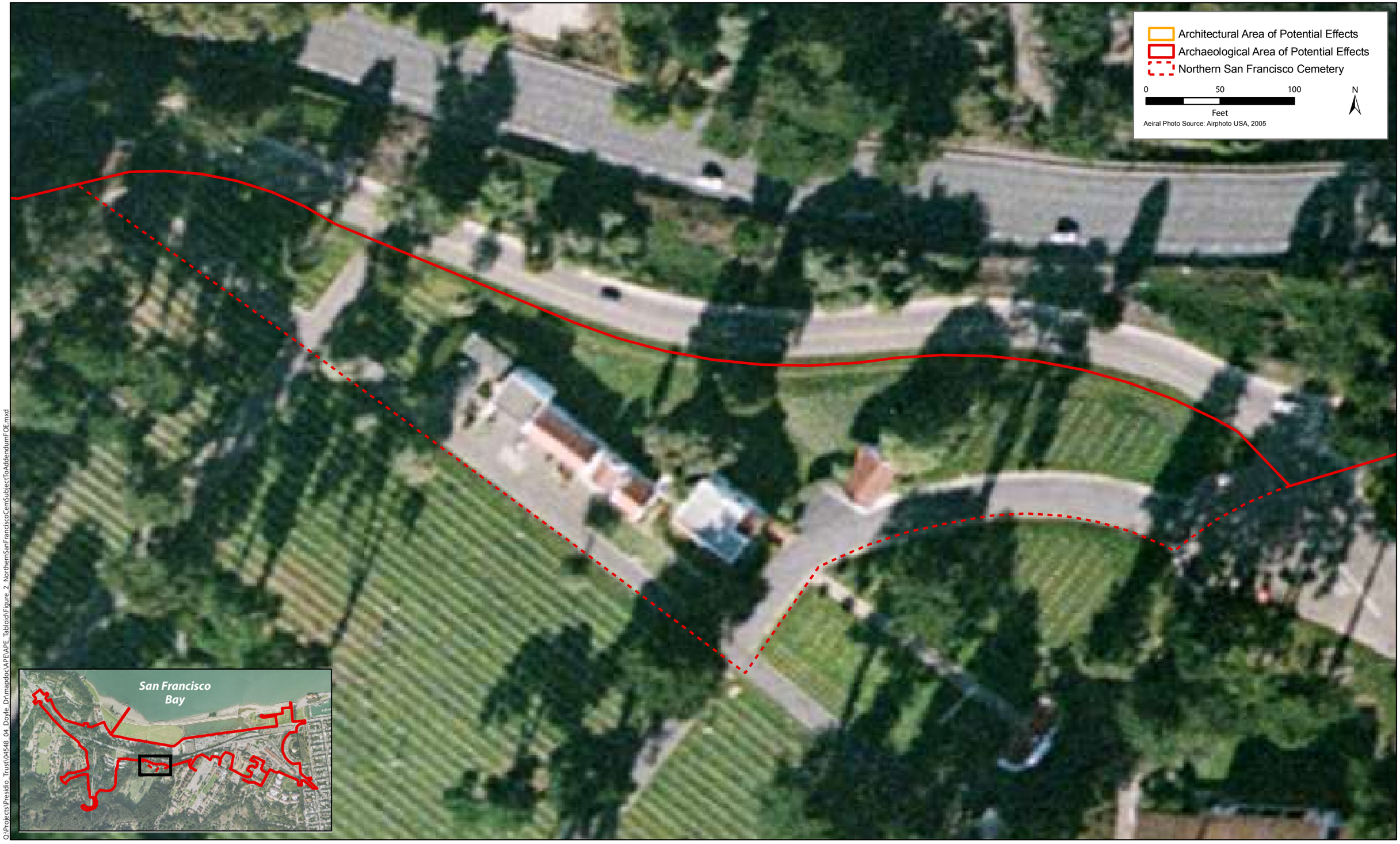


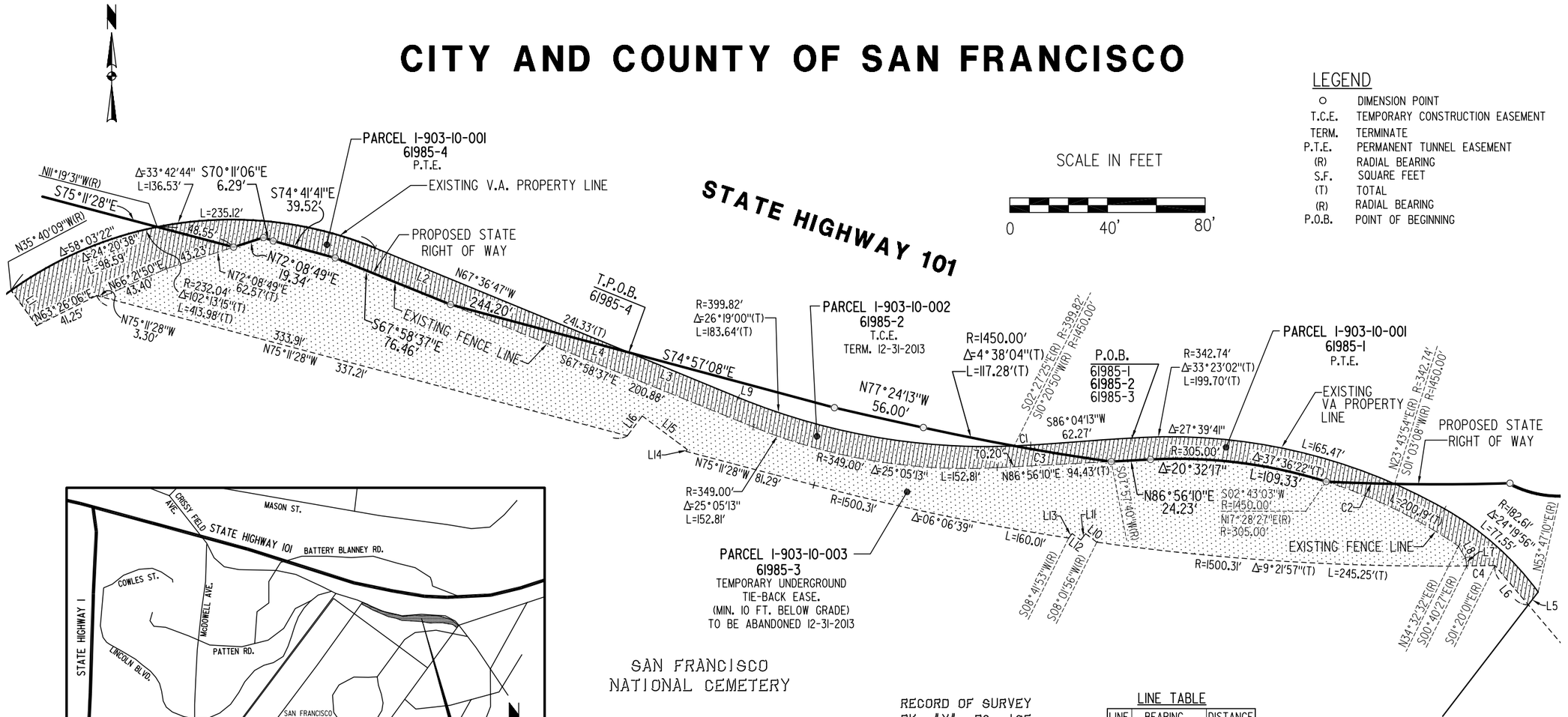
Figure 1
Area of Potential Effects



Q:\Projects\Presidio_Trust\04548_04_Doyle_Dr\mapdoc\APE\APE_Tabloid\Figure_2_NorthernSanFranciscoCemSubjectToAddendumFOE.mxd

Figure 2
Northern San Francisco National Cemetery
Subject to the Addendum FOE

CITY AND COUNTY OF SAN FRANCISCO



VICINITY MAP
(NOT TO SCALE)

A-10434.2

SAN FRANCISCO
NATIONAL CEMETERY

RECORD OF SURVEY
BK. "Y"; PG. 125

LEGEND

○	DIMENSION POINT
T.C.E.	TEMPORARY CONSTRUCTION EASEMENT
TERM.	TERMINATE
P.T.E.	PERMANENT TUNNEL EASEMENT
(R)	RADIAL BEARING
S.F.	SQUARE FEET
(T)	TOTAL
(R)	RADIAL BEARING
P.O.B.	POINT OF BEGINNING

CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH
C1	399.82'	01°28'21"	10.28'
C2	1450.00'	01°39'55"	42.14'
C3	1450.00'	02°23'10"	60.38'
C4	1500.31'	00°39'34"	17.27'

LINE TABLE

LINE	BEARING	DISTANCE
L1	S35°54'29"E	26.73'
L2	S67°36'47"E	168.54'
L3	S67°36'47"E	72.79'
L4	S74°57'08"E	113.40'
L5	N37°30'43"E	9.94'
L6	N40°20'38"W	31.72'
L7	S09°09'42"E	4.87'
L8	N30°13'07"W	8.49'
L9	S74°57'08"E	130.80'
L10	N52°56'55"W	8.68'
L11	S37°02'54"W	4.89'
L12	N52°56'50"W	6.61'
L13	S37°03'03"W	3.48'
L14	N36°49'45"E	1.31'
L15	N53°10'22"W	34.54'
L16	N36°49'46"E	15.28'

PARCEL	GRANTOR	REMARKS
PARCEL 1-903-10-001 (61985-1)	U.S.A.-V.A.	2,518 S.F. PERMANENT TUNNEL EASEMENT
PARCEL 1-903-10-001 (61985-4)	U.S.A.-V.A.	3,248 S.F. PERMANENT TUNNEL EASEMENT
PARCEL 2-903-10-002 (61985-2)	U.S.A.-V.A.	15,372 S.F. TEMPORARY CONSTRUCTION EASEMENT, TERM. 12-31-2013
PARCEL 3-903-10-003 (61985-3)	U.S.A.-V.A.	49,552 S.F. TEMPORARY UNDERGROUND TIE-BACK EASEMENT (TO BE ABANDONED 12-31-2013)

STATE OF CALIFORNIA
BUSINESS, TRANSPORTATION AND HOUSING AGENCY
DEPARTMENT OF TRANSPORTATION
DISTRICT 04

SAN FRANCISCO NATIONAL CEMETERY

EXHIBIT A

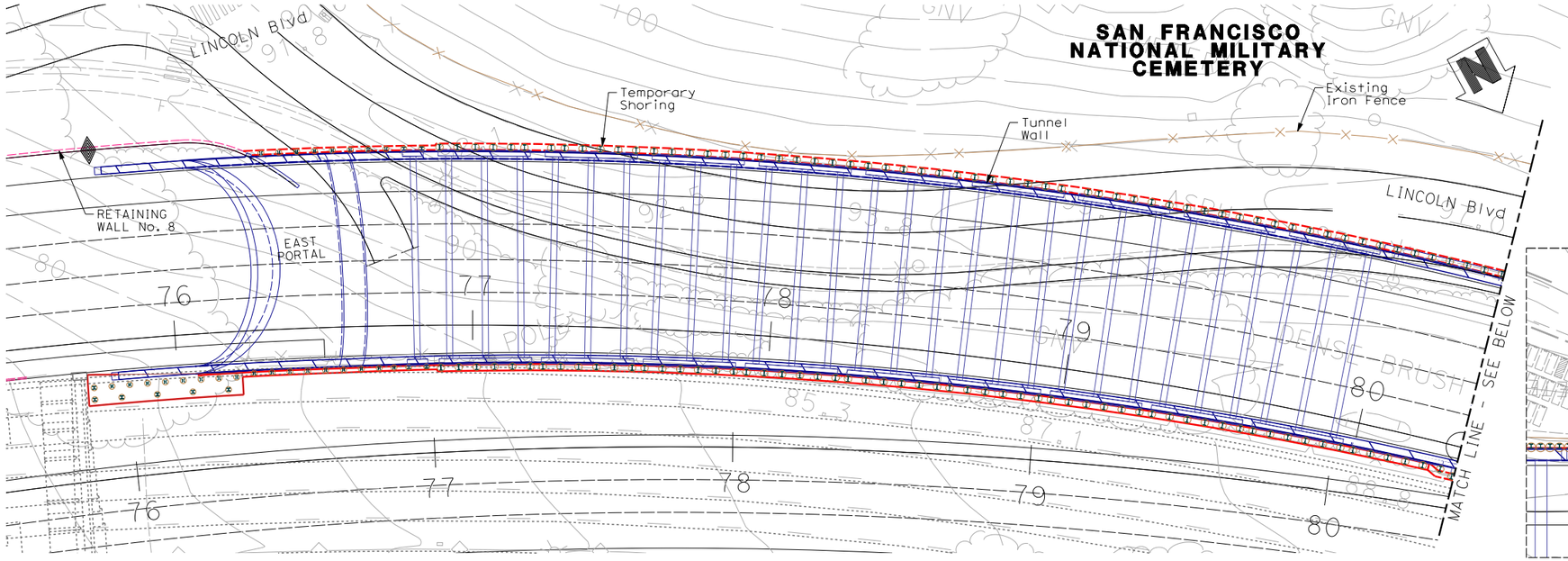
PERPETUAL EASEMENT NO.
MSN V 903-10-001
TEMPORARY EASEMENT NOS.
MSN V 903-10-002
MSN V 903-10-003

DR. BY: J.Z.		DATE: 01/2010
CH'D BY: J.Z.		SCALE: 1"=40'
CO.	RTE.	DWG. NO.
S.F.	101	1 OF 1

Source: Caltrans 2010.

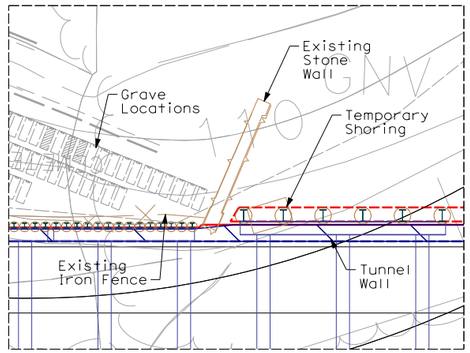
Graphics ... 01108.07-010 (2-10)

Figure 3
VA Easement for Caltrans Tunnel Project



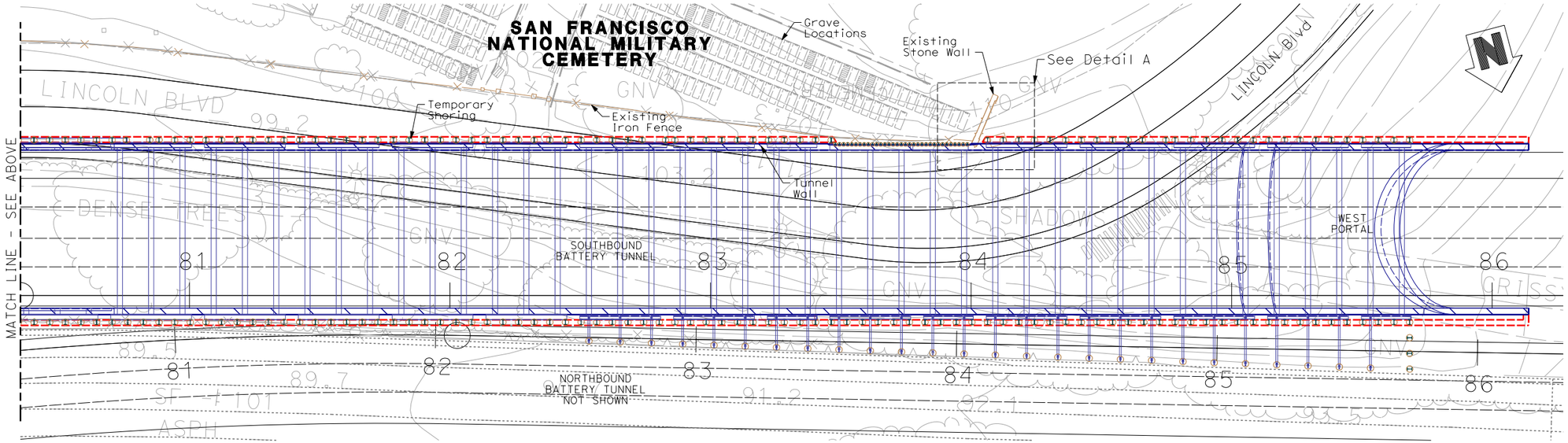
LEGEND

- TUNNEL WALL
- TEMPORING SHORING
- DRILLED HOLE WITH WIDE FLANGE



DETAIL A

SCALE: 1" = 10'



PLAN

20' 0' 20' 40'

SCALE: 1" = 20'

DOYLE DRIVE REPLACEMENT PROJECT

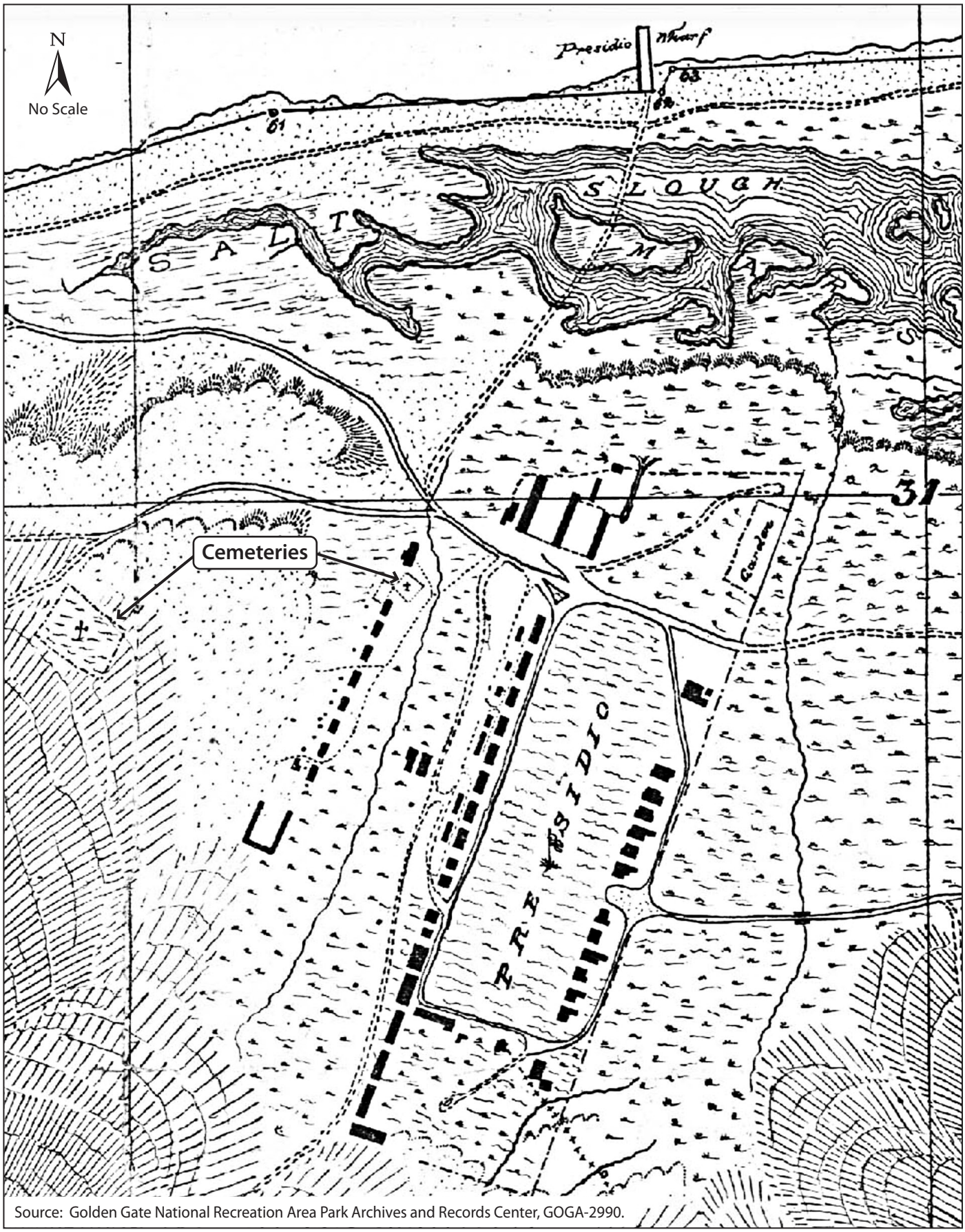
SOUTHBOUND DOYLE DRIVE AND SAN FRANCISCO CEMETERY EXHIBIT

DATE: 07-16-2009

Source: Caltrans 2009.

Graphics... 01108.07-010 (2-10)

Figure 4
Tunnel Plan in Vicinity of Cemetery



Source: Golden Gate National Recreation Area Park Archives and Records Center, GOGA-2990.

Graphics ... 01108.07-010 (2-10)

Figure 5
Excerpt of Wheeler Army Corps Map of Presidio, 1870

Source: Golden Gate National Recreation Area Park Archives and Records Center.

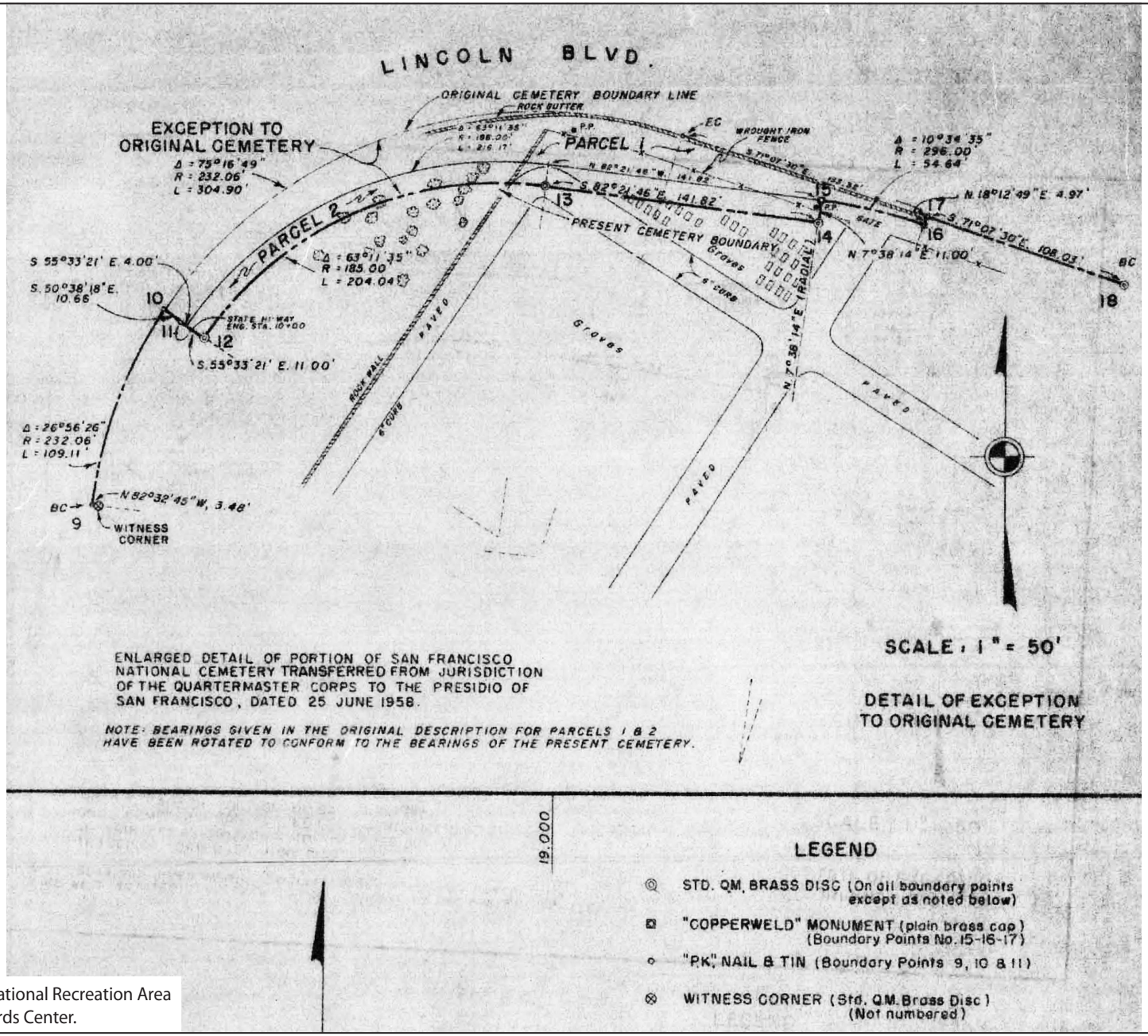
Graphics ... 01108.07-010 (2-10)

Figure 6
Excerpt of Harts Army Corps Map of Presidio, 1915

Source: Golden Gate National Recreation Area Park Archives and Records Center.

Graphics ... 01108.07-010 (2-10)

Figure 7
Excerpt of Quartermaster Army Corps Map of Presidio, 1938



Source: Golden Gate National Recreation Area Park Archives and Records Center.

Graphics ... 01108.07-010 (2-10)

Figure 8
Excerpt of Morrison Army Corps of San Francisco National Cemetery, 1961

Photo 1. Boundary wall, fence, and graves at northwest corner of National Cemetery, facing west.

Photo 2. National Cemetery boundary fence along Lincoln Boulevard, facing north.

ICF INTERNATIONAL

Figure 9
Representative Photographs

Photo 3. Brace arrangement for boundary fence along Lincoln Boulevard, facing northwest.

ICF INTERNATIONAL

Figure 9 (continued)
Representative Photographs

Photo 4. Upper iron bracket anchoring fence to western boundary wall.

Photo 5. Lower arrangement anchoring fence to western boundary wall.

ICF INTERNATIONAL

Figure 9 (continued)
Representative Photographs

Photo 6. Iron fence attachment to cemetery entrance gate post.

Photo 7. West side of the iron vehicular gate at the National Cemetery's western entry, facing south.

ICF INTERNATIONAL

Figure 9 (continued)
Representative Photographs

Photo 8. West side of the iron pedestrian gate at the National Cemetery's western entry, facing north.

Photo 9. Rusted gate hinge, facing northwest.

ICF INTERNATIONAL

Figure 9 (continued)
Representative Photographs

Photo 10. Iron corrosion on gate, facing north.

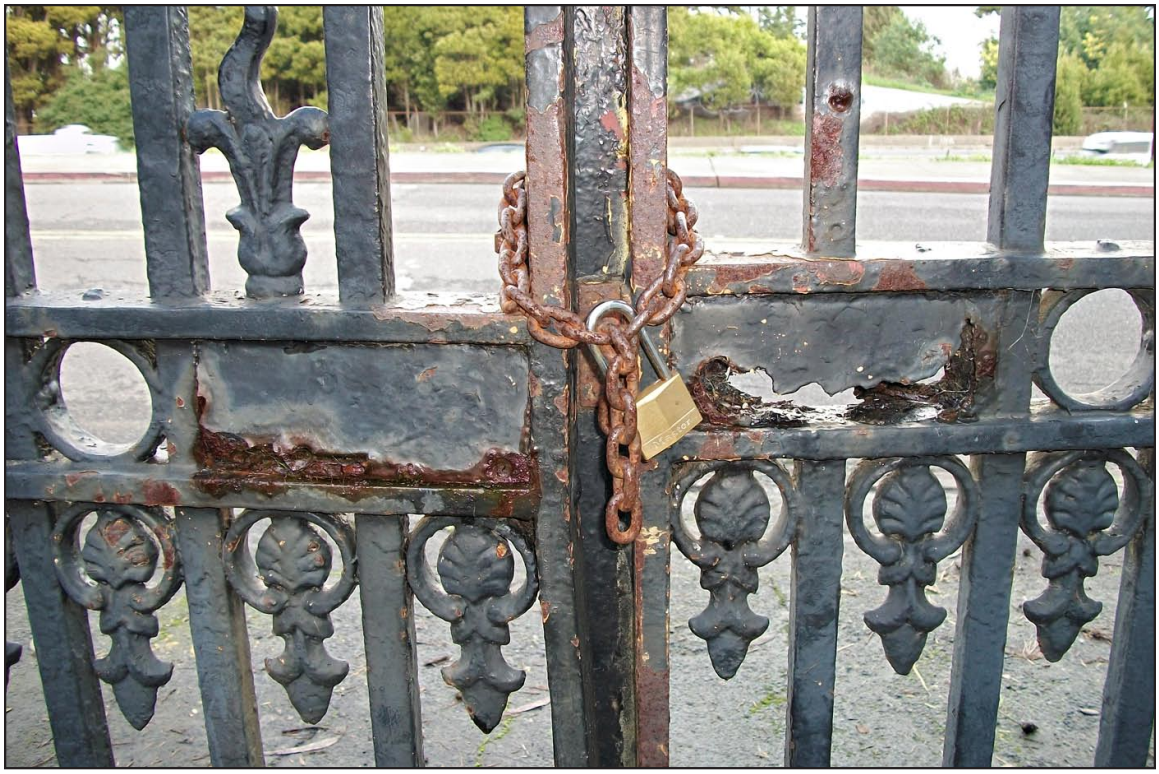


Photo 11. Severe corrosion at center of gate arrangement, facing north.

ICF INTERNATIONAL

Figure 9 (continued)
Representative Photographs

Photo 12. Severe corrosion at corner of gate post, facing northeast.

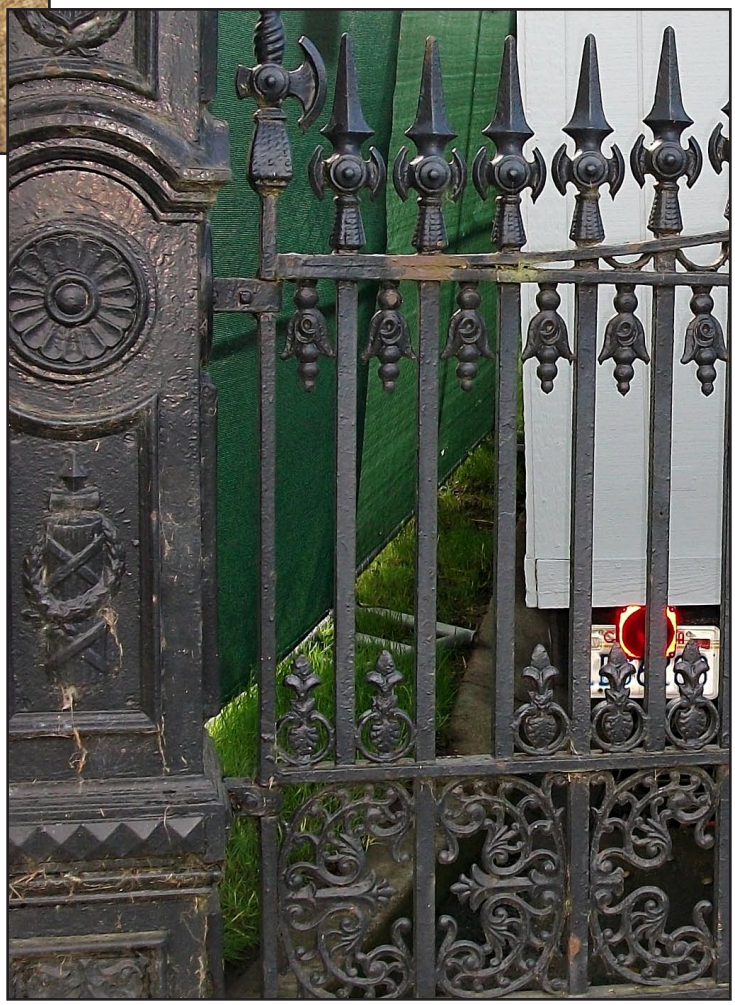


Photo 13. Rust and missing finial at pedestrian gate, facing south.

ICF INTERNATIONAL

Figure 9 (continued)
Representative Photographs

Photo 14. Northwest end of the western boundary wall, facing east.

Photo 15. Lichen at northwest end of western boundary wall, facing east.

Figure 9 (continued)
Representative Photographs

Photo 16. Northwestern area of National Cemetery, facing east.

Photo 17. Interments north and east of administrative and service buildings, facing north.

Photo 18. Building No. 150, VA Cemetery Chapel, facing north.

Photo 19. Building No 151, VA Cemetery Residence, facing northeast.

Figure 9 (continued)
Representative Photographs

Photo 20. Building No. 152, Cemetery Restrooms, facing northeast.

Photo 21. Building No. 153, Cemetery Restrooms, facing southwest.

ICF INTERNATIONAL

Figure 9 (continued)
Representative Photographs

Photo 22. Building No. 154, Cemetery Maintenance Garage, facing northeast.

ICF INTERNATIONAL

Figure 9 (continued)
Representative Photographs

APPENDIX B: FENCE AND GATE CONDITION TABLES

IRON FENCE: CURRENT CONDITIONS

Fence segments are numbered sequentially from west to east. Blank cells indicate no problems observed.

Segment	Paint	Corrosion	Posts	Spears	Rails	Brackets	Braces	Comments
1	Chipped	General		1 missing finial	All three rails bent out to the north (foot rail most severe)	All three brackets broken between finial post and segment 1		
2	Chipped	General				Screws missing, bracket at foot rail broken		
3	Chipped	General						
4	Chipped	General						
5	Chipped	General						
6	Chipped	General						
7	Chipped	General						
8	Chipped	General						
9	Chipped	General						
10	Chipped	General						
11	Chipped	General			Bent foot rail			
12	Chipped	General				Bent bracket between segments 12 and 13		
13	Chipped	General				Bent bracket between segments 12 and 13		
14	Chipped	General						

IRON FENCE: CURRENT CONDITIONS (CONTINUED)

Segment	Paint	Corrosion	Posts	Spears	Rails	Brackets	Braces	Comments
15	Chipped	General				Bent bracket between segments 15 and 16		
16	Chipped	General				Bent bracket between segments 15 and 16		
17	Chipped	General						
18	Chipped	General		1 broken finial				
19	Chipped	General						
20	Chipped	General						
21	Chipped	General						
22	Chipped	General						
23	Chipped	Severe		Severe corrosion on spear at top and foot rails				
24	Chipped	Severe		Severe corrosion on spear at rails		Bent bracket between segment 24 and 25		
25	Chipped	Severe				Bent bracket between segment 24 and 25		Lichen growth has exacerbated corrosion
26	Chipped	Severe						Lichen growth has exacerbated corrosion
27	Chipped	Severe						Lichen growth has exacerbated corrosion

IRON FENCE: CURRENT CONDITIONS (CONTINUED)

Segment	Paint	Corrosion	Posts	Spears	Rails	Brackets	Braces	Comments
28	Chipped	Severe						Lichen growth has exacerbated corrosion
29	Chipped	Severe						Lichen growth has exacerbated corrosion
30	Chipped	Severe						Lichen growth has exacerbated corrosion
31	Chipped	General						
32	Chipped	General						
33	Chipped	General						
34	Chipped	General		One finial severely corroded	Severe corrosion of top rail at finial			
35	Chipped	General						
36	Chipped	General						
37	Chipped	General		One finial severely corroded	Severe corrosion of top rail at finial			
38	Chipped	Severe						Lichen growth has exacerbated corrosion
39	Chipped	General						
40	Chipped	General						
41	Chipped	General		One broken finial				
42	Chipped	General						
43	Chipped	General			Bent foot rail			
44	Chipped	General						

IRON FENCE: CURRENT CONDITIONS (CONTINUED)

Segment	Paint	Corrosion	Posts	Spears	Rails	Brackets	Braces	Comments
45	Chipped	General		One broken finial			Bent brace between segments 45 and 46	
46	Chipped	General					Bent brace between segments 45 and 46	
47	Chipped	General						
48	Chipped	General						
49	Chipped	General		Two broken finials, one bent finial				
50	Chipped	General						
51	Chipped	General						
52	Chipped	General		One broken finial				
53	Chipped	General						
54	Chipped	General						
55	Chipped	Severe		One bent finial	Severe damage to all rails			
56	Chipped	General		One broken finial				
57	Chipped	General						
58	Chipped	General	Bent post between segments 58 and 59					
59	Chipped	General	Bent post between segments 58 and 59	One bent finial				

IRON FENCE: CURRENT CONDITIONS (CONTINUED)

Segment	Paint	Corrosion	Posts	Spears	Rails	Brackets	Braces	Comments
60	Chipped	General						
61	Chipped	General		One broken finial				
62	Chipped	General		One broken finial, one bent spear	Bent foot rail			
63	Chipped	General		One broken finial				
64	Chipped	General						
65	Chipped	General			Bent lock rail, bent foot rail			
66	Chipped	General						
67	Chipped	Severe	Severely corroded finial between segments 67 and 68	One broken finial				
68	Chipped	Severe	Severely corroded finial between segments 67 and 68	One broken finial	Bent lock rail			
69	Chipped	General			Lock and foot rails severely corroded			
70	Chipped	General						
71	Chipped	General						
72	Chipped	General						
73	Chipped	General						
74	Chipped	General						
75	Chipped	General						
76	Chipped	General						

IRON FENCE: CURRENT CONDITIONS (CONTINUED)

Segment	Paint	Corrosion	Posts	Spears	Rails	Brackets	Braces	Comments
77	Chipped	General		One bent spear				
78	Chipped	General						
79	Chipped	General						
80	Chipped	General						
81	Chipped	General					Post brace detached from concrete anchor between segments81 and 82	
82	Chipped	General					Post brace detached from concrete anchor between segments81 and 82	
83	Chipped	General						
84	Chipped	General						
85	Chipped	General			Buried foot rail			
86	Chipped	General			Buried foot rail			
87	Chipped	General			Buried foot rail			
88	Chipped	General						
89	Chipped	General						
90	Chipped	General		Two broken finials		Bent bracket between segments 90 and 91		

IRON FENCE: CURRENT CONDITIONS (CONTINUED)

Segment	Paint	Corrosion	Posts	Spears	Rails	Brackets	Braces	Comments
91	Chipped	General				Bent bracket between segments 90 and 91		
92	Chipped	General						
93	Chipped	General					Bent brace between segments 93 and 94	
94	Chipped	General					Bent brace between segments 93 and 94	
95	Chipped	General						
96	Chipped	General						
97	Chipped	General						

IRON GATE: CURRENT CONDITIONS

Element	Paint	Corrosion	Structural Issues	Decorative work	Hinges	Locks	Handles
Western Pedestrian Gate Post	Chipped	General	None observed		Some corrosion	n/a	n/a
Western Pedestrian Gate	Chipped	General, severe in some areas	None observed	No problems observed	Some corrosion	No problems observed	Severe Corrosion
Western Vehicle Gate Post	Chipped	General, severe in some areas	Structural crack, SE corner	No problems observed	Failing, corroded	n/a	n/a
Western Vehicle Gate	Chipped	General, severe in some areas	Gate sagging due to failing hinge	Two missing finials on middle finial row; one missing finial on second row from top; one broken fretwork panel. Bent stile below lock.	Failing, corroded	Severe corrosion	No problems observed
Eastern Vehicle Gate	Chipped	General	None observed	Three missing finials on middle finial row; one missing finial on top finial row; one broken finial on second row from top	Some corrosion	No problems observed	No problems observed
Eastern Vehicle Gate Post	Chipped	General	Large piece of post broken out on SW corner	No problems observed	Some corrosion	n/a	n/a
Eastern Pedestrian Gate	Chipped	General, severe in some areas	None observed	One missing finial on bottom row; one bent finial on middle row	Some corrosion	No problems observed	Missing
Eastern Pedestrian Gate Post	Chipped	General	None observed	No problems observed	Some corrosion	n/a	n/a

APPENDIX C: GROUND-PENETRATING RADAR SURVEY REPORT AND MAGNETOMETER SUMMARY

October 7, 2009

Stanley Gray
Meridian Surveying
1812 Union Street
San Francisco, CA 94123

Re: Summary of Work – GPR scan for possible unmarked coffins

Stanley,

I appreciate the opportunity to have worked with you on the project located at Crissy Field in San Francisco, CA. I ran numerous scans throughout the area (approximately 900 feet by 25 feet) to determine the presence/location of any unmarked coffins.

I used ground penetrating radar to scan the area with a 400MHz antenna. In this area, I was able to scan approximately 38" to 55" in depth. This antenna was used in conjunction with a SIR-3000 GPR system to scan the area. The area scanned included the approximately 12 – 15 feet on each side of the iron fence at the cemetery. Additionally there was an area approximately 100 feet long on the hillside that was scanned.

During my entire scanning process, I did not find any indication of an unmarked grave. I did scan an area with a known gravesite to provide you with an image received from the coffin.

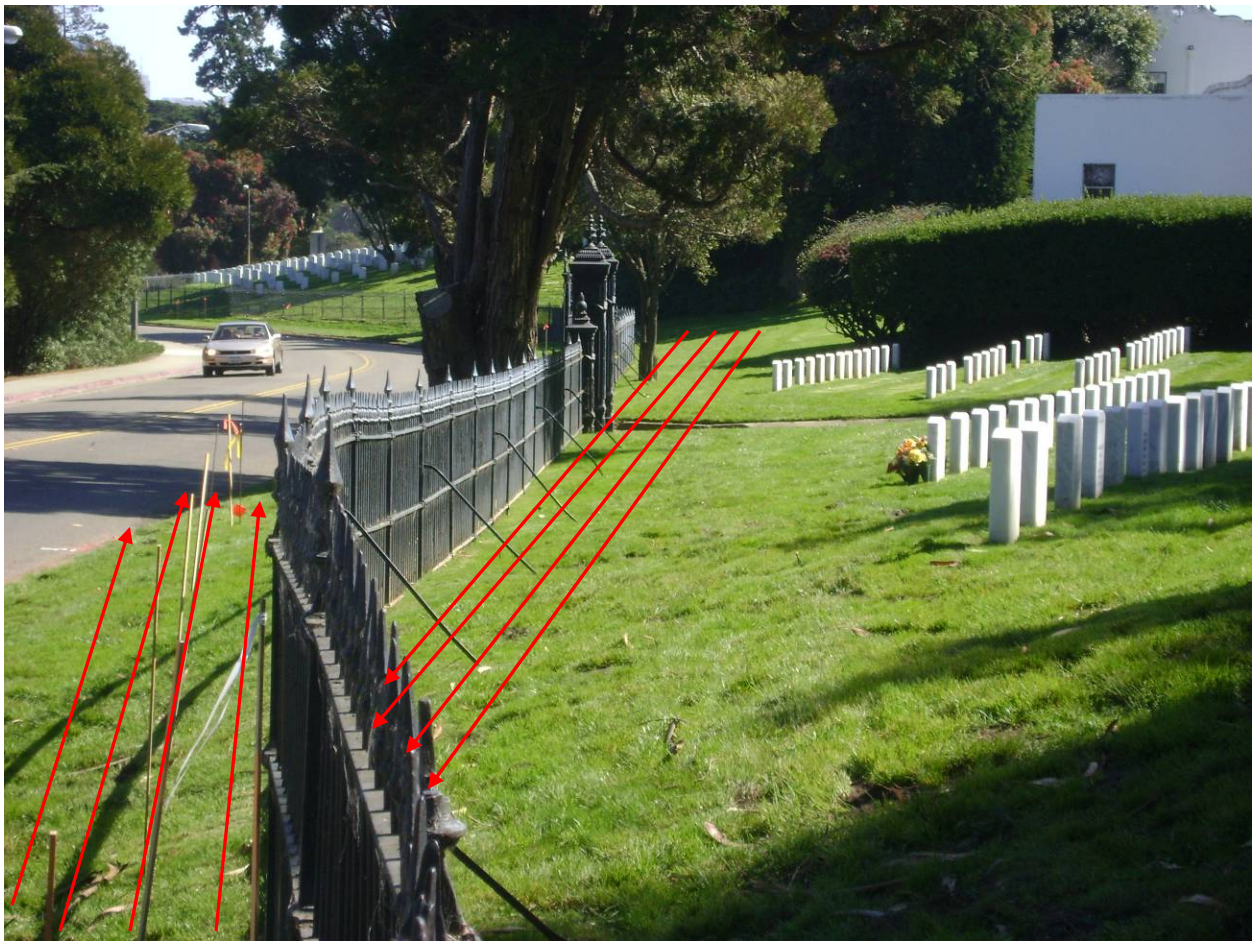
I appreciate the opportunity and I look forward to working with you again. Please feel free to contact me if you have any questions, or if you need additional information.

Regards,

Jason Wachter
Regional Director – Western US
Ground Penetrating Radar Systems, Inc.
213-278-4304 – Mobile #
Jason.wachter@gp-radar.com

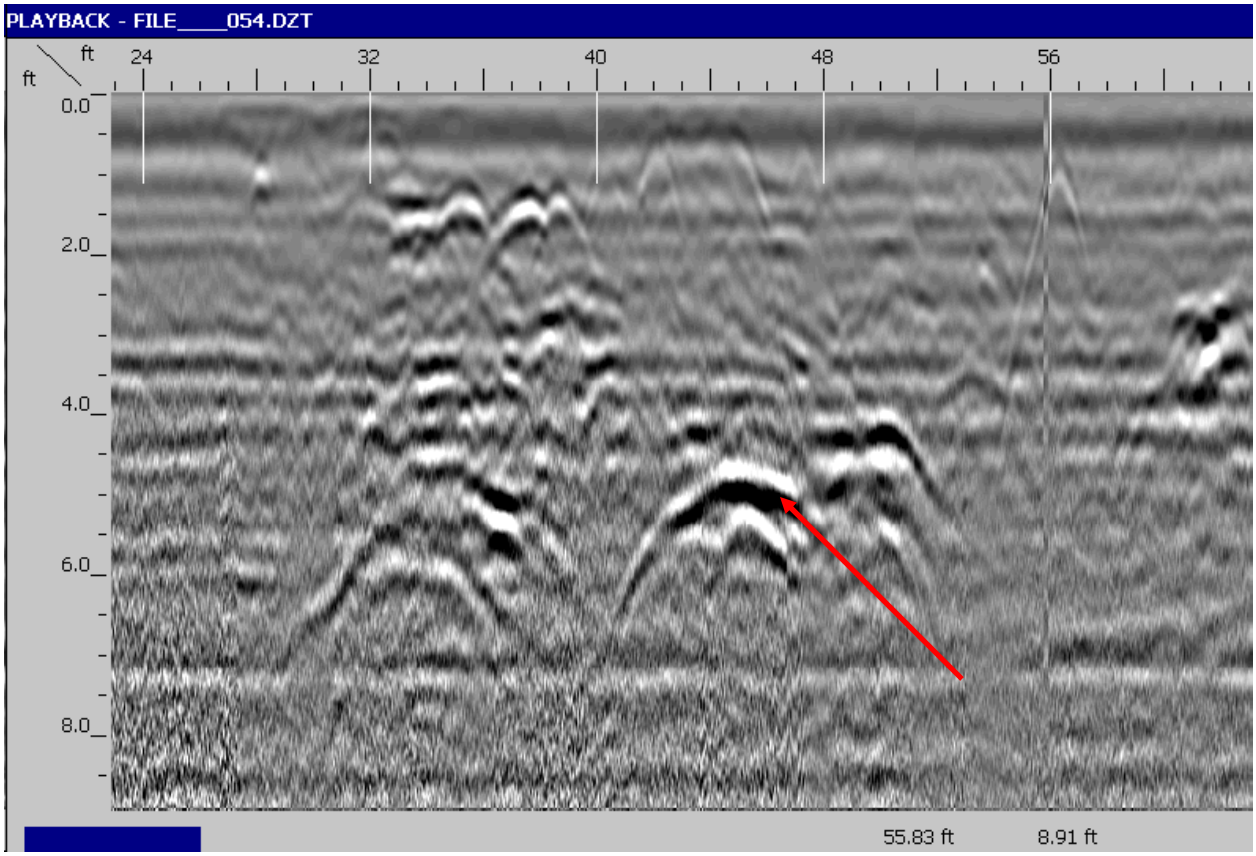
Here is an arial photo of the area scanned. I have added a red box to indicate the approximate area scanned with the ground penetrating radar system.

GPR Survey, 10-07-09



Here is a photo of the one of the areas scanned. I have added red arrows to the photo to show an example of scanning paths.

The GPR system was used from the curb to the fence, then approximately 15 feet on the inside of the fence.



Here is an image from the ground penetrating radar system. In this image you can clearly see the location of a coffin. This image was taken from a scan over a known gravesite. I have added a red arrow indicate the location of the coffin.

Again, this image was taken from a known gravesite. I did not locate any images similar to this in the areas scanned near the fence.

From: Crawford, Karen
To: Crawford, Karen;
Subject: FW: Lincoln Blvd/SF National Cemetary Ground Penetrating Radar/ Magnetometer 10/7/2009 survey
Date: Tuesday, December 01, 2009 2:21:03 PM

From: "Stan" [stan@meridiansurvey.com]
Sent: 10/16/2009 11:55 AM MST
To: "Marty Murphy" <MartyM@ghilottibros.com>; Meg Scantlebury
Cc: "Nathan Foley" <nathan@meridiansurvey.com>; "Greg Ippolito" <greg@meridiansurvey.com>; "Rick Mather" <Rick@meridiansurvey.com>
Subject: Lincoln Blvd/SF National Cemetary Ground Penetrating Radar/ Magnetometer 10/7/2009 survey

Marty/Meg,

BRIEF OVERVIEW:
Project limit lines & Grid lines were established and located by survey.
We coordinated both a Ground Penetrating Radar survey and a magnetometer survey and they did not show any anomalies.

GPR found nothing detectable within the depicted coverage area other than utilities, sprinklers, underground pipes, etc which were not the subject of the survey. The wrought iron fence had support posts on the inside face requiring us to maneuver around them.

Magnetometer results were poor/almost unusable due to: buried high voltage lines paralleling the alignment, iron fence and requirements to keep one traffic lane open.

MAGNETOMETER SUMMARY:
The purpose of the magnetometer survey was to attempt to detect small magnetic anomalies due to iron materials buried in potential gravesites. The gradient is just the difference between the two magnetometer sensor values. It is very difficult to contour with such large gradient variations. These small anomalies can be on the order

of 1-100nT difference between the two magnetometer sensors. There was clearly a problem with this site in attempting to resolve such small anomaly patterns. There was an iron fence running through the middle of the survey area and there were high voltage underground power lines along the road which coincides with the north edge of the survey area. Only at the western end are there potential locations that may merit investigation. A second map has been provided to expand the magnetic response in that area. The data from each sensor was contoured for quality control and initial inspection.
Clearly the total field data is not useable in this survey. Even the western section had problems as the proximity of moving cars created false anomalies on each of the total field sensors but was significantly reduced by using the vertical gradient.

ATTACHMENTS:

1. Survey plat showing coverage limits (survey was extended 100 feet West of stone wall as instructed on site)
2. Magnetometer output
3. Photos:
    i. Survey photo (10-07-09 021)
    ii. Line A-E coverage photo (typical)
    iii. GPR photo
    iv. Magnetometer Photo
4. Statement
5. Invoice per agreement

Please reply so that we know this was not filtered and that the invoice is acceptable and has been placed in process.

Contact me directly if I can be of assistance on this matter or anything else.

Sincerely,
MSE, INC

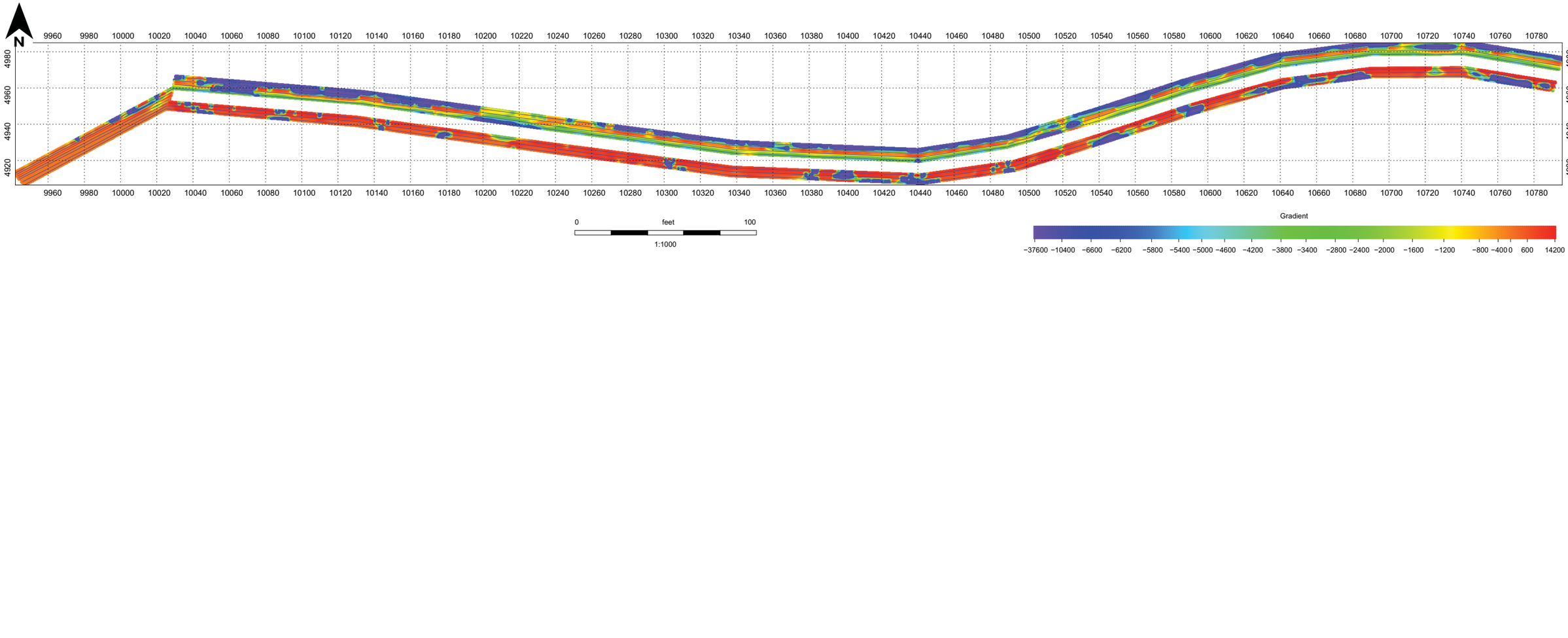
Stanley T. Gray, PLS 6784 (Exp. 9/30/10)
Principal

415 716 5634 cell

www.meridiansurvey.com

[NOTE: RAW MAGNETOMETER DATA IS 175 PAGES LONG

AND IS NOT INCLUDED IN THIS ATTACHMENT]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4980
4960
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feet
100
1:1000
Gradient
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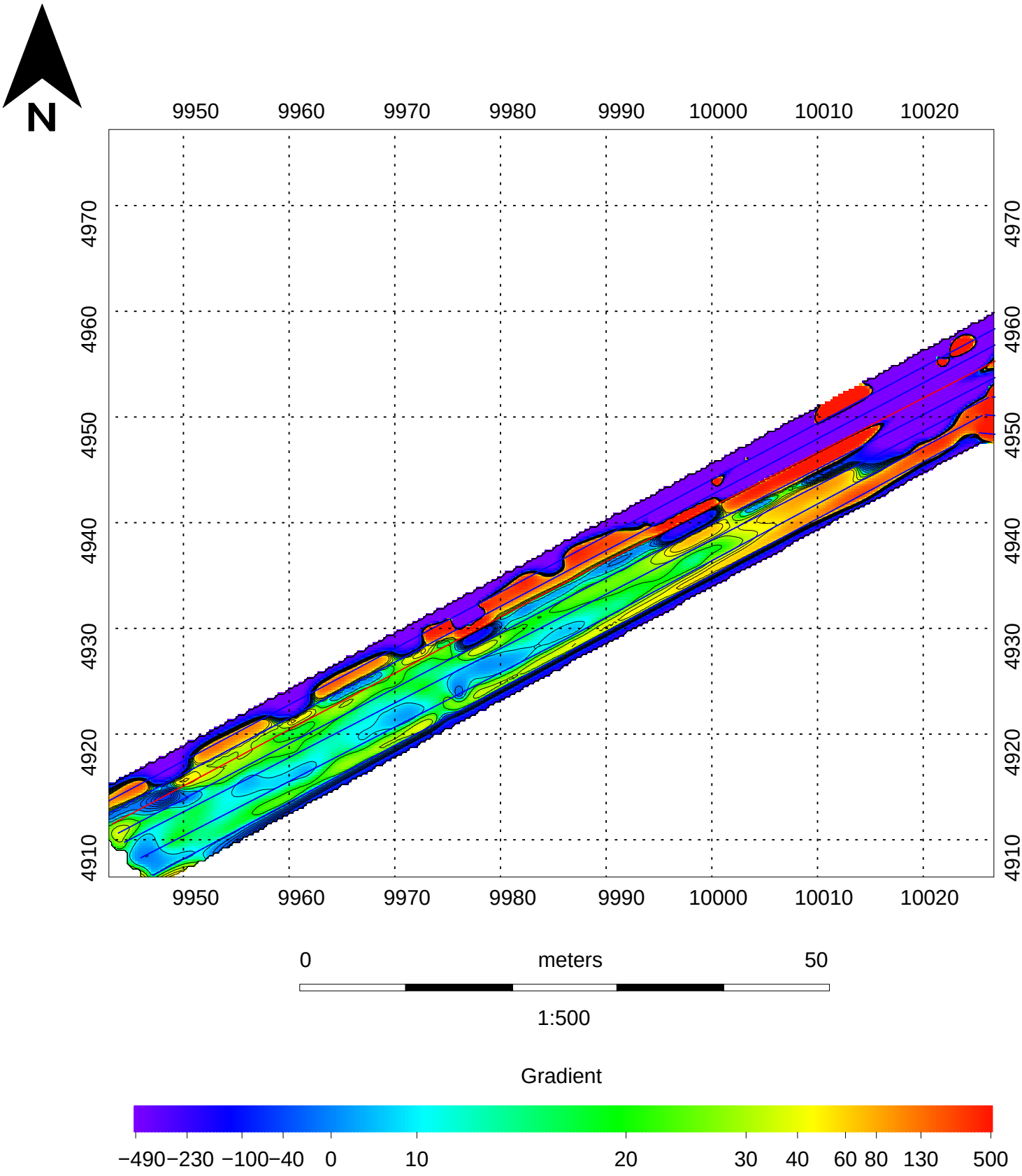
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−230
−100
−40
0
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20
30
40
60
80
130
500

Survey Photo, 10-07-09

Line A-E Coverage

Magnetometer Survey, 10-7-09